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MANDATED REGULATORY REPORTING TO COUNCIL 2009 DRINKING WATER SYSTEM SCHEDULE 22 SUMMARY REPORT

The Environmental Services Committee recommends the adoption of the recommendation contained in the following report dated March 10, 2010, from the Commissioner of Environmental Services.

1. RECOMMENDATION

It is recommended that:

1. The Regional Clerk forward a copy of this report and attachment to the Clerks of the nine local municipalities.

2. PURPOSE

This report fulfills the requirements mandated under Schedule 22 of the Ministry of the Environment's Drinking Water Systems Ontario Regulation (O. Reg. 170/03). This regulation requires that Regional Council be provided with an understanding of York Region's drinking water systems capacities for the 2009 reporting year. The 2009 Drinking Water System Schedule 22 Summary Report is required to be submitted to Regional Council no later than March 31st of the reporting year (*see Attachment 1*).

3. BACKGROUND

Legislation mandates system owners to report to Council and the Public

Legislative amendments to the *Safe Drinking Water Act, 2002*, released in 2004 by the Ministry of the Environment, resulted in substantial changes to Water and Wastewater Operations. Amendments to O. Reg. 170/03 increased regulatory compliance requirements on system operations. Reporting under Schedule 22 and Section 11 of O. Reg. 170/03 was mandated, requiring the owner of a drinking-water system to prepare an annual report in accordance with the Regulation and submit these reports to Regional Council and the public.

Drinking Water System Schedule 22 Summary Report provides Regional Council with summary of requirements for water systems and capacity

Reporting requirements under Schedule 22 require York Region to submit a Drinking Water System Schedule 22 Summary Report to Regional Council no later than March 31st of each reporting year. This report provides the owners and Regional Council with an

understanding of York Region's drinking water systems status and capacities for the reporting year. The report includes:

- Rated capacity and flow rates approved by each Permit to Take Water approval.
- Quantities and flow rates of water supplied.
- Monthly average, maximum daily flow and daily instantaneous peak flow rates.
- Legislative requirements under the *Safe Drinking Water Act 2002*.
- Provincial Officer Orders the system failed to meet and related corrective actions.

Requirements of the Annual Water Quality Report

Reporting under Section 11 of O.Reg. 170/03 requires York Region to submit an Annual Water Quality Report to the local municipalities and the public no later than February 28th of each reporting year. This report provides the local municipalities and the public with a summary of the drinking water system, and the water quality produced, treated and delivered for the reporting year. The Annual Water Quality Report can be accessed through York Region's website after February 28th of each reporting year.

It is mandated that Regional Council receive the Drinking Water System Schedule 22 Summary Report.

4. ANALYSIS AND OPTIONS

Findings of the 2009 Drinking Water System Schedule 22 Summary Report met the limits imposed by the Permit to Take Water

All of York Region's Drinking Water Systems met the monthly average flow, maximum daily withdrawal, and the allowable daily withdrawal limits imposed by the Permit to Take Water for the 2009 reporting year.

In 2009, 13 of 37 production wells experienced short-term incidents where instantaneous peak flow rates exceeded the Permit to Take Water limits. Water production wells may experience brief flow spikes (typically, less than five minutes) where the instantaneous flow rate exceed the Permit to Take Water limits. Flow spikes are generally associated with start-up of our well pumps. The Ministry of Environment is satisfied that any short term flow spikes recorded at York Region production wells are expected and do not pose compliance issue.

Additional water was supplied to York Region from the Peel Water Supply above the maximum permitted withdrawal limit as prescribed in the operating agreement for the month of June 2009. These additional water takings were offset by a reduction in water takings in the fall of 2009. This reduction was attributed to a lower water demand for the month of September as well as a watermain break which occurred on the York-Peel

feedermain. Additional flow is being supplied from the Toronto Water Supply until the Peel watermain break is repaired and the connection is re-established. Repairs are currently underway and are scheduled to be completed by spring 2010.

Operating above the maximum permitted withdrawal limit is acceptable and is not classified as a regulatory exceedence as prescribed in the operating agreement when agreed upon by both York Region and the Region of Peel.

York Region Drinking Water Systems In Compliance with Ministry Inspections

The Ministry of the Environment has a rigorous and comprehensive inspection program for municipal residential drinking water systems. The objective of this program is to determine compliance with requirements under the *Safe Drinking Water Act, 2002*, associated regulations, Ministry Permit to Take Water and Certificates of Approvals.

For the 2009 reporting year, no orders were issued by the Ministry of the Environment under the *Safe Drinking Water Act, 2002* or the O. Reg. 170/03 for any inspections conducted on York Region's municipal drinking water systems.

In June of each year, the Ministry of the Environment publishes the Ontario Chief Drinking Water Inspector's Annual Report. In this report municipal drinking water systems receive an Inspection Report Ratings (IRR) on a scale of 0-100% based on the inspection report results achieved for the prescribed reporting year. The IRR published in the Ontario Chief Drinking Water Inspector's Annual Report are reported for the previous inspection year. Results of the 2007-2008 IRR were presented to Committee on April 8, 2009, York Region achieved a 99.84% compliance score on the Ministry of the Environment inspections, resulting in a second place ranking compared to other Greater Toronto Area (GTA) municipalities. As for samples taken that meet Provincial water quality standards, the Region is first among GTA municipalities with a score of 99.98%.

Relationship to Vision 2026

The 2009 Schedule 22 Summary Report support two of the eight goals of Vision 2026 (Goal 2: Enhanced Environment, Heritage and Culture, Goal 7: Infrastructure for a Growing Region) by:

- Complying with and maintaining high standards for drinking-water quality.
- Providing safe and dependable water supply to systems and facilities in area municipalities.

5. FINANCIAL IMPLICATIONS

There are no financial implications associated with this report.

6. LOCAL MUNICIPAL IMPACT

York Region's Drinking Water Systems meet all regulatory compliance prescribed through applicable Federal and Provincial legislation, Certificates of Approval, and Permits to Take Water, enabling the Region to deliver safe drinking water to the local municipalities.

7. CONCLUSION

Findings from the 2009 reporting year continue to demonstrate that York Region meets all regulatory compliance requirements prescribed through applicable Federal and Provincial legislation with regards to provision of safe drinking water as well as our commitment to communicate our performance to our stakeholders.

For more information on this report, please contact Laura McDowell, Director of Environmental Promotion and Protection at (905)830-4444 Ext. 5077.

The Senior Management Group has reviewed this report.

(The attachment referred to in this clause is attached to this report.)

York Region Drinking Water System Schedule 22 Summary Report

**Mandated under Schedule 22 of the Ministry of the Environment's
Drinking Water Systems Regulation (O. Reg. 170/03)**

2009 Reporting Year

**Presented to the York Region Transportation and Works Committee and
York Regional Council**



Executive Summary

York Region is responsible for the production, treatment and storage of drinking water to the communities of Georgina, Aurora, East Gwillimbury, Newmarket, Whitchurch-Stouffville, King Township, and parts of the City of Vaughan. York Region is also responsible for the transmission of drinking water from the City of Toronto and the Regional Municipality of Peel to the communities of Richmond Hill, Markham, City of Vaughan, and parts of the Towns of Aurora and Newmarket.

This report has been created to fulfill the requirements outlined in Schedule 22 of the Ministry of the Environment's Drinking Water Systems Regulation O. Reg. 170/03.

This report provides a summary of the individual drinking water systems and a series of figures on the 2009 pumping history for each individual well and system in York Region. In 2009, all of York Region's Drinking Water Systems met the withdrawal limits imposed by its Permits to Take Water (PTTW).

In 2009, 13 of 37 production wells experienced short-term incidents where instantaneous peak flow rates exceeded the Permit To Take Water limits. Water production wells may experience brief flow spikes (typically, less than five minutes) where the instantaneous flow rate exceed the Permit To Take Water limits. Flow spikes are generally associated with start-up of the production wells. The Ministry of Environment is satisfied that any short-term flow spikes recorded at York Region production wells are expected and do not pose a compliance issue. The peak flows over the PTTW limit are identified in each of the '*Daily Instantaneous Peak Flow*' graphs.

Additional water was supplied to York Region from the Peel Water Supply above the maximum permitted withdrawal limit as prescribed in the operating agreement for the month of June 2009. Operating above the maximum permitted withdrawal limit is acceptable and is not classified as a regulatory exceedence as prescribed in the operating agreement when agreed upon by both York Region and the Region of Peel.

A summary of the findings for each drinking water system are presented in Table E1.

TABLE E1: York Region Drinking Water System Compliance Summary

Water Supply	Met Limits Imposed By The PTTW
Ansnoerveldt	Withdrawal below allowable limit
Aurora	Withdrawal below allowable limit <i>Instantaneous peak flow rates recorded above allowable limit</i>
Ballantrae	Withdrawal below allowable limit <i>Instantaneous peak flow rates recorded above allowable limit</i>
Georgina	Withdrawal below allowable limit
Keswick	Withdrawal below allowable limit
King City	Withdrawal below allowable limit
Kleinburg	Withdrawal below allowable limit <i>Instantaneous peak flow rates recorded above allowable limit</i>
Mount Albert	Withdrawal below allowable limit
Newmarket/ East Gwillimbury	Withdrawal below allowable limit <i>Instantaneous peak flow rates recorded above allowable limit</i>
Nobleton	Withdrawal below allowable limit
Schomberg	Withdrawal below allowable limit
Stouffville	Withdrawal below allowable limit <i>Instantaneous peak flow rates recorded above allowable limit</i>
Yonge Street Aquifer	Withdrawal below allowable limit
York Water System	Withdrawal below allowable limit
Toronto Water Supply	Withdrawal below allowable limit
Peel Water Supply	<i>Withdrawal above allowable limit</i>

There have been no Provincial Orders issued by the Ministry of the Environment under the *Safe Drinking Water Act (2002)* or the Ontario Regulation 170/03 for the period of January 1 – December 31, 2009.

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2009 Reporting Year**

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Introduction

The purpose of the Summary Report is to provide an understanding of the Regional Municipality of York's (York Region) drinking-water system status and capacities for the reporting period of January 1 – December 31, 2009. It has been created to fulfill the requirements mandated under Schedule 22 of the Ministry of the Environment's Drinking Water Systems Regulation, Ontario Regulation 170/03.

The Annual Water Quality Report, which details the quality of York Region's drinking water, has been completed separately to fulfill the requirements of Section 11 of Ontario Regulation 170/03. This report will be available on request through the Environmental Services Department, available on-line through the York Region website, as well as distributed to the local area municipalities serviced by the water system after February 28th, 2010.

2.0 Drinking-Water Systems Information

2.1 Ansnorveldt

York Region operates a water supply system to service Ansnorveldt, Township of King, under authority of a Certificate of Approval (C of A) issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit to Take Water (PTTW) also issued by the MOE. Details of the C of A and PTTW and other relevant classification information are presented in Table 1. All system upgrades required by the C of A have been completed.

TABLE 1: Ansnorveldt Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number: Issue Date:	4234-6VJPWK January 15, 2007
Current Permit to Take Water Number: Issue Date: Expiry Date:	02-P-3050 June 21, 2002 March 31, 2012
MOE Waterworks Number:	260002213
System Classification:	Water Distribution II (WD II)

2.1.1 Water Taking

The PTTW for the Ansnorveldt Water Supply System allows York Region to withdraw up to 285,120 litres per day from production wells 1 and 2.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored and alarmed on a continuous basis to ensure that the regulated flows are not exceeded.

2.1.2 Measuring Points

Flow meters are in place downstream of each production well and record the instantaneous flow rate and total volume of water that has passed through the meter. The flow meters are calibrated annually to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored using two methods which provides York Region with the opportunity to compare and contrast data, in the event one method should fail.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This ‘manual’ data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

2.1.3 Water Withdrawal

The total volume of water taken from the production wells of the Ansnorveldt Water Supply System for the reporting period of January 1 – December 31, 2009 was 15,056,784 litres or 41,251 litres per day on average.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

TABLE 2: Permitted and Actual Maximum Daily Withdrawal from the Ansnorveldt Production Wells for January 1 – December 31, 2009

Location	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Withdrawal During Peak Day
Well 1	100,800	33,352 – July 16, 2009	33.1%
Well 2	184,320	59,156 – June 12, 2009	32.1%

The maximum permitted water withdrawal and the actual annual withdrawal recorded daily water taking are presented in Table 3.

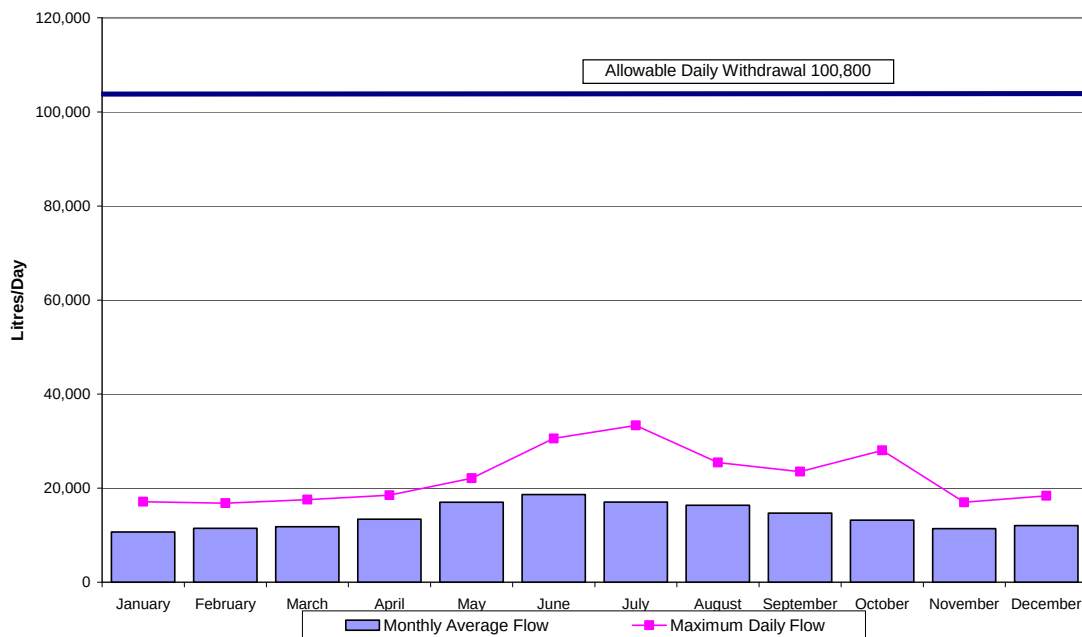
TABLE 3: Permitted and Actual Maximum Withdrawal from the Ansnorveldt Production Wells for January 1 – December 31, 2009

Annual Permitted Withdrawal (Litres)	Actual Annual Withdrawal (Litres)	Percentage of Permitted Annual Withdrawal
104,068,800	15,056,784	14.5%

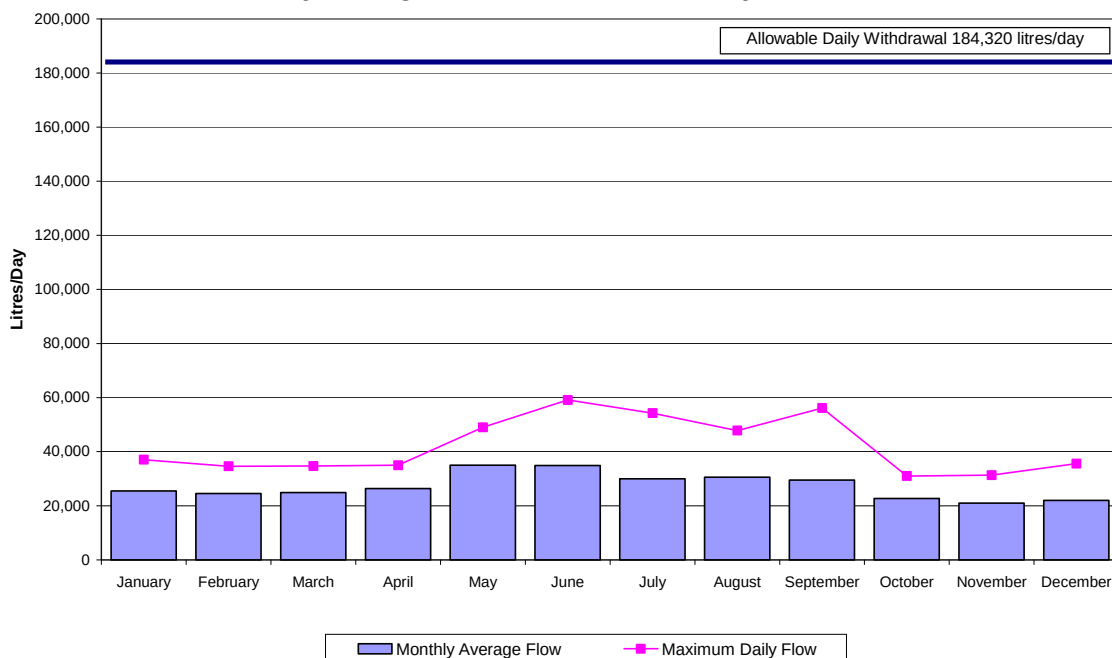
The monthly average flows, the maximum daily withdrawals, and the permitted daily withdrawal for the reporting period of January 1 – December 31, 2009 are shown in Figures 1 and 2.

**York Region Drinking Water System Schedule 22 Summary Report
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**Figure 1: Ansnorveldt Well No. 1
Monthly Average Flow and Monthly Maximum Flow 2009**



**Figure 2: Ansnorveldt Well No. 2
Monthly Average Flow and Maximum Daily Flow 2009**

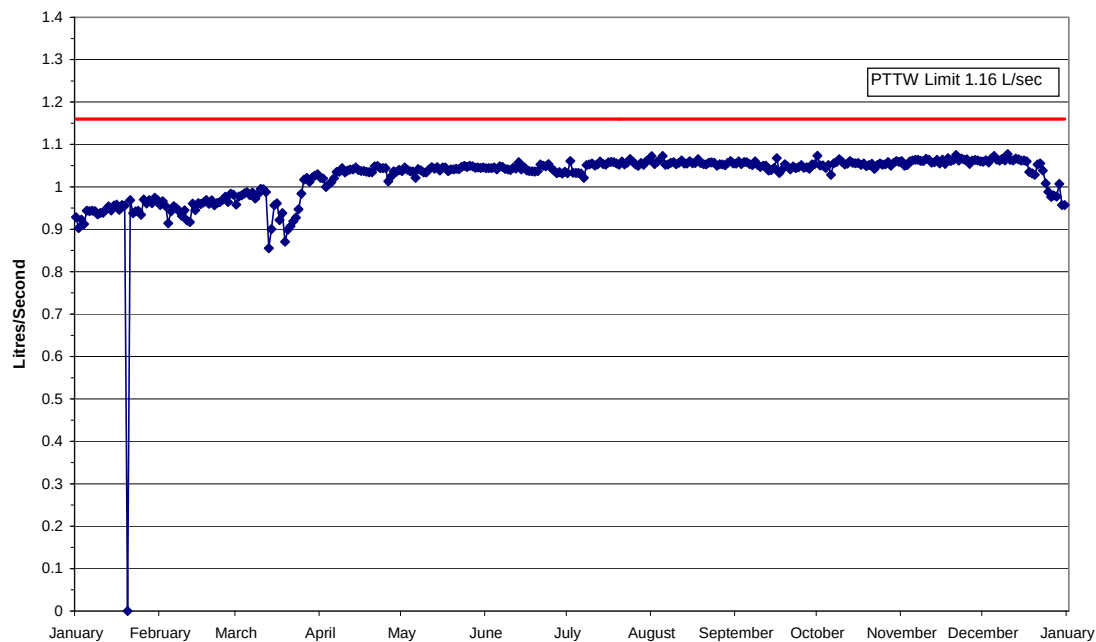


The actual volumes of water taken from the Ansnorveldt production wells during January 1 – December 31, 2009 did not exceed the permitted daily withdrawal volumes.

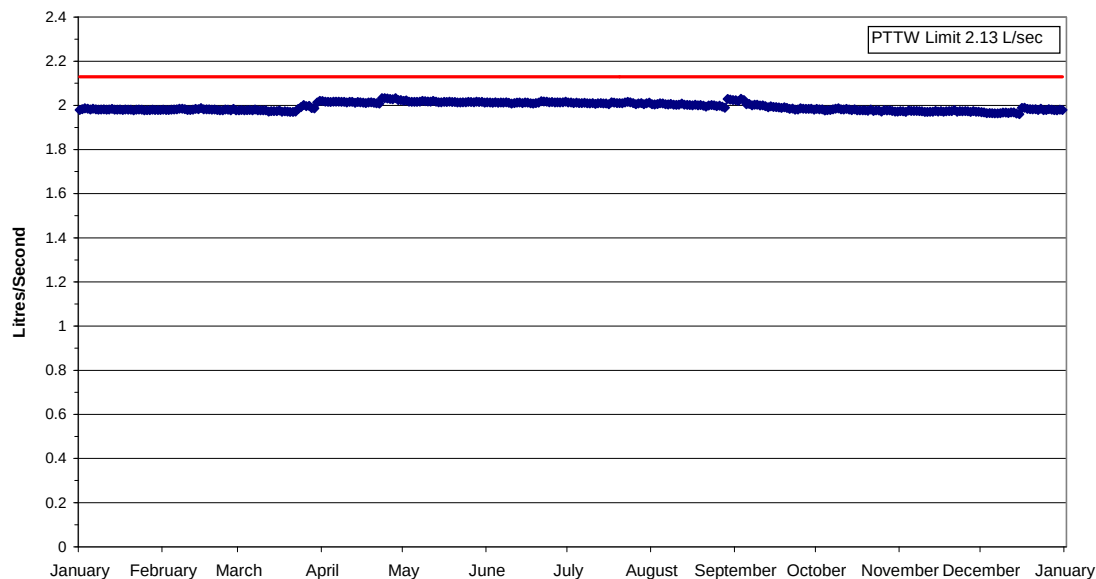
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The 'Daily Instantaneous Peak Flow (litres)' for January 1- December 31, 2009 are presented in Figures 3 and 4.

**Figure 3: Ansnorveldt Well No. 1
Daily Instantaneous Peak Flow 2009**



**Figure 4: Ansnorveldt Well No. 2
Daily Instantaneous Peak Flow 2009**



2.2 Aurora

York Region operates a water supply system to service the Town of Aurora under authority of a C of A issued by the MOE. The C of A includes reference to the PTTW also issued by the MOE. Details of the C of A and PTTW and other relevant classification information for the Aurora Water Supply are presented in Table 4. All system upgrades required by the C of A have been completed.

TABLE 4: Aurora Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number: Issue Date:	3914-77WNG5 October 25, 2007
Current Permit to Take Water Number: Issue Date: Expiry Date:	6623-68QQ6L March 10, 2005 March 31, 2015
MOE Waterworks Number:	220002440
System Classification:	Water Distribution & Supply III (WDS III)

2.2.1 Water Taking

The PTTW for the Aurora Water Supply System allows York Region to withdraw up to 31,618,944 litres per day from all production wells.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored and alarmed on a continuous basis to ensure that the regulated flows are not exceeded.

2.2.2 Measuring Points

Flow meters are in place downstream of each production well and record the instantaneous flow rate and total volume of water that has passed through the meter. The flow meters are calibrated annually to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored using two methods which provides York Region with the opportunity to compare and contrast data, in the event one method should fail.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This ‘manual’ data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.
2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored

electronically. This data was used to generate the instantaneous peak flow rate figures.

2.2.3 Water Withdrawal

The total volume of water taken from the production wells of the Aurora Water Supply System for the reporting period of January 1 – December 31, 2009 was 2,289,883,079 litres or 6,273,652 litres per day.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are presented in Table 5.

TABLE 5: Permitted and Actual Maximum Daily Withdrawal from the Aurora Production Wells for January 1 – December 31, 2009

Location	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Daily Withdrawal During Peak Day
Well 1	3,273,120	2,824,484 – September 20, 2009	86.3%
Well 2	5,891,760	5,190,750 – September 20, 2009	88.1%
Well 3	5,237,136	4,752,375 – September 19, 2009	90.7%
Well 4	7,855,632	5,623,250 – September 20, 2009	71.6%
Well 5	5,891,760	3,700,250 – December 16, 2009	62.8%
Well 6	3,469,536	1,521,125 – September 19, 2009	43.8%

The maximum permitted water withdrawal and the actual annual withdrawal recorded daily water taking are presented in Table 6.

TABLE 6: Permitted and Actual Maximum Withdrawal from the Aurora Production Wells for January 1 – December 31, 2009

Annual Permitted Withdrawal (Litres)	Actual Annual Withdrawal (Litres)	Percentage of Permitted Annual Withdrawal
11,540,914,560	2,289,883,079	19.8%

Table 6 shows a low percentage of permitted withdrawal of 19.8%. This reduction in withdrawal occurred due to scheduled maintenance on production wells 1 to 4 and 6. To accommodate this work and meet system demand, additional water was supplied through York Regions connection to the Region of Peel and City of Toronto lake based water supply system. Higher precipitation in 2009 also contributed to lower than average withdrawal volumes from the Aurora water supply and surrounding water supply systems.

The monthly average flows, the maximum daily withdrawals, and the permitted daily withdrawal for the reporting period of January 1 – December 31, 2009 are shown in Figures 5 through 10.

**Figure 5: Aurora Well No. 1
Monthly Average Flow and Maximum Daily Flow 2009**

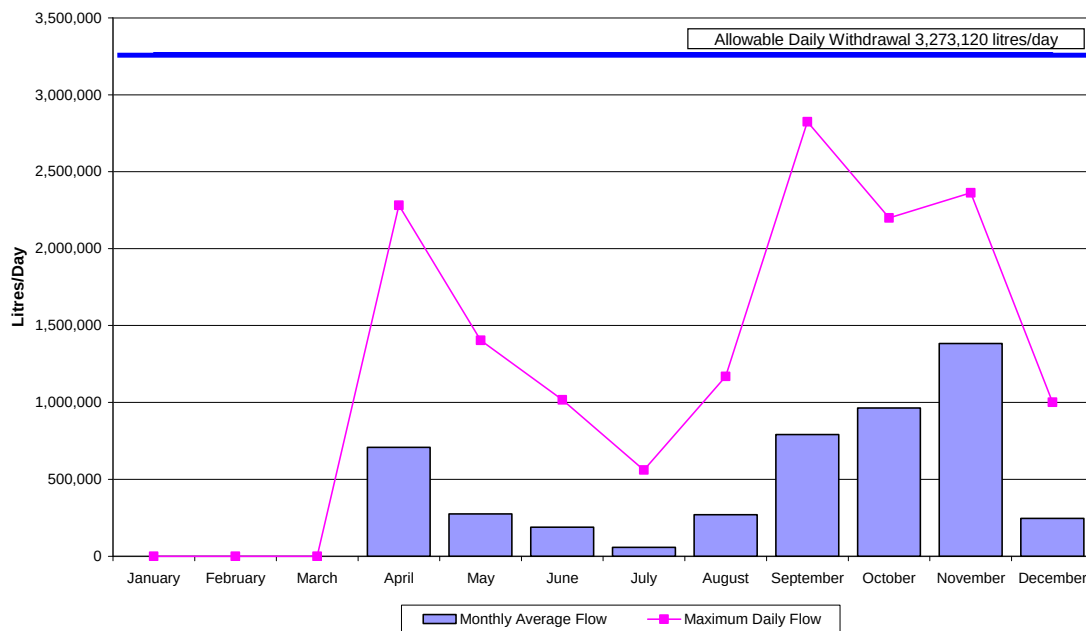
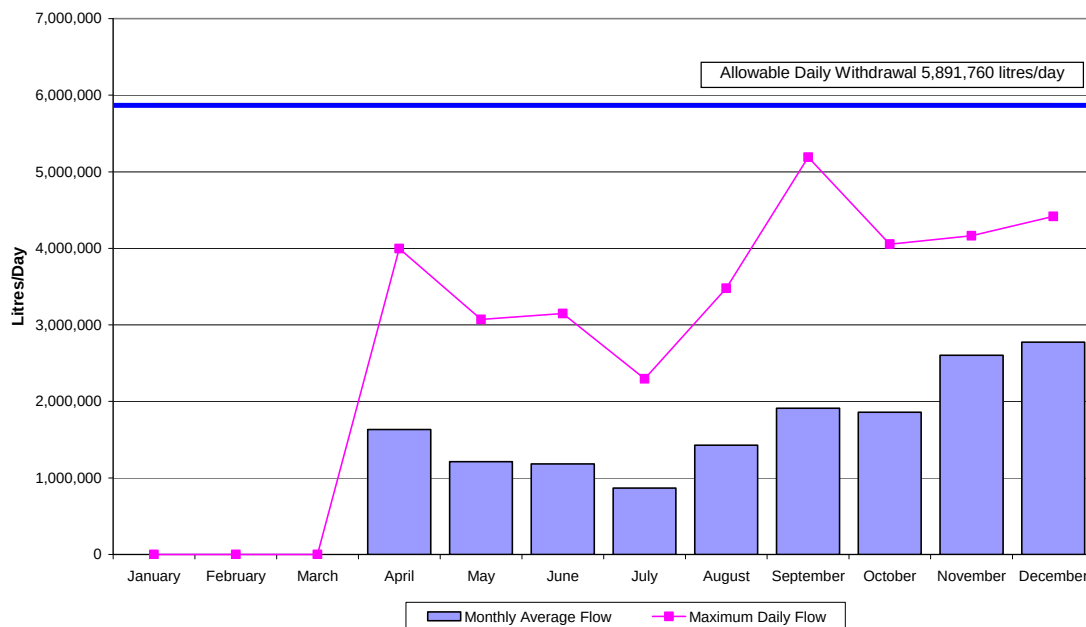


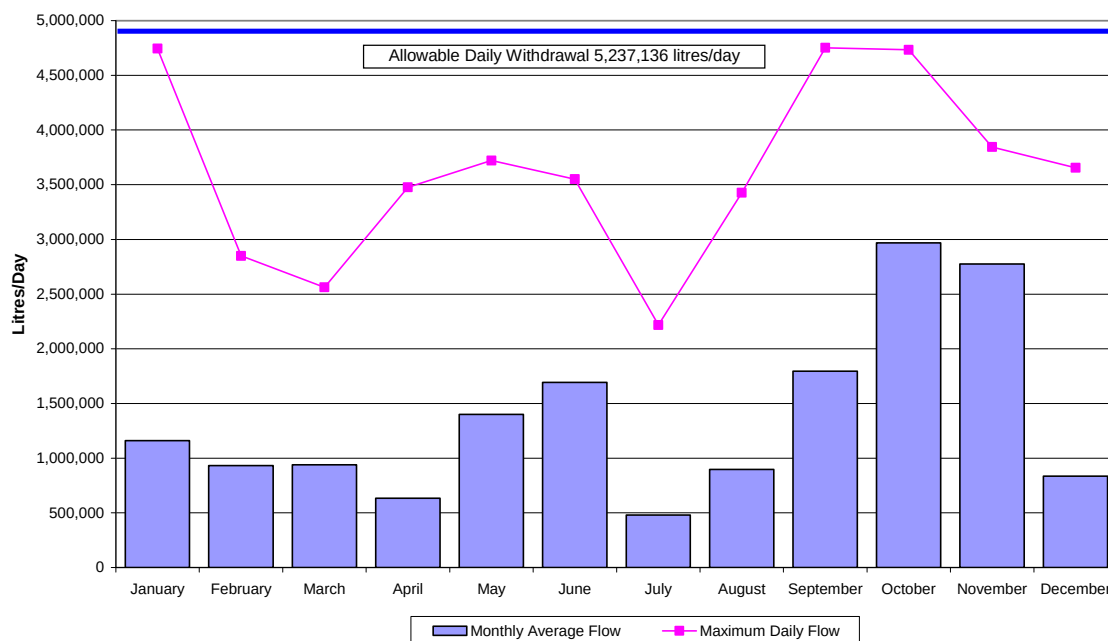
Figure 5 and 6 shows a reduced monthly average flow or no monthly average flow recorded for the month of January, February, and March 2009. This reduction in flow occurred due to scheduled maintenance conducted on the well to improve the overall operation of the water system.

**Figure 6: Aurora Well No. 2
Monthly Average Flow and Maximum Daily Flow 2009**

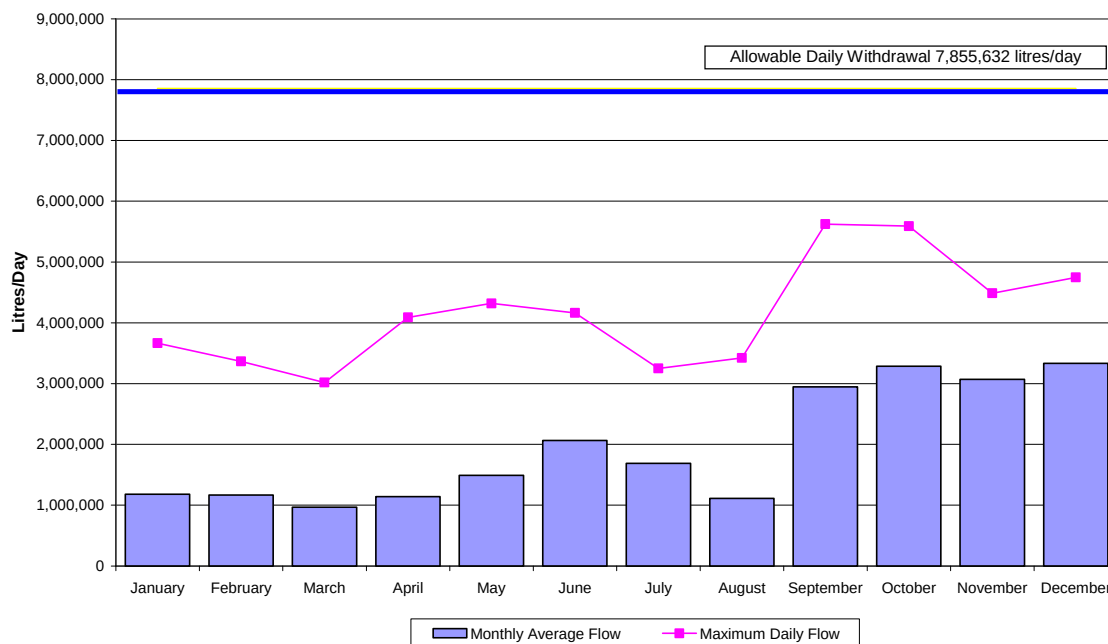


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**Figure 7: Aurora Well No. 3
Monthly Average Flow and Maximum Daily Flow 2009**



**Figure 8: Aurora Well No. 4
Monthly Average Flow and Maximum Daily Flow 2009**



**Figure 9: Aurora Well No. 5
Monthly Average Flow and Maximum Daily Flow 2009**

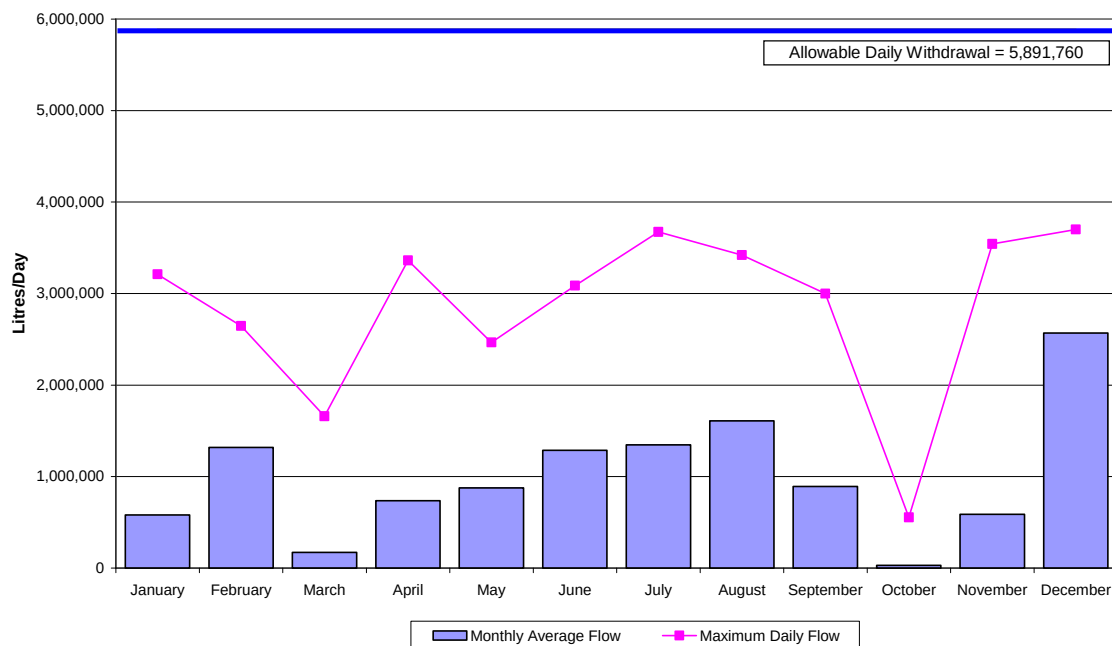
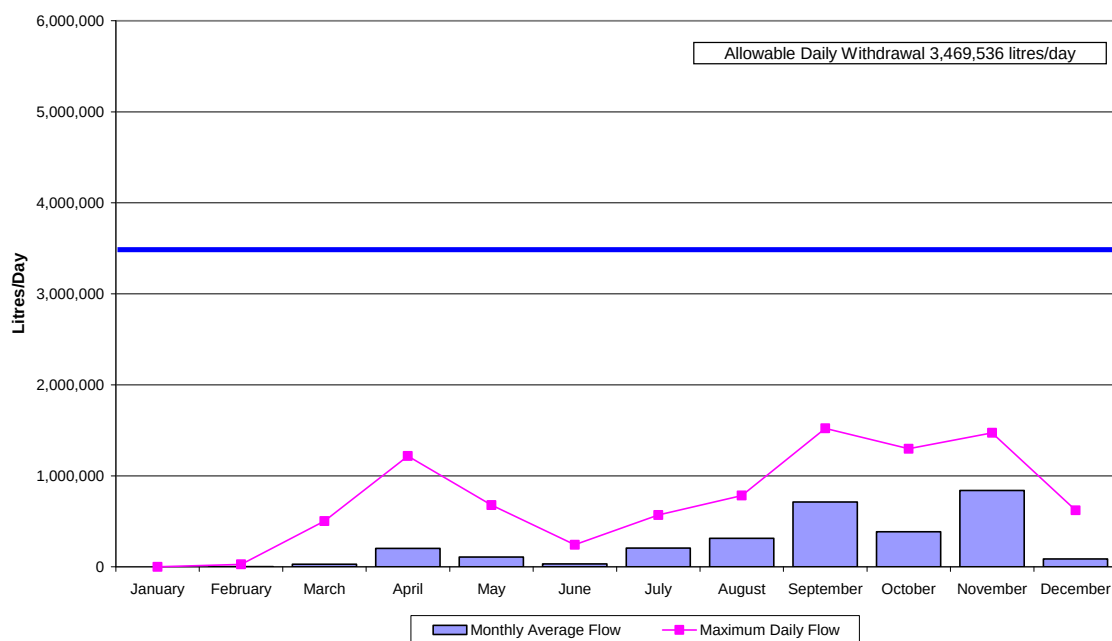


Figure 9 shows a reduced monthly average flow or no monthly average flow recorded for the month of March and October 2009. This reduction in flow occurred due to scheduled maintenance conducted on the well to improve the overall operation of the water system.

**Figure 10: Aurora Well No. 6
Monthly Average Flow and Maximum Daily Flow 2009**



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Figure 10 shows a reduced monthly average flow or no monthly average flow recorded for the month of January, February, March, June and December 2009. This reduction in flow occurred due to scheduled maintenance conducted on the well to improve the overall operation of the water system.

Actual volumes of water taken from the Aurora production wells during January 1 – December 31, 2009 did not exceed the permitted daily withdrawal.

The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2009 are presented in Figures 11 through 16.

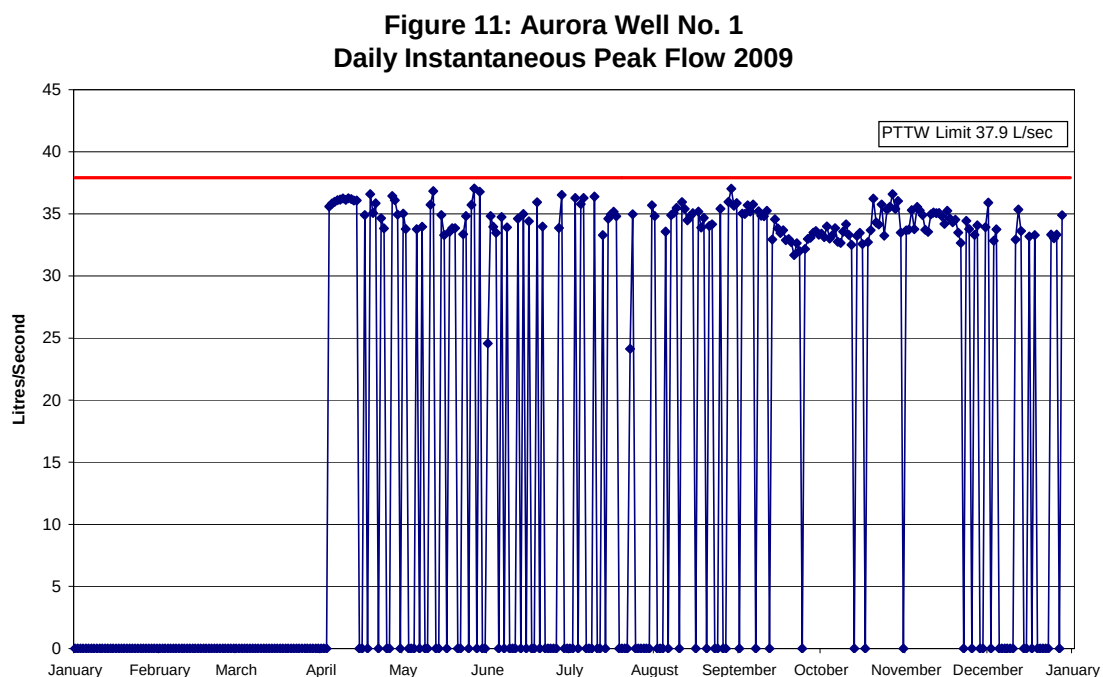


Figure 12: Aurora Well No. 2
Daily Instantaneous Peak Flow 2009

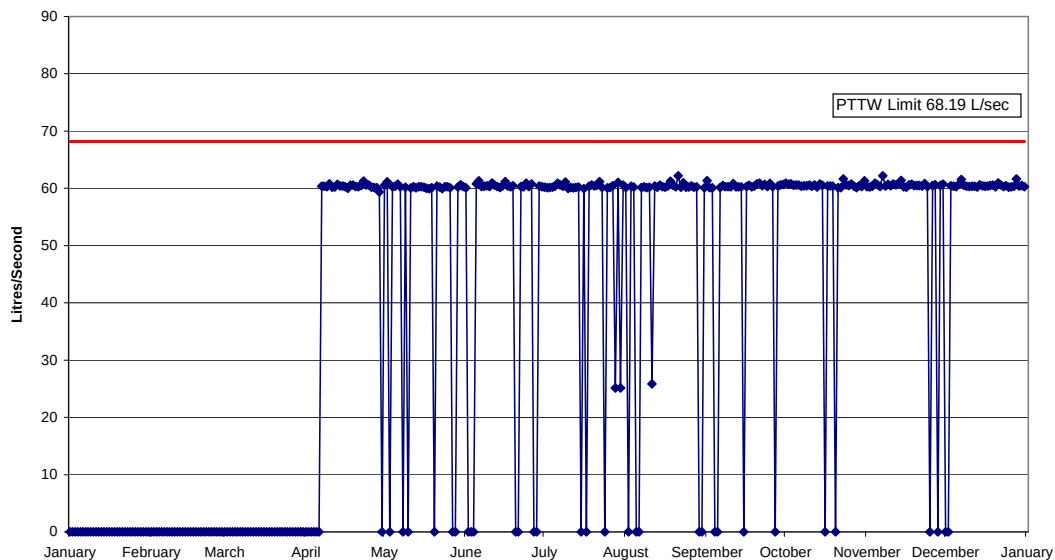


Figure 13: Aurora Well No. 3
Daily Instantaneous Peak Flow 2009

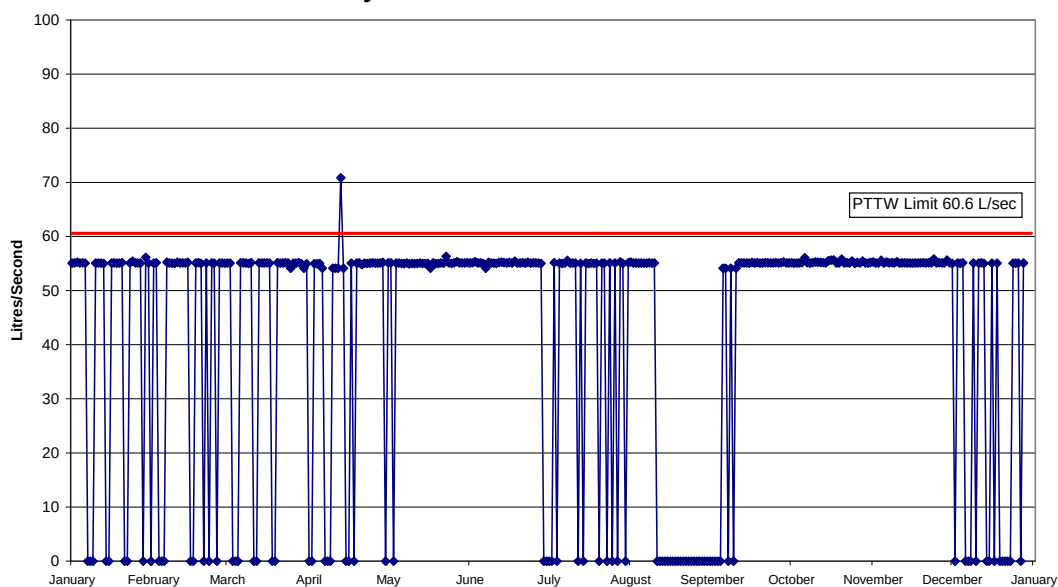
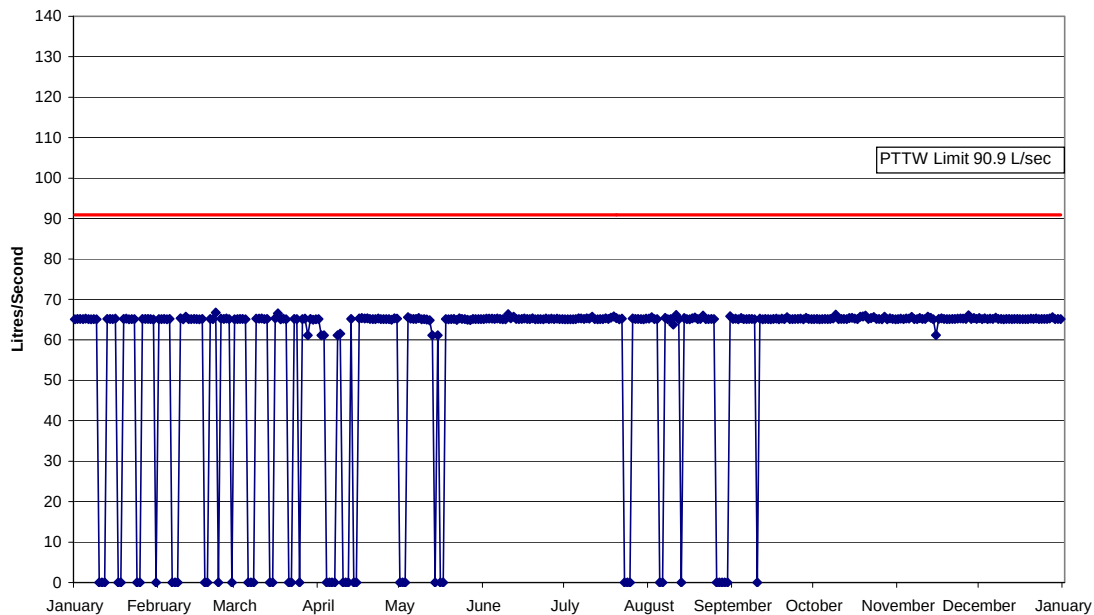


Figure 13 shows instantaneous peak flow rates recorded over the PTTW limit. All peaks were less than 5 minutes in duration and represent less than 1% of the total volume of water taken for the day. These peaks are associated with the initial start up of a pump by removing back pressure, a change in the distribution system pressure or maintenance on

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the distribution system. Scheduled operational maintenance contributed to the reduction of the peak flow rates, improving the overall operations of the water system.

**Figure 14: Aurora Well No. 4
Daily Instantaneous Peak Flow 2009**



**Figure 15: Aurora Well No. 5
Daily Instantaneous Peak Flow 2009**

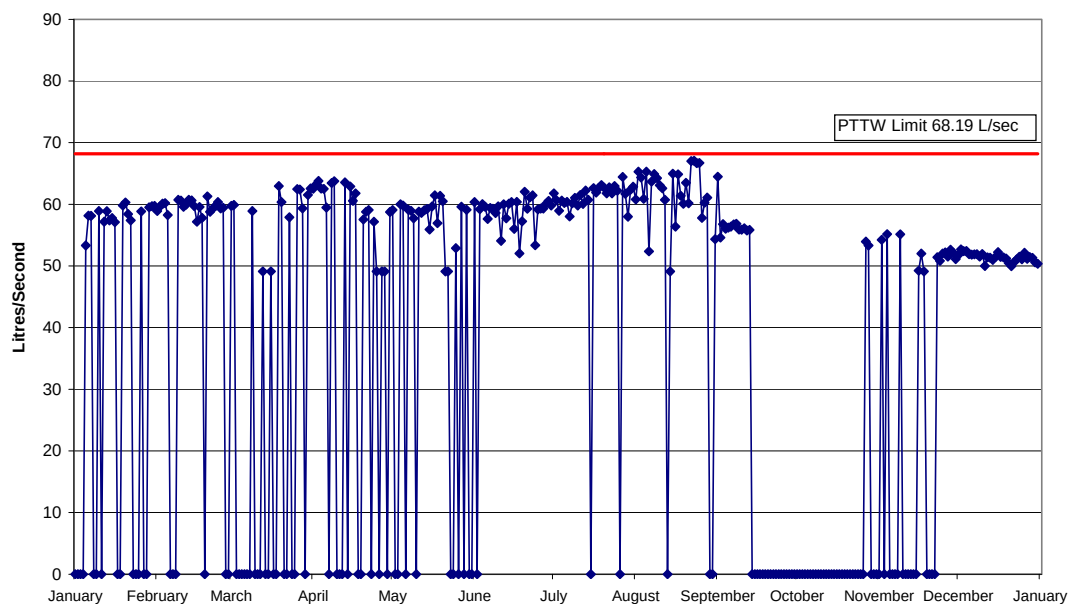
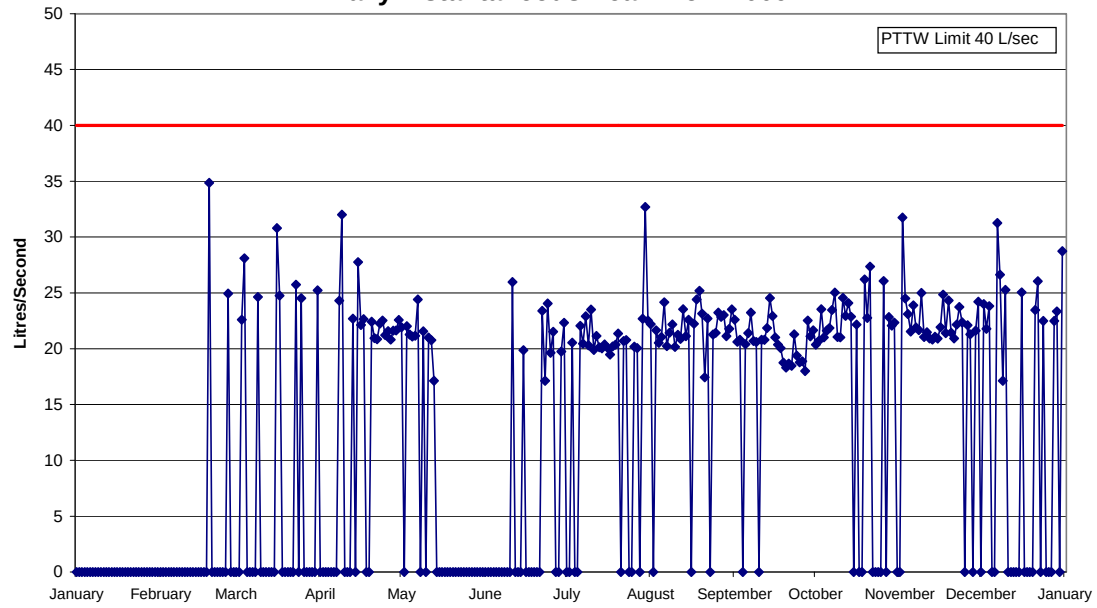


Figure 16: Aurora Well No. 6
Daily Instantaneous Peak Flow 2009



2.3 Ballantrae

York Region operates a water supply system to service Ballantrae/Musselman's Lake, Town of Whitchurch-Stouffville, under authority of a C of A issued by the MOE. The C of A includes reference to the PTTW also issued by the MOE. Details of the C of A and PTTW and other relevant classification information for the Ballantrae/Musselman's Lake Water Supply are presented in Table 7. All system upgrades required by the C of A have not yet been completed.

TABLE 7: Ballantrae/Musselman's Lake Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number:	1957-7TCL4E
Issue Date:	July 16, 2009
Previous Certificate of Approval Number:	1844-7B5U9A
Issue Date:	February 28, 2008
Current Permit to Take Water Number:	4545-7EMR9W
Issue Date:	March 16, 2008
Expiry Date:	March 31, 2013
MOE Waterworks Number:	220008658
System Classification:	Water Distribution & Supply II (WDSII)

2.3.1 Water Taking

The PTTW for the Ballantrae/Musselman's Lake Water Supply System allows York Region to withdraw up to 2,647,920 litres per day from production wells 1 or 2 with a maximum combined total permitted withdrawal of 4,580,000 litres per day.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored and alarmed on a continuous basis to ensure that regulated flows are not exceeded.

2.3.2 Measuring Points

Flow meters are in place downstream of each production well and record the instantaneous flow rate and total volume of water that has passed through the meter. The flow meters are calibrated annually to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored using two methods which provides York Region with the opportunity to compare and contrast data, in the event one method should fail.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

2.3.3. Water Withdrawal

The total volume of water taken from the production wells of the Ballantrae/Musselman's Lake Water Supply System for the reporting period of January 1 – December 31, 2009 was 377,981,857 litres or 1,035,566 litres per day on average.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are presented in Table 8.

TABLE 8: Permitted and Actual Maximum Daily Withdrawal from the Ballantrae/Musselman's Lake Production Wells for January 1 – December 31, 2009

Location	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Withdrawal During Peak Day
Well 1	2,647,920	2,159,875 – May 20, 2009	81.6%
Well 2	2,647,920	1,965,813 – December 16, 2009	74.2%
Well 1 & 2	4,580,000	2,159,875 – May 20, 2009	47.1%

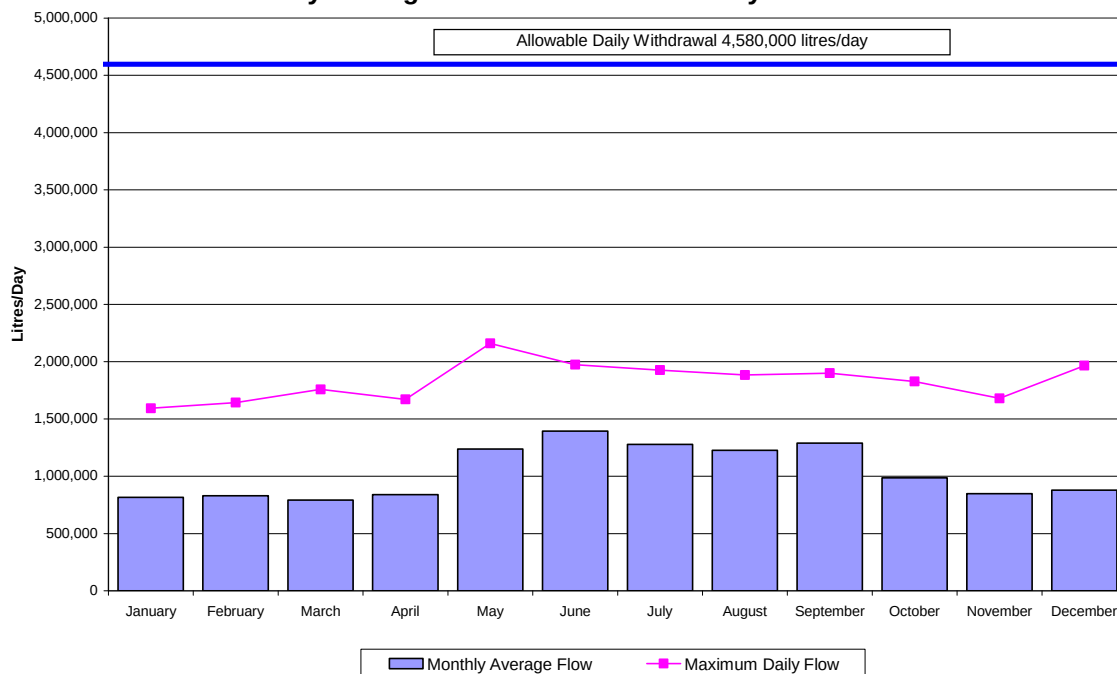
The maximum permitted water withdrawal and the actual annual withdrawal recorded daily water taking are presented in Table 9.

TABLE 9: Permitted and Actual Maximum Withdrawal from the Ballantrae/Musselman's Lake Production Wells for January 1 – December 31, 2009

Annual Permitted Withdrawal (Litres)	Actual Annual Withdrawal (Litres)	Percentage of Permitted Annual Withdrawal
1,598,875,200	377,981,857	23.6%

The average monthly flow rates, maximum daily flow, and the permitted daily withdrawal are presented in Figure 17.

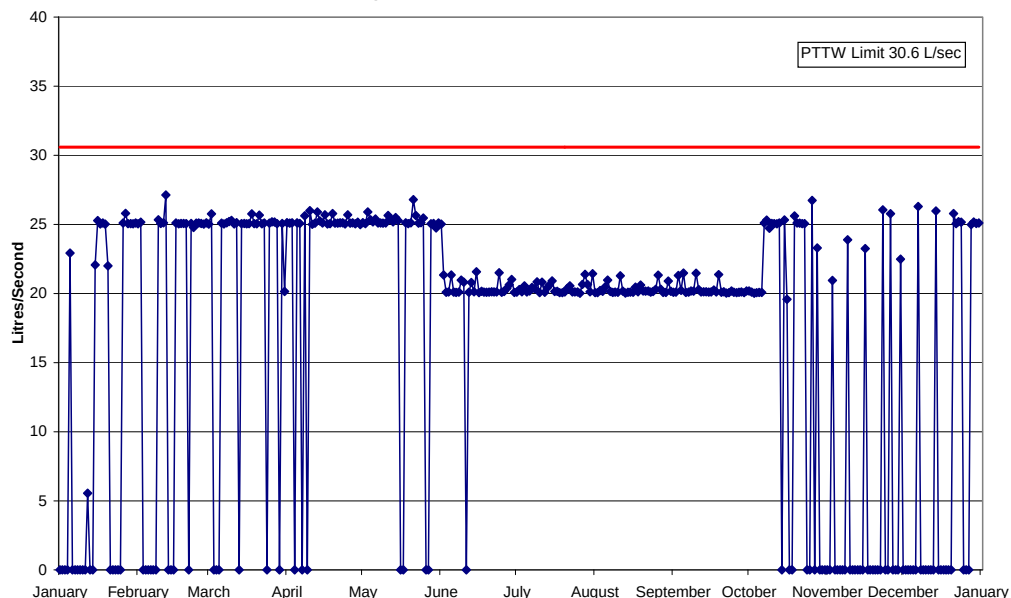
**Figure 17: Ballantrae Wells No. 1 & 2
Monthly Average Flow and Maximum Daily Flow 2009**



The actual volume of water taken from the Ballantrae/Musselman's production wells during January 1 – December 31, 2009 did not exceed the permitted daily withdrawal volume.

The '*Daily Instantaneous Peak Flow (litres)*' for January 1- December 31, 2009 are presented in Figures 18 and 19.

**Figure 18: Ballantrae Well No. 1
Daily Instantaneous Peak Flow 2009**



**Figure 19: Ballantrae Well No. 2
Daily Instantaneous Peak Flow 2009**

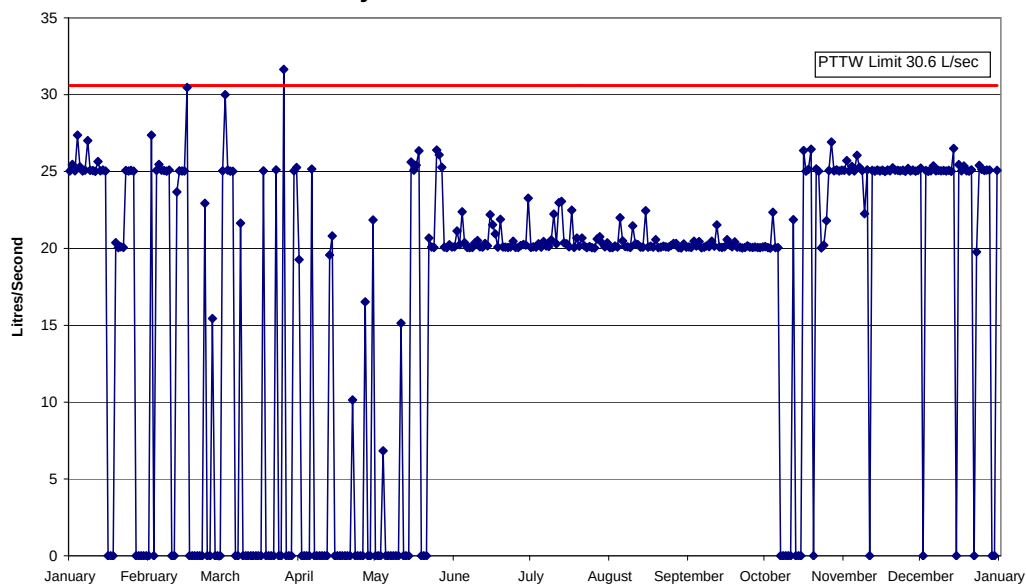


Figure 19 shows instantaneous peak flow rates recorded over the PTTW limit. All peaks were less than 5 minutes in duration and represent less than 1% of the total volume of water taken for the day. These peaks are associated with the initial start up of a pump by removing back pressure, a change in the distribution system pressure or maintenance on the distribution system. Scheduled operational maintenance contributed to the reduction of the peak flow rates, improving the overall operations of the water system.

2.4 Georgina

The Regional Municipality of York (York Region) operates a water supply system to service the communities of Sutton and Keswick, Town of Georgina, under authority of a C of A issued by the MOE. The C of A includes reference to the valid PTTW also issued by the MOE. Details of the C of A and PTTW and other relevant classification information for the Georgina Water Supply are presented in Table 10. All system upgrades required by the C of A have been completed.

TABLE 10: Georgina Water Supply – Summary of Approvals and Permit

Current Certificates of Approval Number: Issue Date:	5640-667R8N December 8, 2004
Current Permit to Take Water Number: Issue Date: Expiry Date:	03-P-3008 February 12, 2003 February 28, 2013
MOE Waterworks Number:	260026156
System Classification:	Water Treatment II (WT II)

2.4.1 Water Taking

The PTTW for the Georgina Water Supply System allows York Region to withdraw up to 49,999,680 litres per day from the water treatment plant.

York Region monitors the water taking through flow meters. Flow is monitored and alarmed on a continuous basis to ensure that the regulated flows are not exceeded.

2.4.2 Measuring Points

Flow meters are in place downstream of the water treatment plant and record the instantaneous flow rate and total volume of water that has passed through the meter. The flow meters are calibrated annually to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored using two methods which provides York Region with the opportunity to compare and contrast data, in the event one method should fail.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the water treatment plant. Average flow rates are also calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.
2. The flow meters have recently been connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

2.4.3 Water Withdrawal

The total volume of water from the Georgina Water Treatment Plant during January 1 – December 31, 2009 was 2,315,391,357 litres or 6,343,537 litres per day on average.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are presented in Table 11.

TABLE 11: Permitted and Actual Maximum Daily Withdrawal from the Georgina Water Treatment Plant for January 1 – December 31, 2009

Location	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Withdrawal During Peak Day
Water Treatment Plant	49,999,680	10,616,844 – June 24, 2009	21.2%

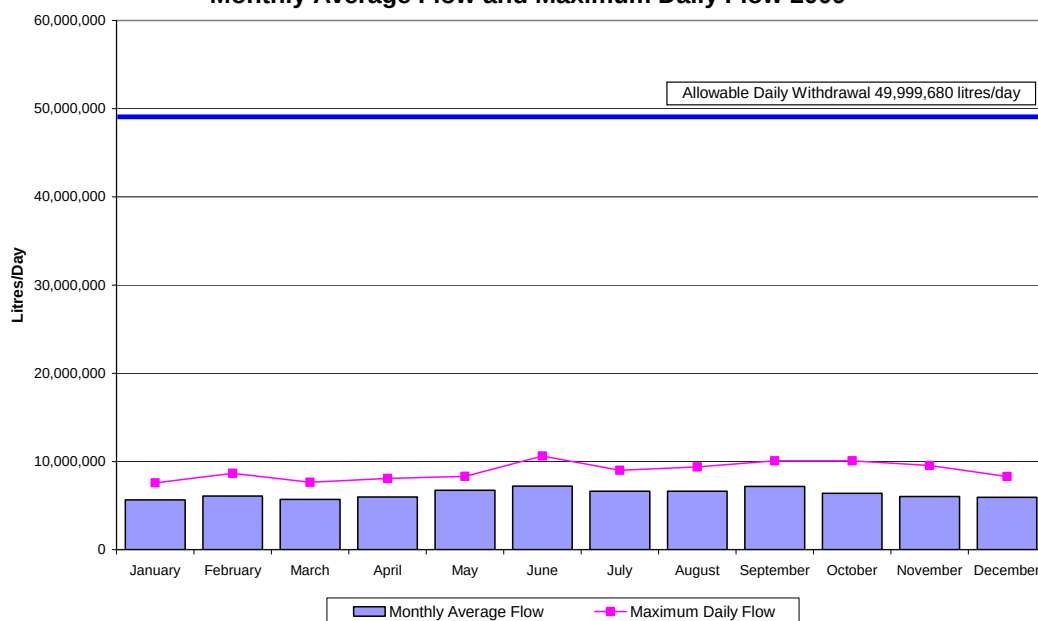
The maximum permitted water withdrawal and the actual annual withdrawal recorded daily water taking are presented in Table 12.

TABLE 12: Permitted and Actual Maximum Withdrawal from the Georgina Water Treatment Plant for January 1 – December 31, 2009

Annual Permitted Withdrawal (Litres)	Actual Annual Withdrawal (Litres)	Percentage of Permitted Annual Withdrawal
18,249,883,200	2,315,391,357	12.7%

The monthly average flows, the maximum daily withdrawals, and the permitted daily withdrawal for the reporting period of January 1 – December 31, 2009 are shown in Figure 20.

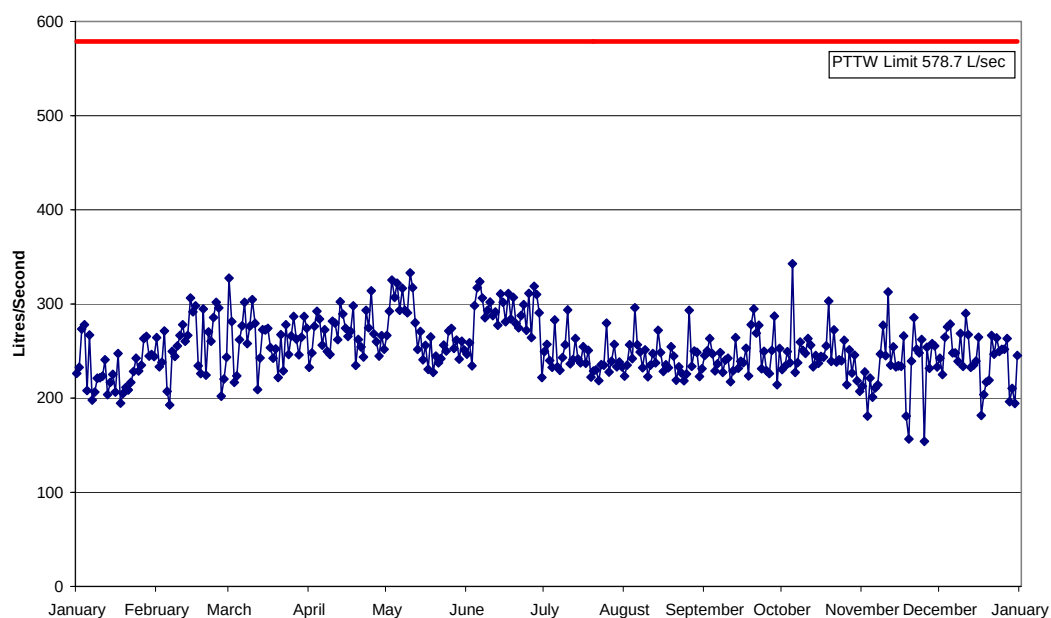
**Figure 20: Georgina Water Treatment Plant
Monthly Average Flow and Maximum Daily Flow 2009**



The withdrawal rates from the Georgina Water Treatment Plant did not exceed the permitted limits for January 1 – December 31, 2009.

The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2009 is presented in Figure 21.

**Figure 21: Georgina Water Treatment Plant
Daily Instantaneous Peak Flow 2009**



2.5 Keswick

The Regional Municipality of York (York Region) operates a water supply system to service Keswick, Town of Georgina, under authority of a C of A issued by the MOE. The C of A includes reference to the valid PTTW also issued by the MOE. Details of the C of A and PTTW and other relevant classification information for the Keswick Water Supply are presented in Table 13. All system upgrades required by the C of A have been completed.

TABLE 13: Keswick Water Supply – Summary of Approvals and Permit

Current Certificates of Approval Number:	4219-7LKLRA
Issue Date:	January 8, 2009
Previous Certificate of Approval Number:	3684-6GNPMV
Issue Date:	October 19, 2005
Current Permit to Take Water Number:	1268-636QNK
Issue Date:	July 30, 2004
Expiry Date:	June 30, 2014
MOE Waterworks Number:	210003280
System Classification:	Water Treatment III (WT III)

2.5.1 Water Taking

The PTTW for the Keswick Water Supply System allows York Region to withdraw up to 16,200,000 litres per day from the water treatment plant.

York Region monitors the water taking through flow meters. Flow is monitored and alarmed on a continuous basis to ensure that the regulated flows are not exceeded.

2.5.2 Measuring Points

Flow meters are in place downstream of the water treatment plant and record the instantaneous flow rate and total volume of water that has passed through the meter. The flow meters are calibrated annually to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored using two methods which provides York Region with the opportunity to compare and contrast data, in the event one method should fail.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the water treatment plant. Average flow rates are also calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.
2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored

electronically. This data was used to generate the instantaneous peak flow rate figures.

2.5.3 Water Withdrawal

The total volume of water from the Keswick Water Treatment Plant during January 1 – December 31, 2009 was 1,176,594,628 litres or 3,223,547 litres per day on average.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are presented in Table 14.

TABLE 14: Permitted and Actual Maximum Daily Withdrawal from the Keswick Water Treatment Plant for January 1 – December 31, 2009

Location	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Withdrawal During Peak Day
Water Treatment Plant	16,200,000	6,939,875 – August 5, 2009	42.8%

The maximum permitted water withdrawal and the actual annual withdrawal recorded daily water taking are presented in Table 15.

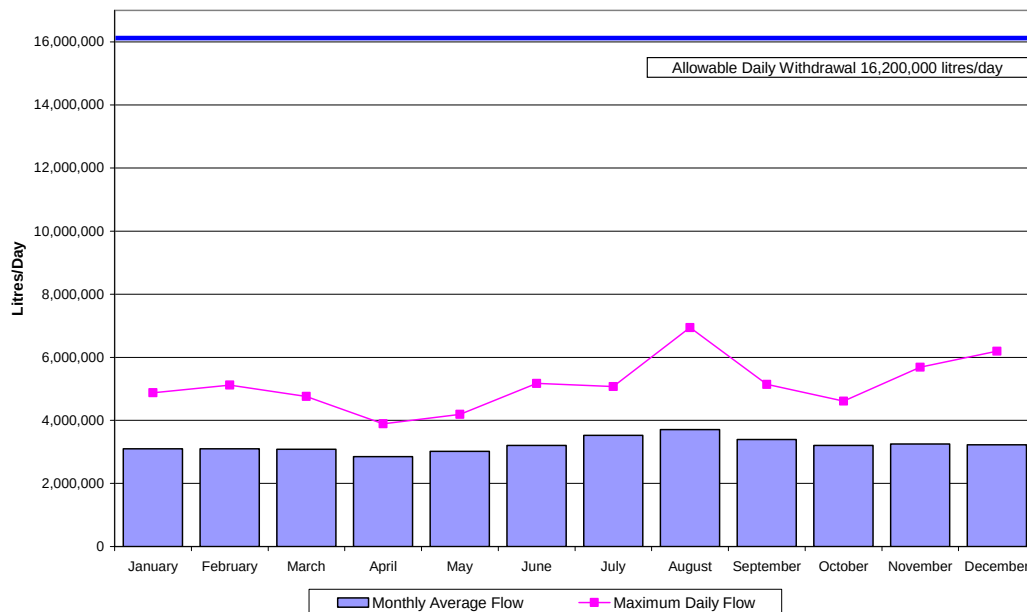
TABLE 15: Permitted and Actual Maximum Withdrawal from the Keswick Water Treatment Plant for January 1 – December 31, 2009

Annual Permitted Withdrawal	Actual Annual Withdrawal	Percentage of Permitted Annual Withdrawal
5,913,000,000	1,176,594,628	19.9%

The monthly average flows, the maximum daily withdrawals, and the permitted daily withdrawal for the reporting period of January 1 – December 31, 2009 are shown in Figure 22.

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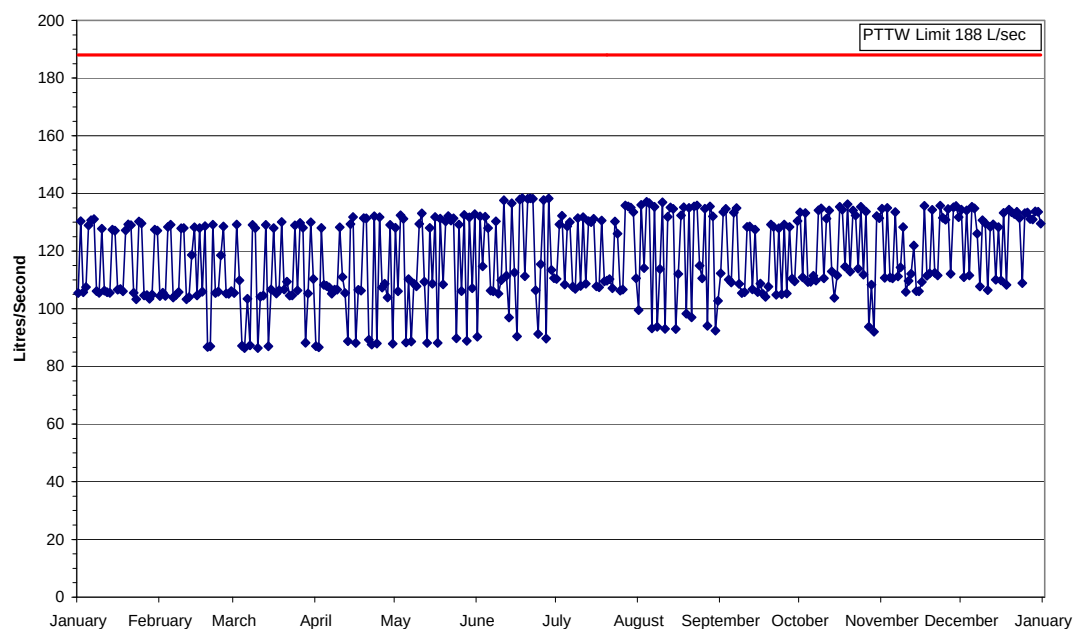
**Figure 22: Keswick Water Treatment Plant
Monthly Average Flow and Maximum Daily Flow 2009**



Withdrawal rates from the Keswick Water Treatment Plant did not exceed the permitted limits during January 1 – December 31, 2009.

The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2009 is presented in Figure 23.

**Figure 23: Keswick Water Treatment Plant
Daily Instantaneous Peak Flow 2009**



2.6 King City

York Region operates a water supply system to service King City, Township of King, under authority of a C of A issued by the MOE. The C of A includes reference to the PTTW also issued by the MOE. Details of the C of A and PTTW and other relevant classification information for the King City Water Supply are presented in Table 16. All system upgrades required by the C of A have been completed.

TABLE 16: King City Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number: Issue Date:	2110-69HKRC April 1, 2005
Current Permit to Take Water Number: Issue Date: Expiry Date:	8634-67HR9L December 20, 2004 January 31, 2015
MOE Waterworks Number:	220002299
System Classification:	Water Distribution & Supply II (WDS II)

2.6.1 Water Taking

The PTTW for the King City Water Supply System allows York Region to withdraw up to 1,963,915 litres per day from production well 3 and 2,618,554 litres per day from production well 4.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored and alarmed on a continuous basis to ensure that the regulated flows are not exceeded.

2.6.2 Measuring Points

Flow meters are in place downstream of each production well and record the instantaneous flow rate and total volume of water that has passed through the meter. The flow meters are calibrated annually to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored using two methods which provides York Region with the opportunity to compare and contrast data, in the event one method should fail.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This ‘manual’ data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.
2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored

electronically. This data was used to generate the instantaneous peak flow rate figures.

2.6.3 Water Withdrawal

The total volume of water taken from the production wells of the King City Water Supply System for January 1 – December 31, 2009 was 423,886,984 litres or 1,161,334 litres per day.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are presented in Table 17.

TABLE 17: Permitted and Actual Maximum Daily Withdrawal from the King City Production Wells for January 1 – December 31, 2009

Location	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Withdrawal During Peak Day
Well 3	1,963,915	1,730,031 – September 13, 2009	88.1%
Well 4	2,618,554	2,265,875 – May 21, 2009	86.5%

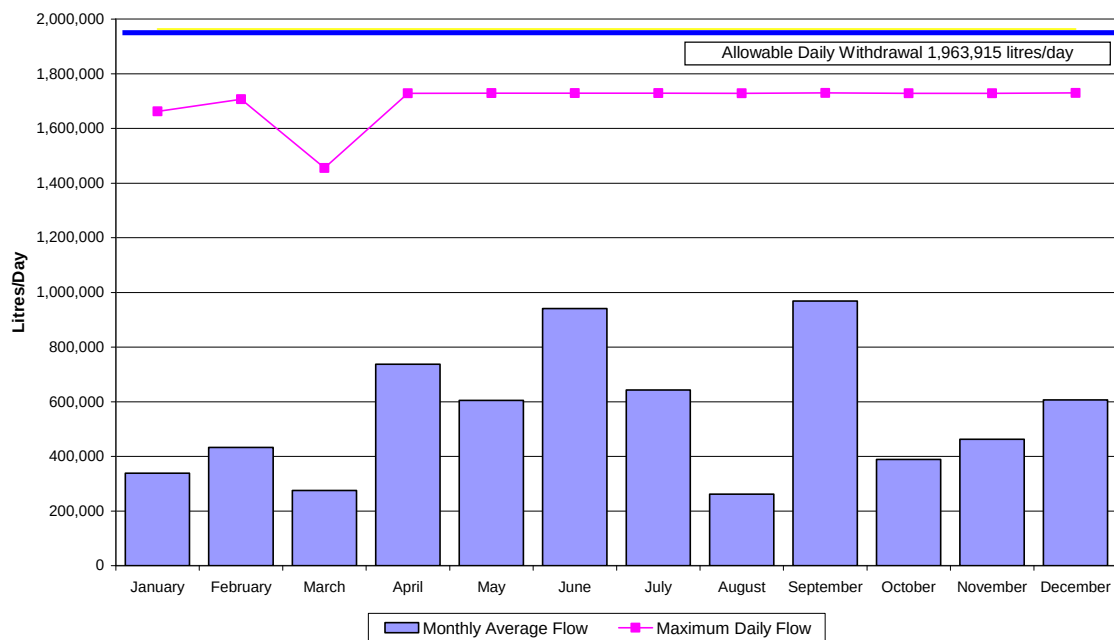
The maximum permitted water withdrawal and the actual annual withdrawal recorded daily water taking are presented in Table 18.

TABLE 18: Permitted and Actual Maximum Withdrawal from the King City Production Wells for January 1 – December 31, 2009

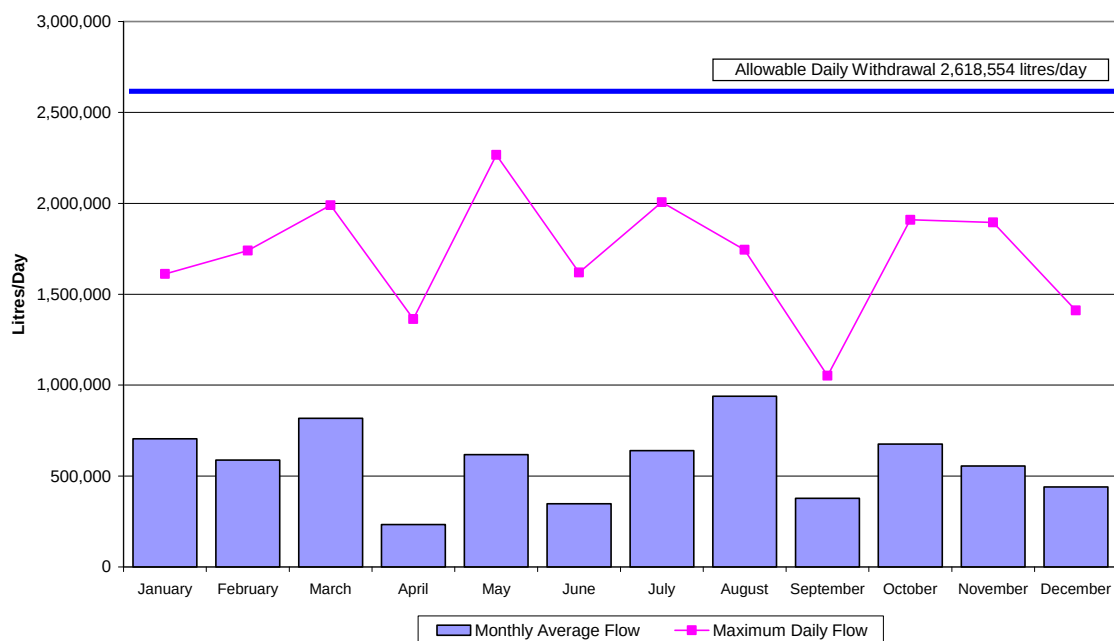
Annual Permitted Withdrawal (Litres)	Actual Annual Withdrawal (Litres)	Percentage of Permitted Annual Withdrawal
1,672,601,550	423,886,984	25.3%

The monthly average flow rates, maximum daily flow, and the permitted daily withdrawal are presented in Figures 24 and 25.

**Figure 24: King City Well No. 3
Monthly Average Flow and Maximum Daily Flow 2009**



**Figure 25: King City Well No. 4
Monthly Average Flow and Maximum Daily Flow 2009**

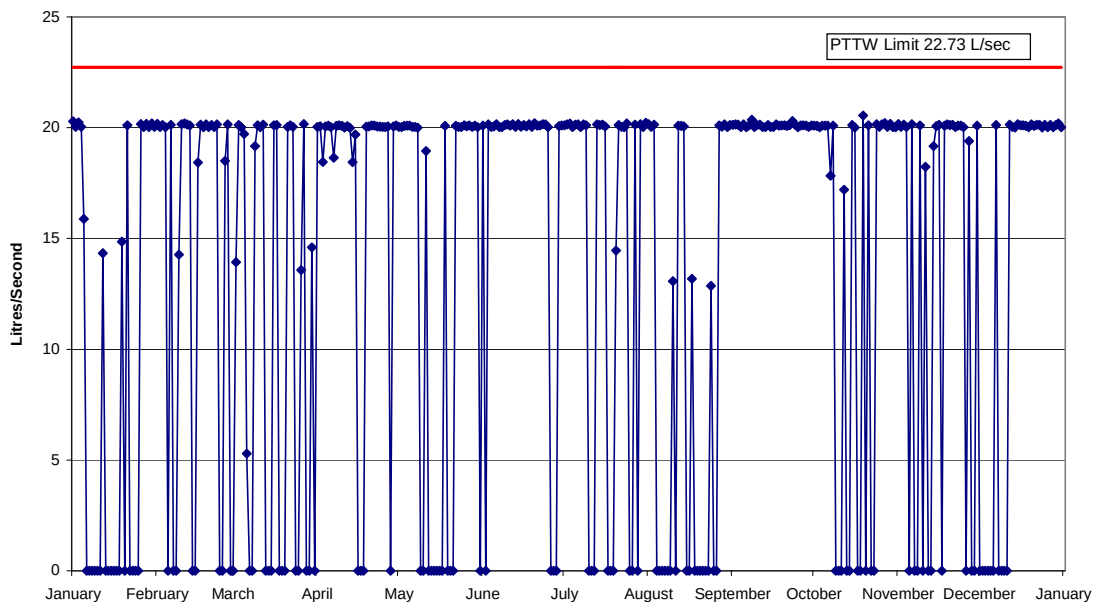


Withdrawal rates from the King City production wells did not exceed the permitted limits during January 1 – December 31, 2009.

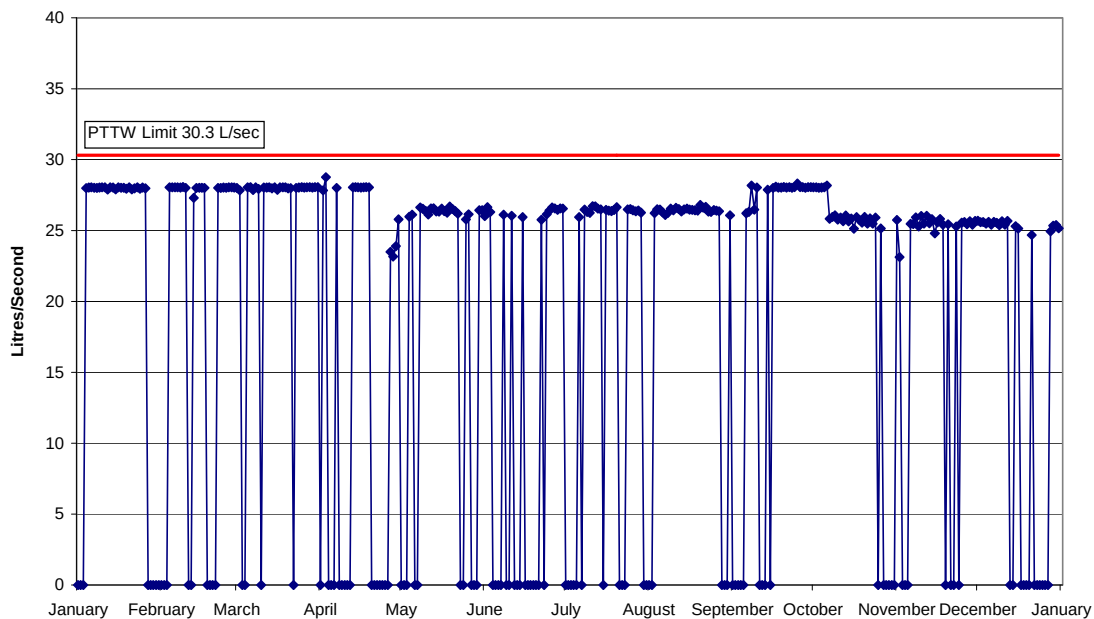
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The 'Daily Instantaneous Peak Flow (litres)' for January 1- December 31, 2009 are presented in Figures 26 and 27.

**Figure 26: King City Well No. 3
Daily Instantaneous Peak Flow 2009**



**Figure 27: King City Well No. 4
Daily Instantaneous Peak Flow 2009**



2.7 Kleinburg

York Region operates a water supply system to service Kleinburg, City of Vaughan, under authority of a C of A issued by the MOE. The C of A includes reference to the valid PTTW also issued by the MOE. Details of the C of A and PTTW and other relevant classification information for the Kleinburg Water Supply are presented in Table 19. All system upgrades required by the C of A have been completed.

TABLE 19: Kleinburg Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number:	2579-77WJ8G
Issue Date:	November 27, 2007
Current Permit to Take Water Number:	2411-789N8E
Issue Date:	January 22, 2008
Expiry Date:	January 31, 2014
MOE Waterworks Number:	220002360
System Classification:	Water Distribution & Supply II (WDS II)

2.7.1 Water Taking

The PTTW for the Kleinburg Water Supply System allows York Region to withdraw up to 950,400 litres per day from production well 2 over a 24 hour period and 5,237,000 litres per day from production wells 3 and 4 inclusive.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored and alarmed on a continuous basis to ensure that the regulated flows are not exceeded.

2.7.2 Measuring Points

Flow meters are in place downstream of each production well and record the instantaneous flow rate and total volume of water that has passed through the meter. The flow meters are calibrated annually to meet the monitoring conditions of the C of A.

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Flow data is retrieved and stored using two methods which provides York Region with the opportunity to compare and contrast data, in the event one method should fail.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.
2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

2.7.3 Water Withdrawal

The total volume of water taken from the production wells of the Kleinburg Water Supply System for January 1 – December 31, 2009 was 618,108,484 litres or 1,693,448 litres per day.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are presented in Table 20.

TABLE 20: Permitted and Actual Maximum Daily Withdrawal from the Kleinburg Production Wells for January 1 – December 31, 2009

Location	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Daily Withdrawal During Peak Day
Well 2	950,400	211,082 – January 13, 2009	22.2%
*Wells 3/4	5,237,000	3,584,063 – September 7, 2009	68.4%

**Kleinburg well 4 is pumped into well 3 common header, flow is recorded through well 4 metering*

The maximum permitted water withdrawal and the actual annual withdrawal recorded daily water taking are presented in Table 21.

TABLE 21: Permitted and Actual Maximum Withdrawal from the Kleinburg Production Wells for January 1 – December 31, 2009

Annual Permitted Withdrawal (Litres)	Actual Annual Withdrawal (Litres)	Percentage of Permitted Annual Withdrawal
2,258,401,400	618,108,484	27.4%

The monthly average flow rates, maximum daily flow, and permitted daily withdrawal are presented in Figures 28 and 29.

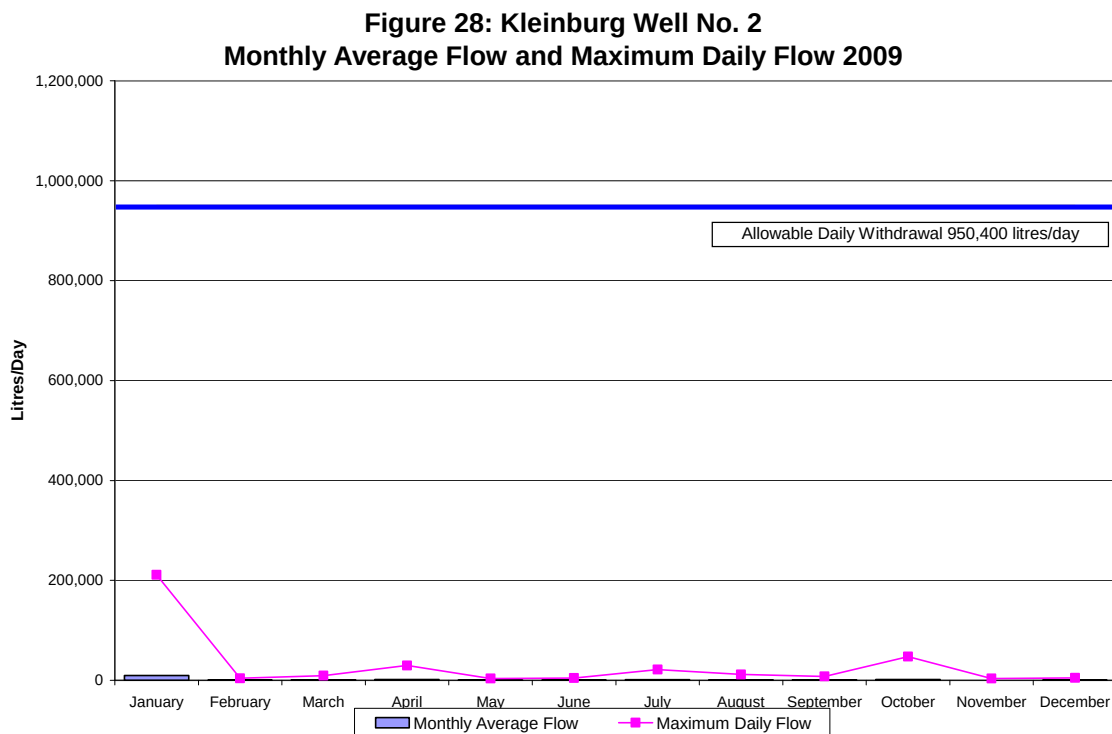
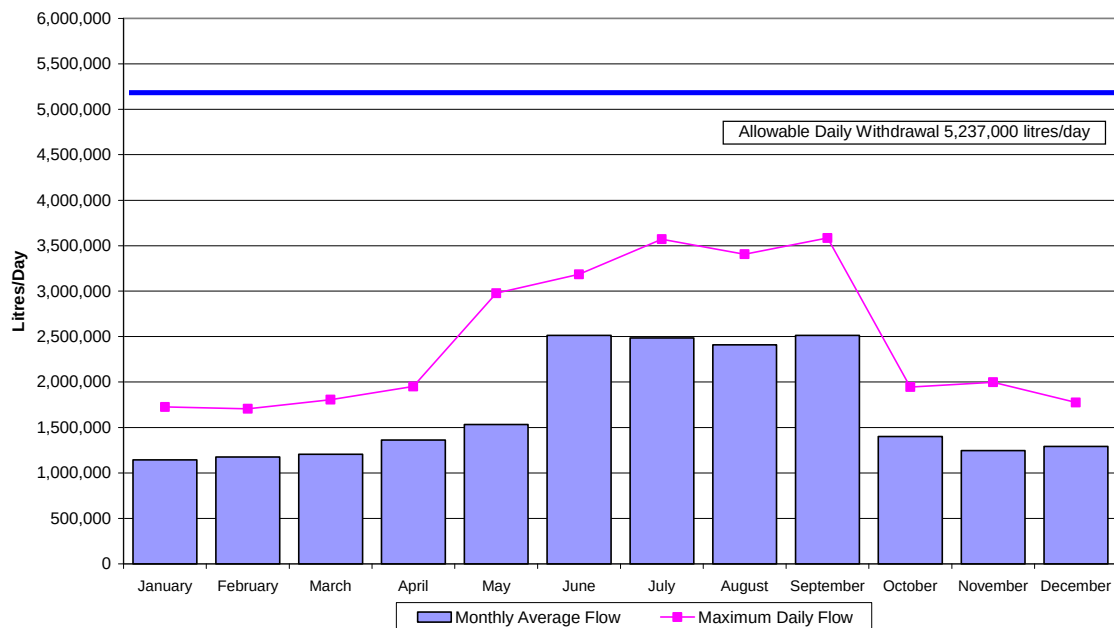


Figure 28: shows a reduced monthly average flow or no monthly average flow recorded throughout the year. This reduction in flow is representative of the reduced demand of water as a result of higher precipitation than previous years. In addition, the Permit has a condition which only allows production well 2 to withdrawal water less than 1,000 litres per day for sampling, maintenance or emergency conditions.

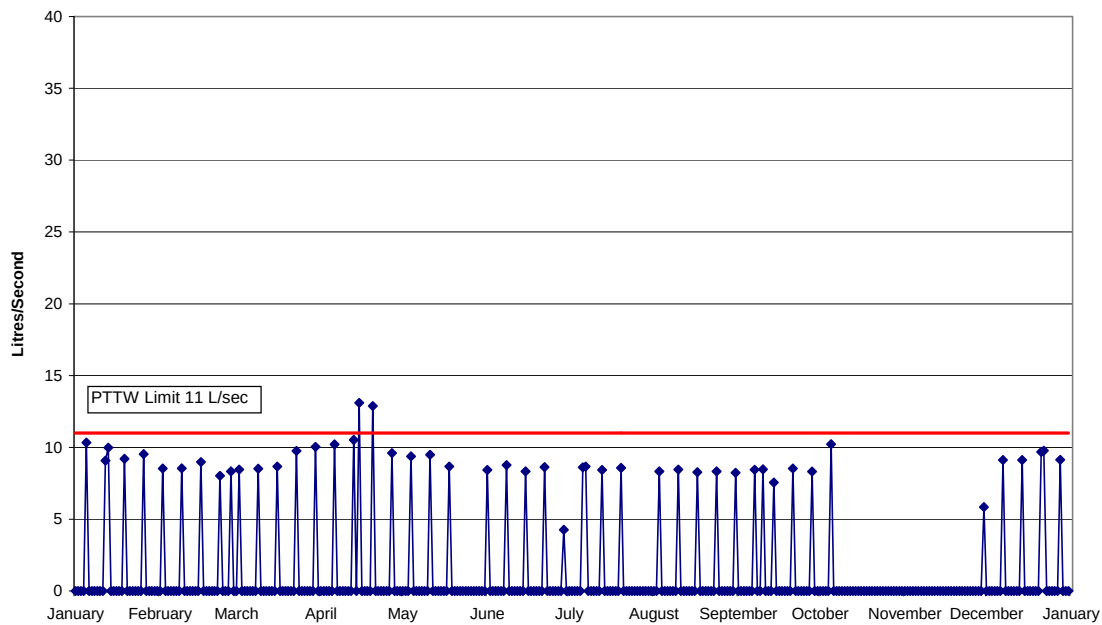
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**Figure 29: Kleinburg Well No. 3 & 4
Monthly Average Flow and Maximum Daily Flow 2009**



The 'Daily Instantaneous Peak Flow (litres)' for January 1- December 31, 2009 are presented in Figures 30 and 31.

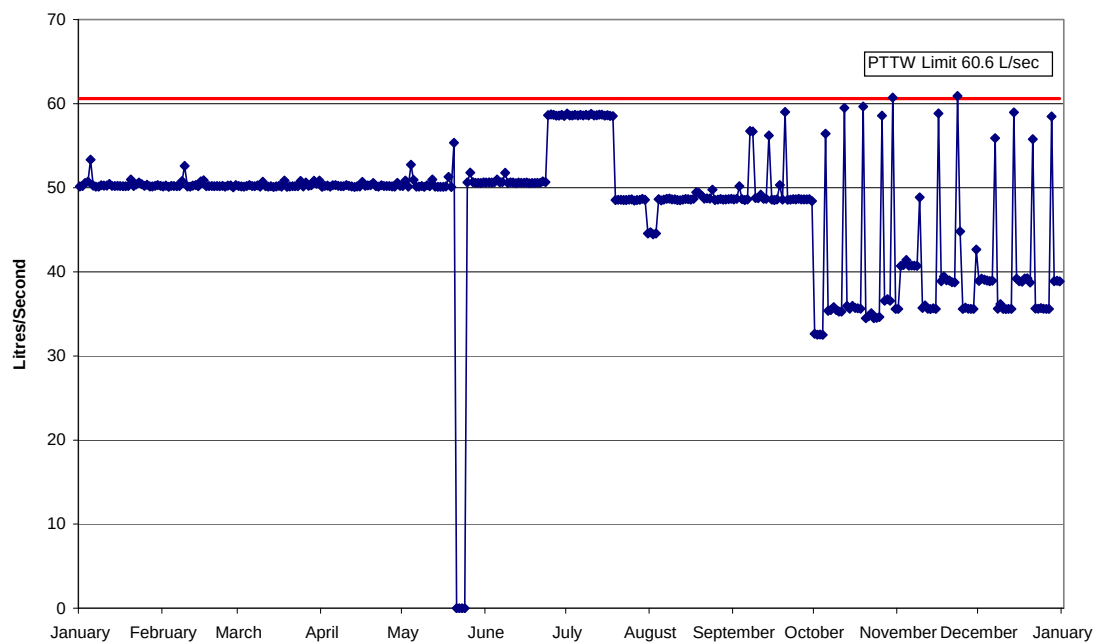
**Figure 30: Kleinburg Well No. 2
Daily Instantaneous Peak Flow 2009**



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Figures 30 and 31 show instantaneous peak flow rates recorded over the PTTW limit. All peaks were less than 5 minutes in duration and represent less than 1% of the total volume of water taken for the day. These peaks are associated with the initial start up of a pump by removing back pressure or a change in the distribution system pressure.

**Figure 31: Kleinburg Well No. 3 & 4
Daily Instantaneous Peak Flow 2009**



2.8 Mount Albert

York Region operates a water supply system to service Mount Albert, Town of East Gwillimbury, under authority of a C of A issued by the MOE. The C of A includes reference to the valid PTTW also issued by the MOE. Details of the C of A and PTTW and other relevant classification information for the Mount Albert Water Supply are presented in Table 22. All system upgrades required by the C of A have been completed.

TABLE 22: Mount Albert Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number:	2899-6H4RRF
Issue Date:	October 24, 2005
Current Permit to Take Water Number:	0050-7FCMMY
Issue Date:	June 9, 2008
Expiry Date:	March 31, 2018
MOE Waterworks Number:	220006543
System Classification:	Water Distribution & Supply II (WDS II)

2.8.1 Water Taking

The PTTW for the Mount Albert Water Supply System allows York Region to withdraw up to 3,273,120 litres per day from production wells 1 or 2 with a maximum combined total permitted withdrawal of 4,990,000 litres per day. Well 3 is currently not in service, pending the design and construction of the treatment infrastructure for the new well anticipated in 2011. Upgrades to the Mount Albert Water Supply System including the development of a new well were subject and completed in an Environmental Assessment for the additional water supply and adequate standby capacity to service growth anticipated in the community. Once in service, well 3 will be included and limited to the maximum combined total permitted withdrawal of 4,990,000 litres per day for all three wells.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored and alarmed on a continuous basis to ensure that the regulated flows are not exceeded.

2.8.2 Measuring Points

Flow meters are in place downstream of each production well and record the instantaneous flow rate and total volume of water that has passed through the meter. The flow meters are calibrated annually to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored using two methods which provides York Region with the opportunity to compare and contrast data, in the event one method should fail.

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1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.
2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

2.8.3 Water Withdrawal

The total volume of water taken from the production wells of the Mount Albert Water Supply System for the reporting period of January 1 – December 31, 2009 was 325,590,465 litres or 892,029 litres per day.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are presented in Table 23.

TABLE 23: Permitted and Actual Maximum Daily Withdrawal from the Mount Albert Production Wells for January 1 – December 31, 2009

Location	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Daily Withdrawal During Peak Day
Well 1	3,273,120	2,223,500 – August 15, 2009	67.9%
Well 2	3,273,120	1,879,563 – March 23, 2009	57.4%
Well 1 & 2*	4,990,000	2,223,500 – August 15, 2009	44.5%
Well 3*	3,273,120	not yet commissioned	-

**Well 3 to be included and limited to the maximum daily combined total permitted withdrawal of 4,990,000 litres per day for all three wells.*

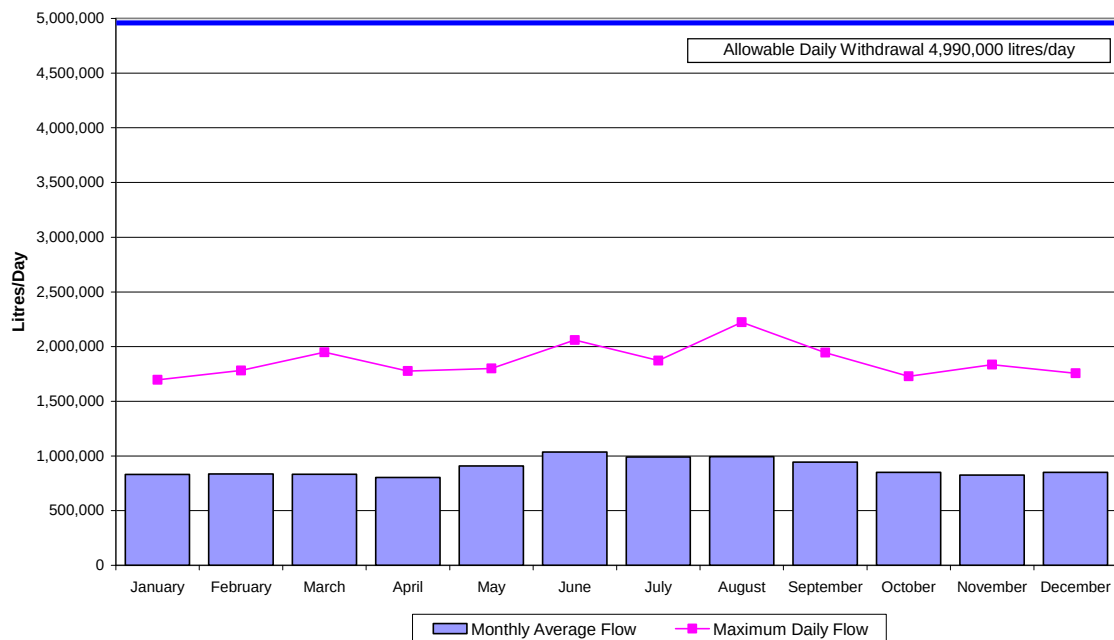
The maximum permitted water withdrawal and the actual annual withdrawal recorded daily water taking are presented in Table 24.

TABLE 24: Permitted and Actual Maximum Withdrawal from the Mount Albert Production Wells for January 1 – December 31, 2009

Annual Permitted Withdrawal (Litres)	Actual Annual Withdrawal (Litres)	Percentage of Permitted Annual Withdrawal
1,826,340,000	325,590,465	17.8%

The monthly average flow rates, maximum daily flow, and permitted daily withdrawal are presented in Figure 32.

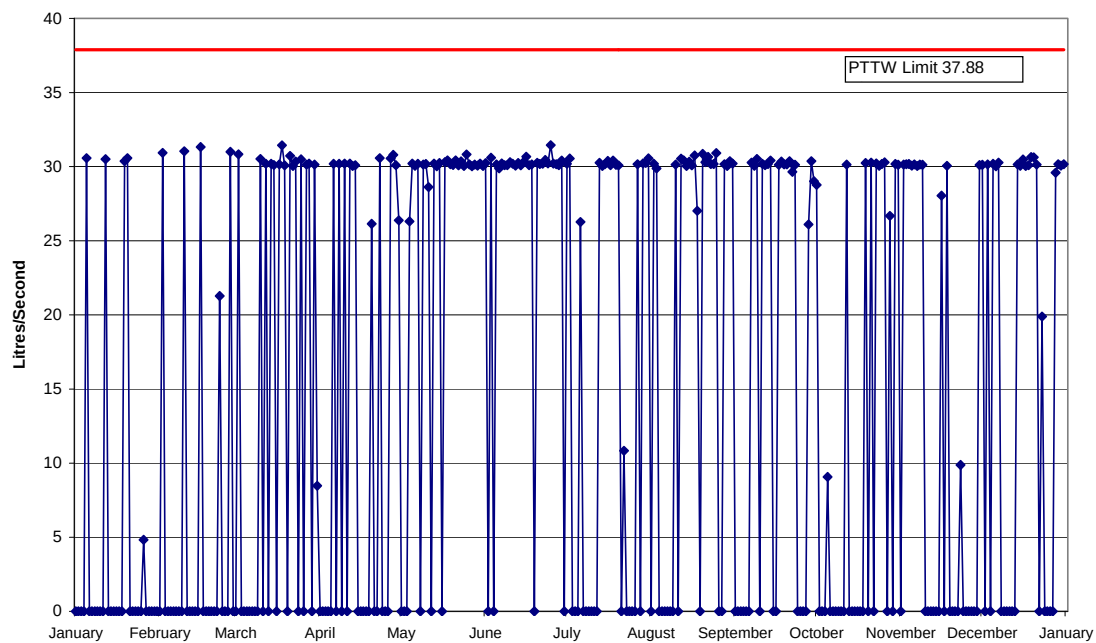
**Figure 32: Mount Albert Well No. 1 & 2
Monthly Average Flow and Maximum Daily Flow 2009**



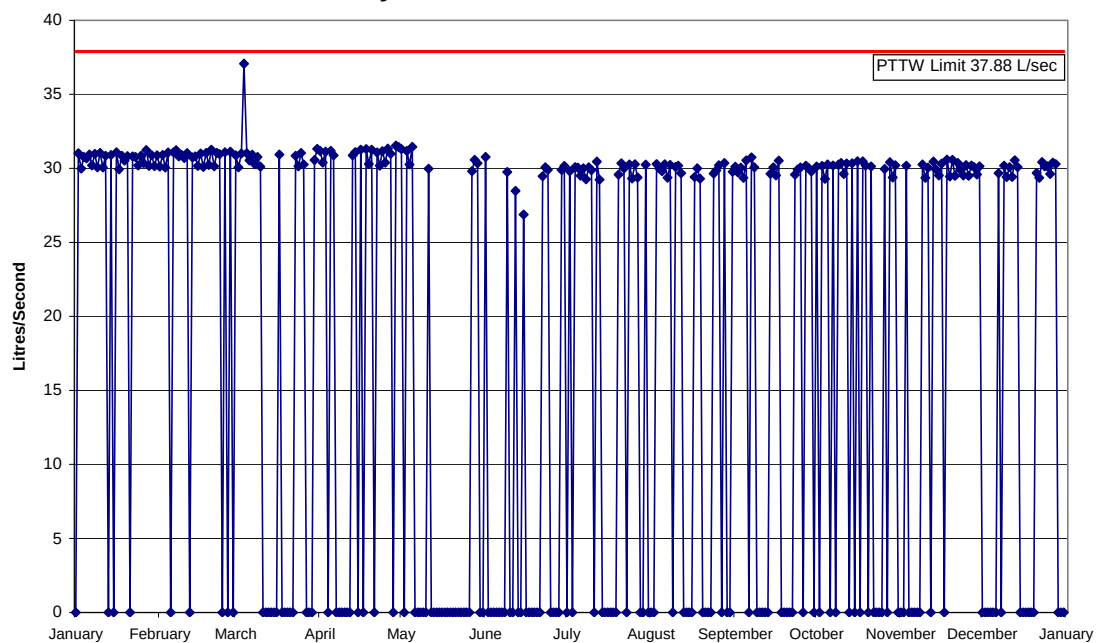
The actual volumes of water taken from the Mount Albert production wells during January 1 – December 31, 2009 did not exceed the permitted daily withdrawal volumes.

The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2009 are presented in Figures 33 and 34.

**Figure 33: Mount Albert Well No. 1
Daily Instantaneous Peak Flow 2009**



**Figure 34: Mount Albert Well No. 2
Daily Instantaneous Peak Flow 2009**



2.9 Newmarket/East Gwillimbury

York Region operates a water supply system to service the communities of Holland Landing, Sharon and Queensville in the Town of East Gwillimbury and the Town of Newmarket under authority of a C of A issued by the MOE. The C of A includes reference to the PTTW also issued by the MOE. Details of the C of A and PTTW and other relevant classification information for the Newmarket/East Gwillimbury Water Supply are presented in Table 25. All system upgrades required by the C of A have been completed.

TABLE 25: Newmarket/East Gwillimbury Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number: Issue Date:	3509-6ALJGJ July 7, 2005
Current Permit to Take Water Number: Issue Date: Expiry Date:	6623-68QQ6L March 10, 2005 March 31, 2015
MOE Waterworks Number: Holland Landing: Newmarket: Queensville:	220004046 220002413 260001955
System Classification:	Water Distribution & Supply III (WDS III)

2.9.1 Water Taking

The PTTW for the Newmarket/East Gwillimbury Water Supply System allows York Region to withdraw up to 56,036,736 litres per day from all production wells.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored and alarmed on a continuous basis to ensure that the regulated flows are not exceeded.

2.9.2 Measuring Points

Flow meters are in place downstream of each production well and record the instantaneous flow rate and total volume of water that has passed through the meter. The flow meters are calibrated annually to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored using two methods which provides York Region with the opportunity to compare and contrast data, in the event one method should fail.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This ‘manual’ data

was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

2.9.3 Water Withdrawal

The total volume of water taken from the production wells of the Newmarket/East Gwillimbury Water Supply System for January 1 – December 31, 2009 was 7,746,546,996 litres or 21,223,416 litres per day on average.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are presented in Table 26.

TABLE 26: Permitted and Actual Maximum Daily Withdrawal from the Newmarket/East Gwillimbury Production Wells for the January 1 – December 31, 2009

Location	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Daily Withdrawal During Peak Day
Holland Landing Well 1	2,291,184	2,065,000 – December 12, 2009	90.1%
Holland Landing Well 2	3,600,432	2,256,656 – September 7, 2009	62.7%
Newmarket Well 1	2,291,184	1,984,625 – November 28, 2009	86.6%
Newmarket Well 2	4,582,512	4,365,750 – January 20, 2009	95.3%
Newmarket Well 13	5,891,760	5,553,250 – January 3, 2009	94.2%
Newmarket Well 14	2,291,184	1,249,627 – March 11, 2009	54.5%
Newmarket Well 15	3,273,120	2,891,188 – February 20, 2009	88.3%
Newmarket Well 16	5,629,824	5,356,500 – November 18, 2009	95.1%
Queensville Well 1	6,546,384	6,059,250 – December 22, 2009	92.5%
Queensville Well 2	6,546,384	5,986,500 – September 17, 2009	91.4%
Queensville Well 3	6,546,384	6,103,250 – December 23, 2009	93.2%
Queensville Well 4	6,546,384	6,058,750 – June 27, 2009	92.5%

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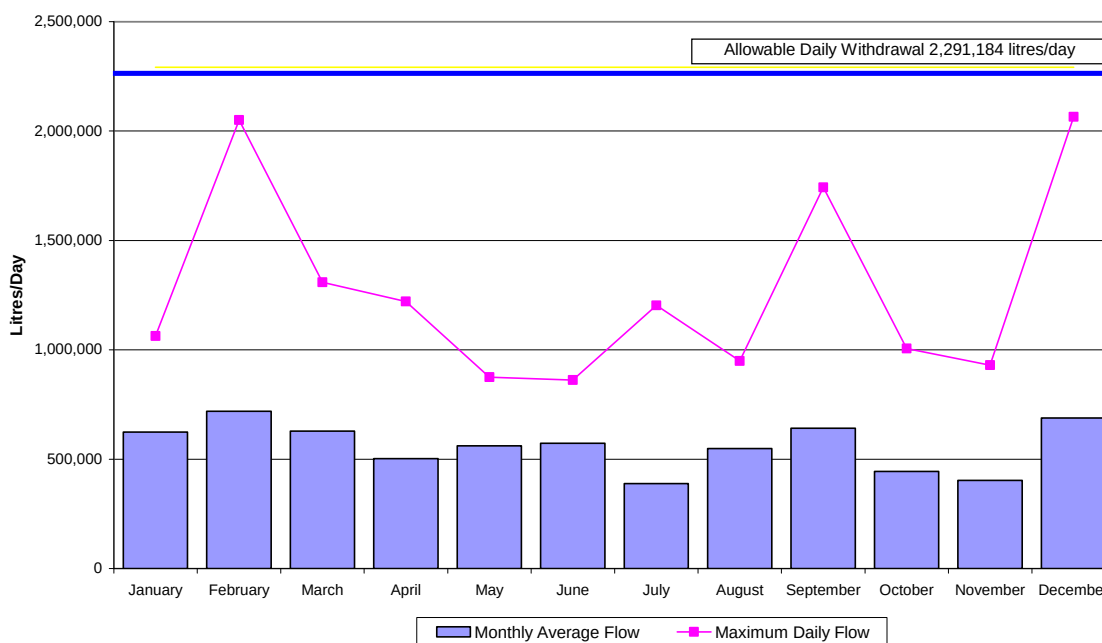
The maximum permitted water withdrawal and the actual annual withdrawal recorded daily water taking are presented in Table 27.

TABLE 27: Permitted and Actual Maximum Withdrawal from the Newmarket//East Gwillimbury/Holland Landing Production Wells for January 1 – December 31, 2009

Annual Permitted Withdrawal (Litres)	Actual Annual Withdrawal (Litres)	Percentage of Permitted Annual Withdrawal
20,453,408,640	7,746,546,996	37.9%

The monthly average flow rates, maximum daily flow, and permitted daily withdrawal are presented in Figures 35 through 46.

**Figure 35: Holland Landing Well No. 1
Monthly Average Flow and Maximum Daily Flow 2009**



**Figure 36: Holland Landing Well No. 2
Monthly Average Flow and Maximum Daily Flow 2009**

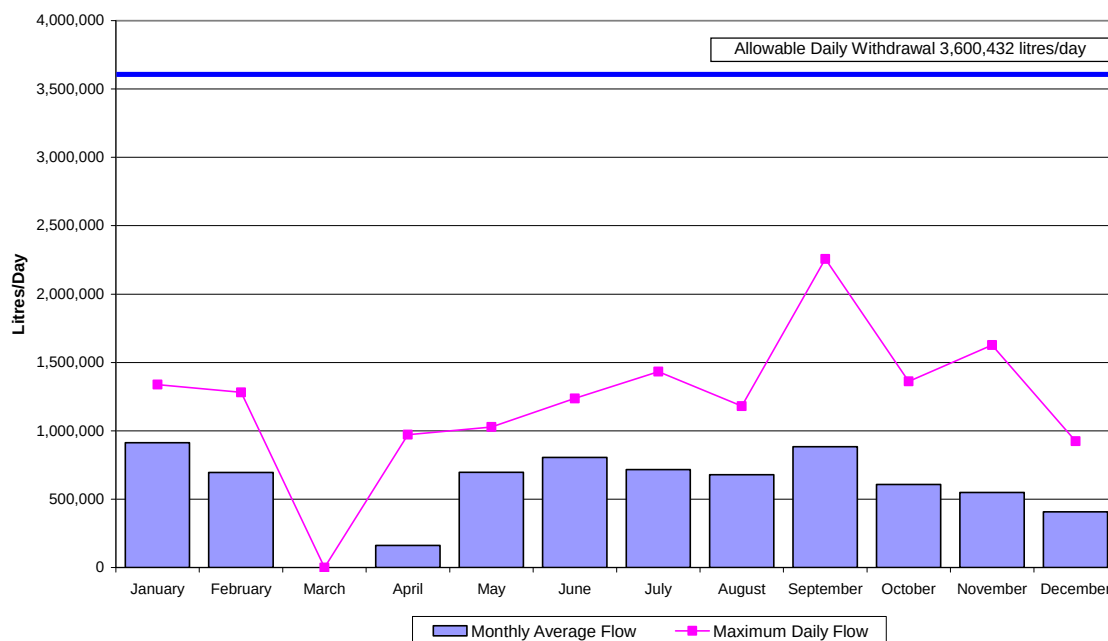
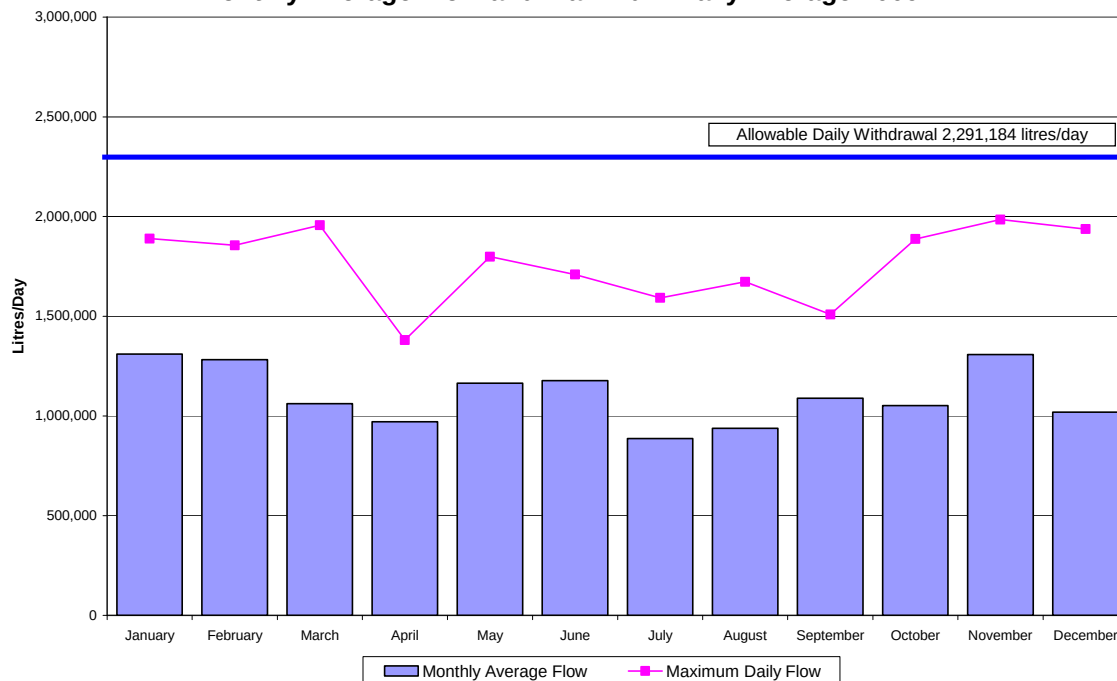


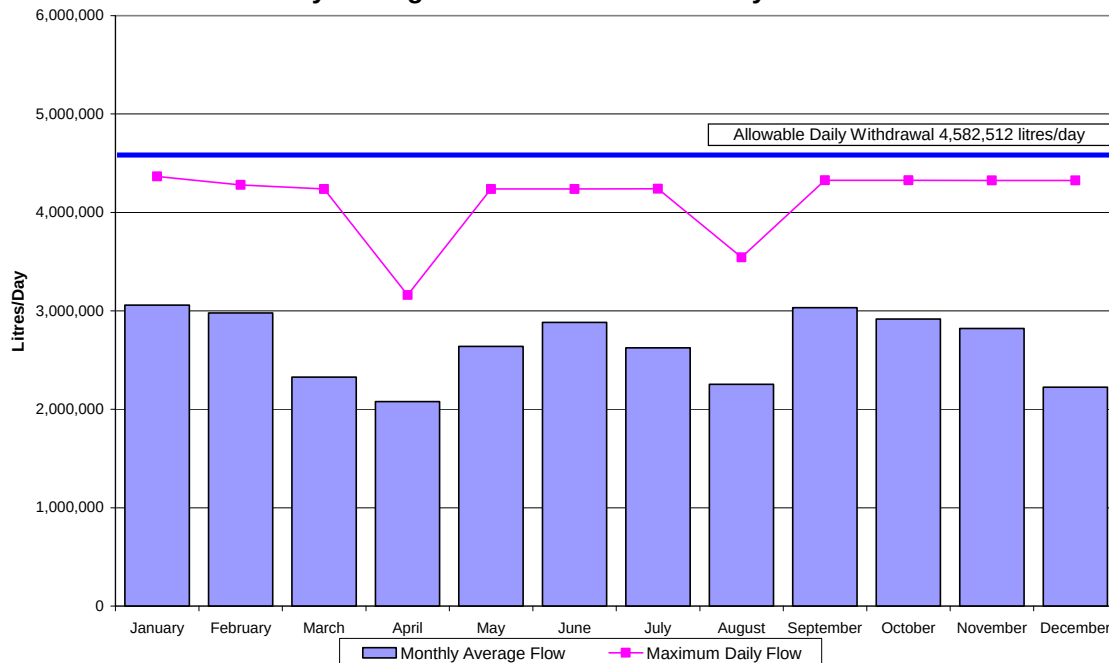
Figure 36 shows a reduced monthly average flow recorded for the month of March and April 2009. This reduction in flow was due to the scheduled and unscheduled maintenance conducted on the well annually to improve the overall operation of the water system.

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**Figure 37: Newmarket Well No. 1
Monthly Average Flow and Maximum Daily Average 2009**



**Figure 38: Newmarket Well No. 2
Monthly Average Flow and Maximum Daily Flow 2009**



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**Figure 39: Newmarket Well No. 13
Monthly Average Flow and Maximum Daily Flow 2009**

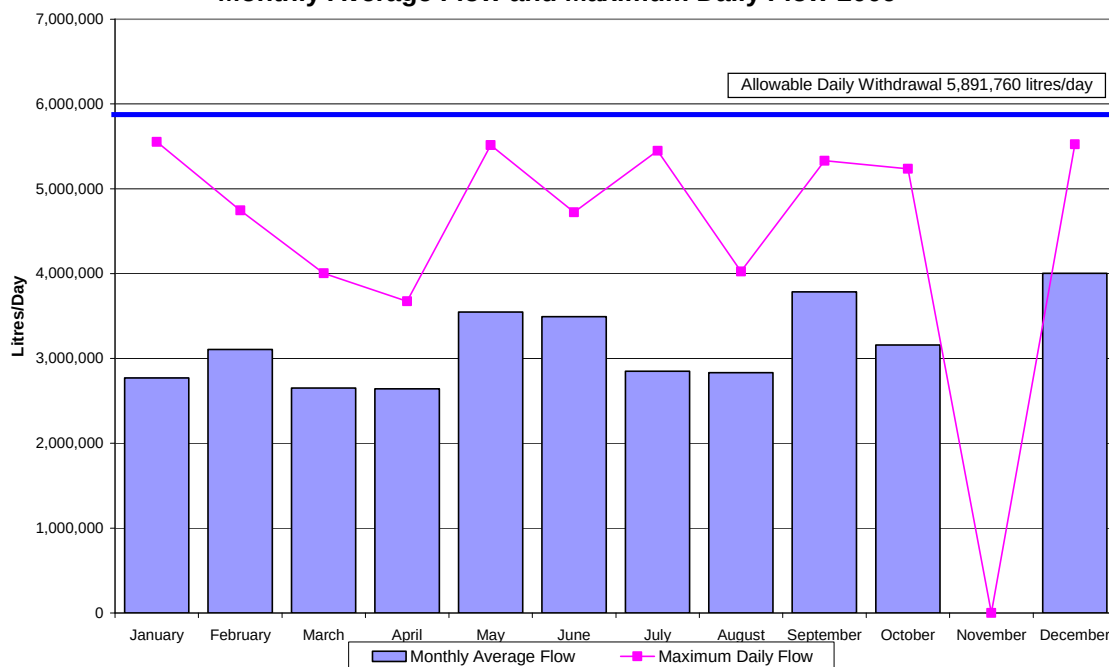
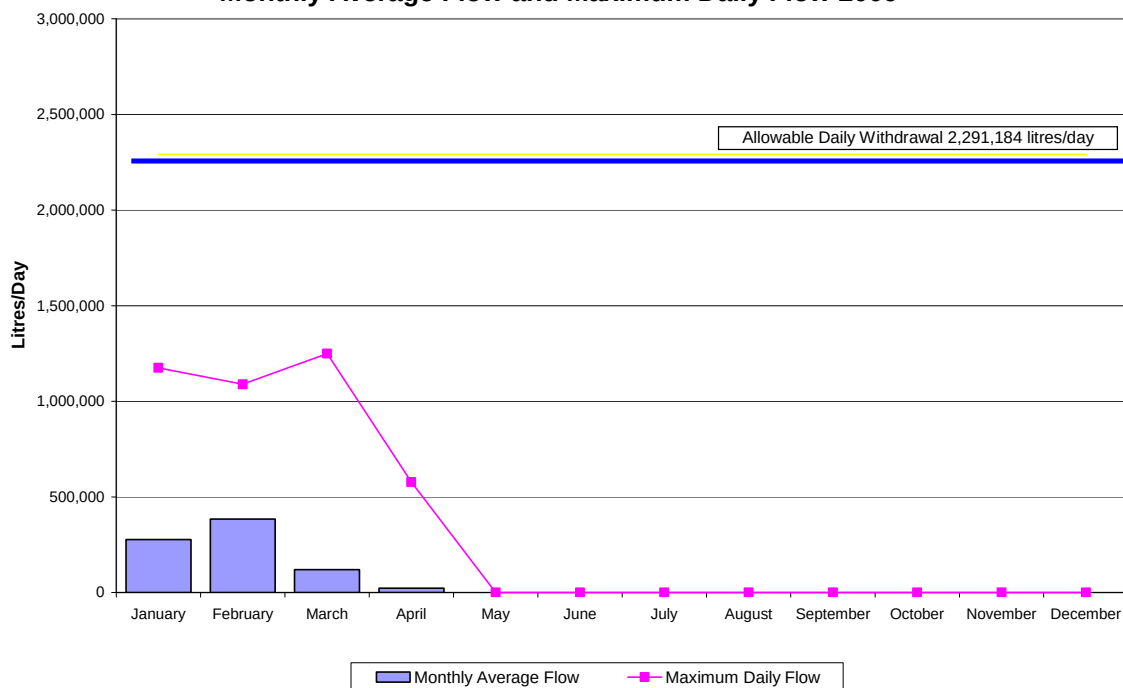


Figure 39 shows a reduced monthly average flow recorded for the month of November 2009. This reduction in flow was due to the scheduled and unscheduled maintenance conducted on the well annually to improve the overall operation of the water system.

**Figure 40: Newmarket Well No. 14
Monthly Average Flow and Maximum Daily Flow 2009**



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Figure 40 shows a reduced monthly average flow recorded for the month of May to December 2009. This reduction in flow is attributed to Newmarket Well No. 14 use as a back-up well servicing the east zone of Newmarket and is only operated during peak demands. As a precautionary measure, Newmarket Well 14 was taken off line due to the discovery of contamination in underlying groundwater present at two nearby properties. Further groundwater investigation is underway by the owner of the closest property to delineate and assess the full extent and concentration of contamination. Measures were taken to protect the community and at no time was the community at risk. The Region and Town of Newmarket are working together with this owner to require that site remediation plans developed and implemented. However, it is anticipated that remediation activities will occur over a long-term period. In the meantime, Newmarket Well 14 will remain off-line. There will be sufficient capacity to serve the community from other municipal wells in the area or from Lake based supplies.

**Figure 41: Newmarket Well No. 15
Monthly Average Flow and Maximum Daily Flow 2009**

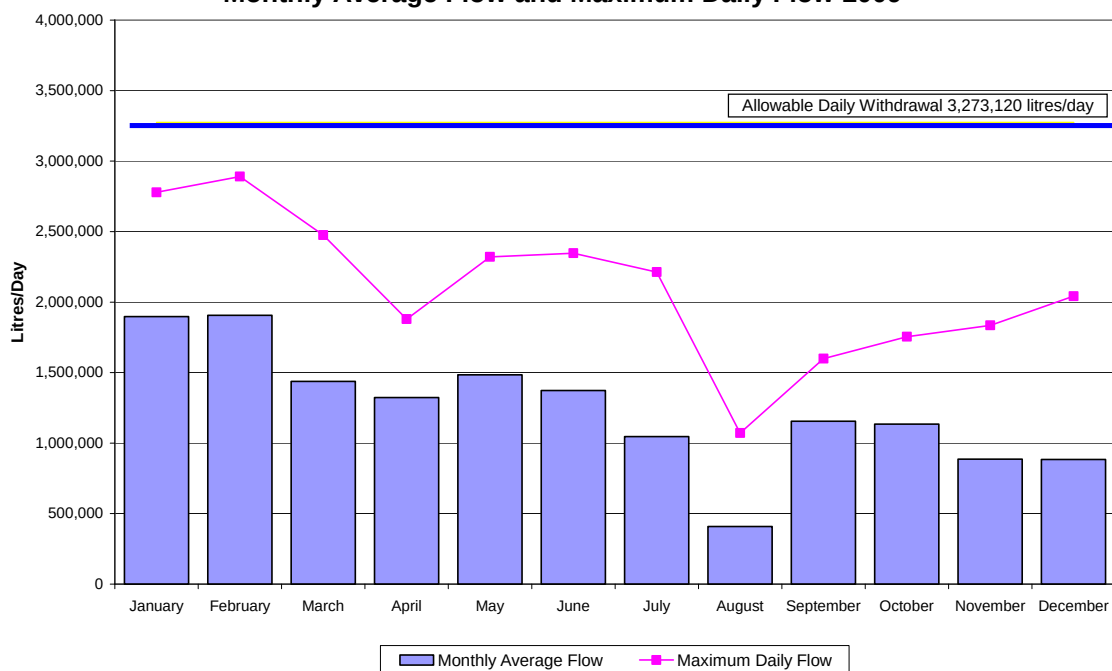


Figure 42: Newmarket Well No. 16
Monthly Average Flow and Maximum Daily Flow 2009

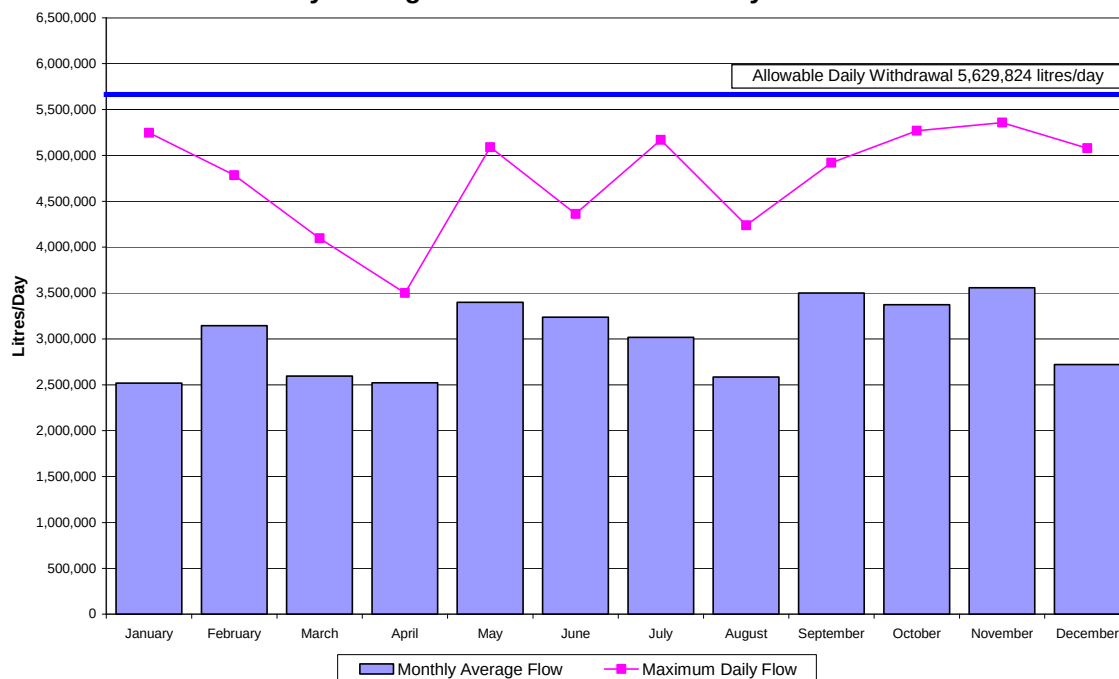


Figure 43: Queensville Well No. 1
Monthly Average Flow and Maximum Daily Flow 2009

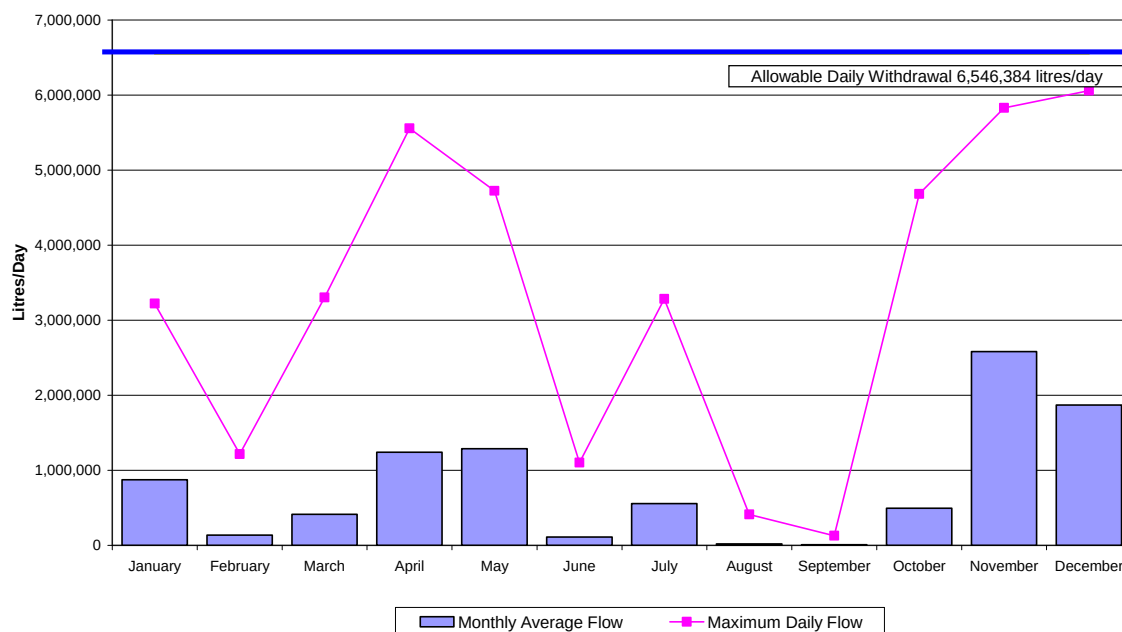
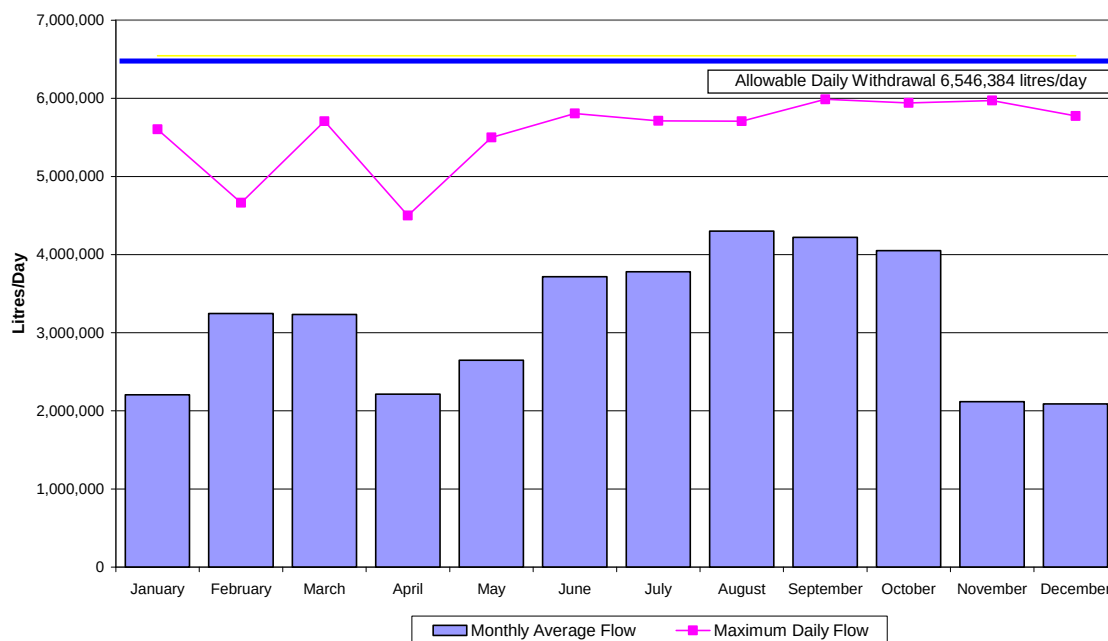


Figure 43 shows a reduced monthly average flow recorded for the months of February, June, August and September 2009. This reduction in flow was due to the scheduled and

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unscheduled maintenance conducted on the well annually to improve the overall operation of the water system.

**Figure 44: Queensville Well No. 2
Monthly Average Flow and Maximum Daily Flow 2009**



**Figure 45: Queensville Well No. 3
Monthly Average Flow and Maximum Daily Flow 2009**

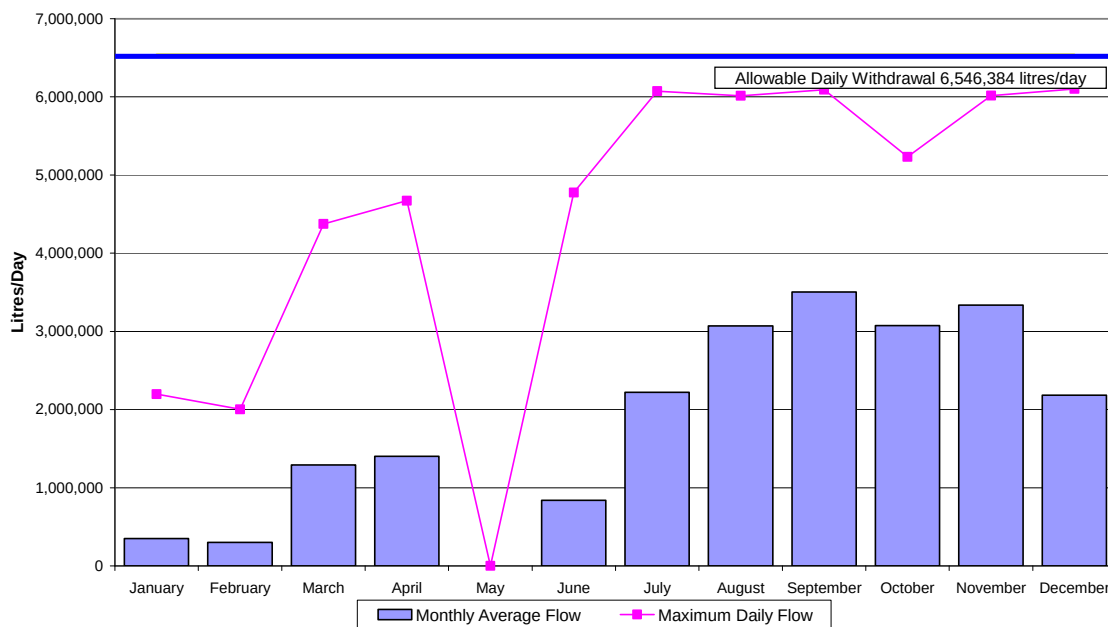
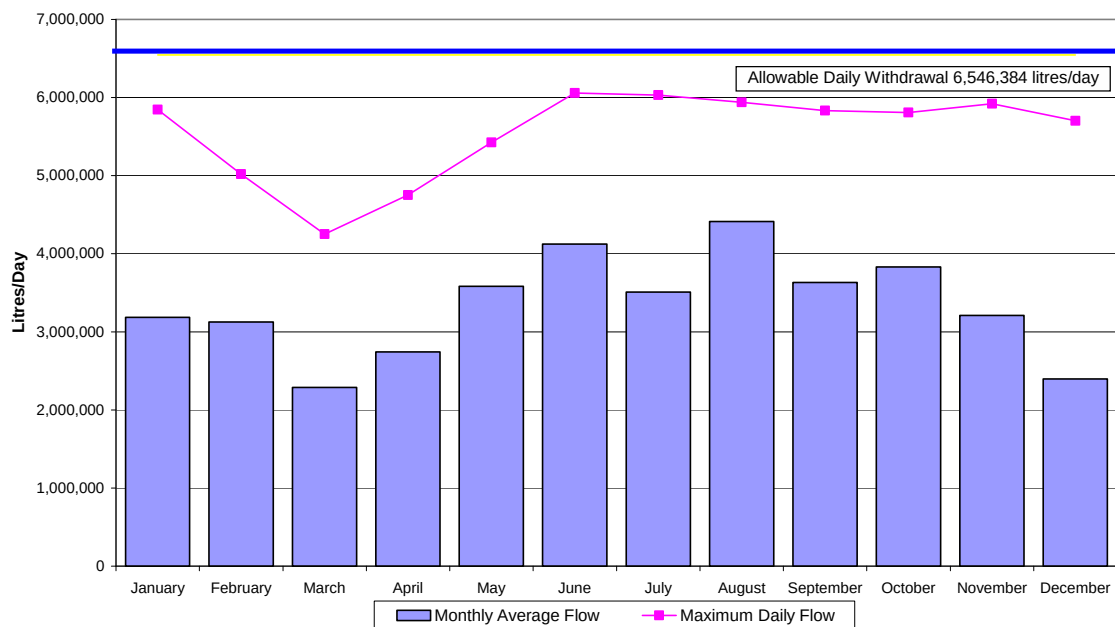


Figure 45 shows a reduced monthly average flow recorded for the months of January, February and May 2009. This reduction in flow was due to the scheduled and unscheduled maintenance conducted on the well annually to improve the overall operation of the water system.

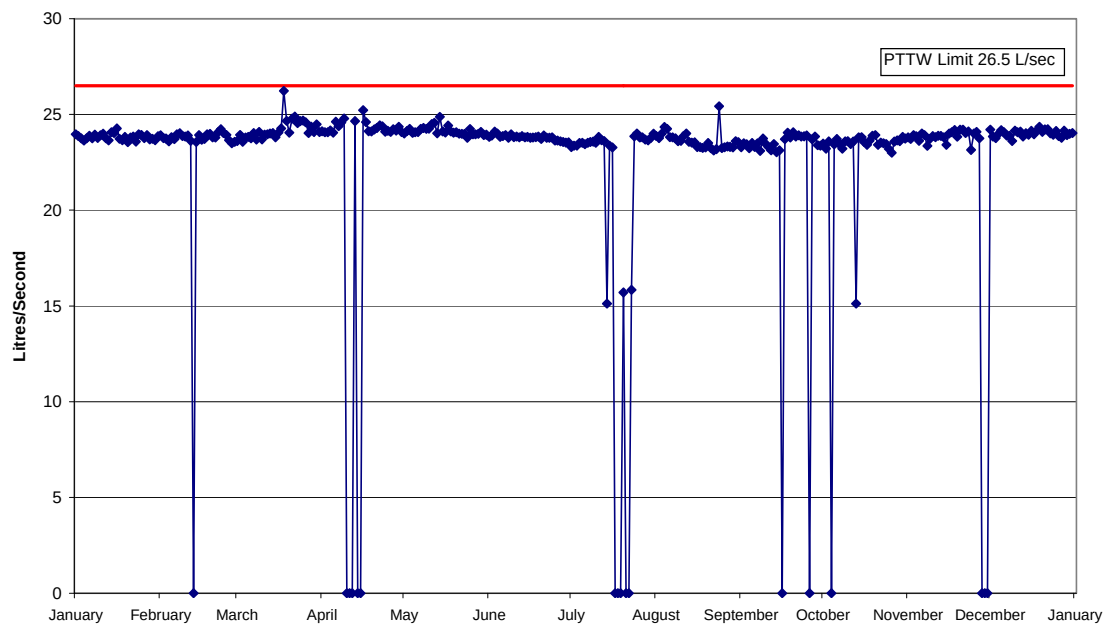
**Figure 46: Queensville Well No. 4
Monthly Average Flow and Maximum Daily Flow 2009**



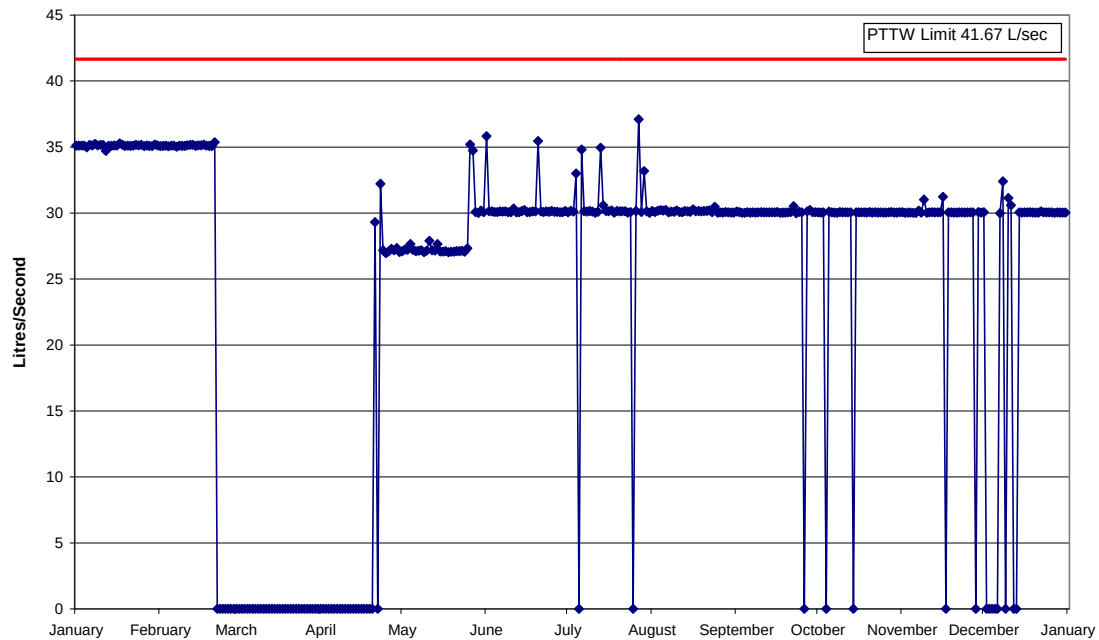
Throughout the period of January 1 – December 31, 2009 the withdrawal rates from the Newmarket/East Gwillimbury production wells did not exceed the permitted limits.

The '*Daily Instantaneous Peak Flow (litres)*' for January 1- December 31, 2009 are presented in Figures 47 through 58.

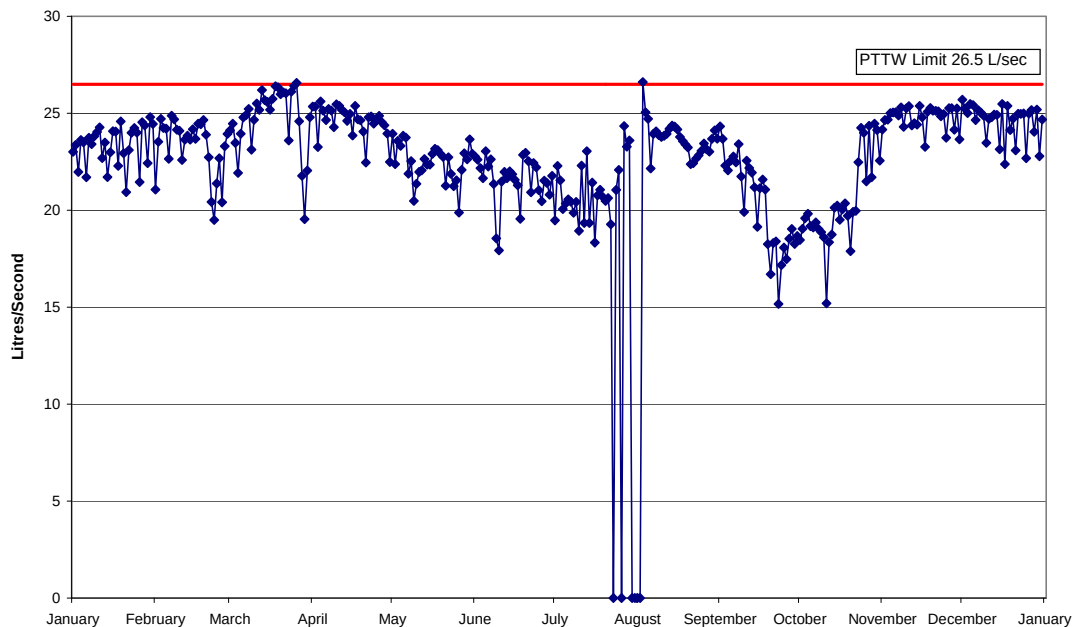
**Figure 47: Holland Landing Well No. 1
Daily Instantaneous Peak Flow 2009**



**Figure 48: Holland Landing Well No. 2
Daily Instantaneous Peak Flow 2009**



**Figure 49: Newmarket Well No. 1
Daily Instantaneous Peak Flow 2009**



**Figure 50: Newmarket Well No. 2
Daily Instantaneous Peak Flow 2009**

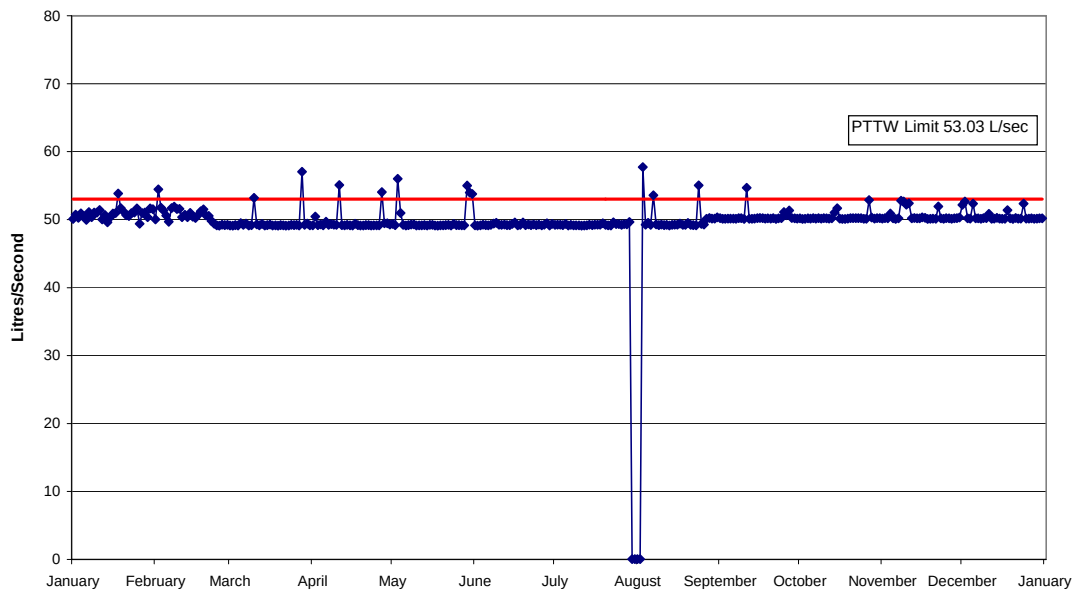


Figure 49 and 50 shows instantaneous peak flow rates recorded over the PTTW limit. All peaks were less than 5 minutes in duration and represent less than 1% of the total volume of water taken for the day. These peaks are associated with the initial start up of a pump by removing back pressure or a change in the distribution system pressure.

**Figure 51: Newmarket Well No. 13
Daily Instantaneous Peak Flow 2009**

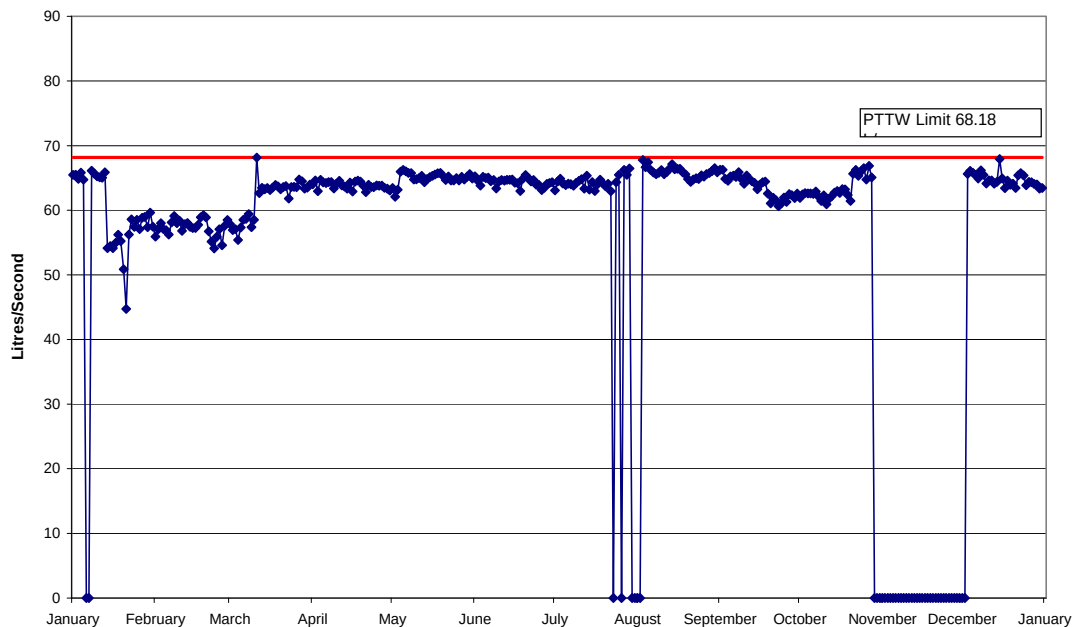
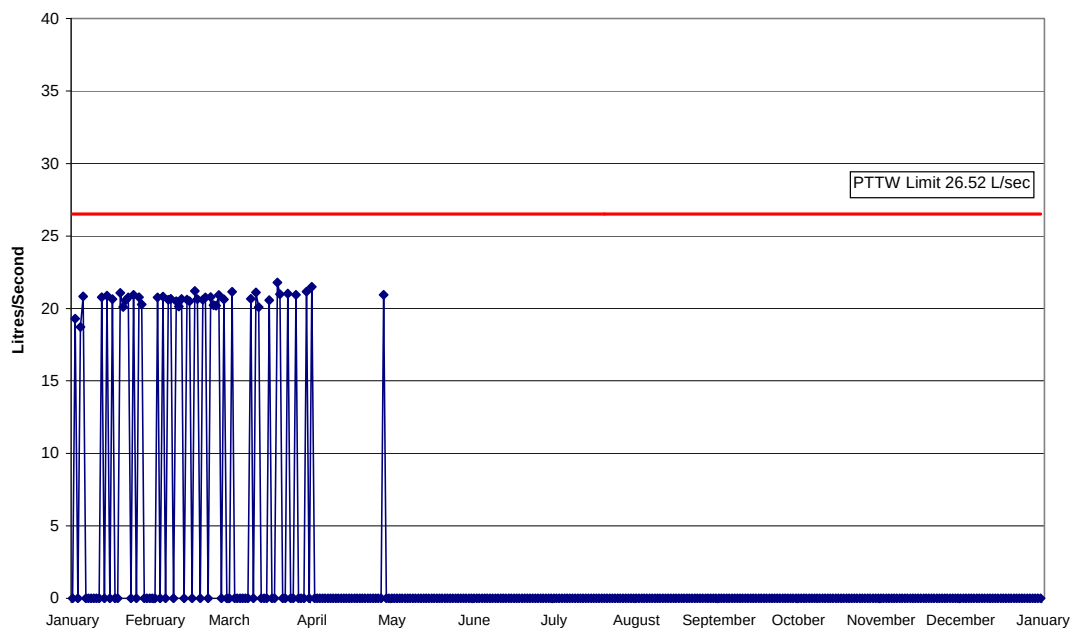
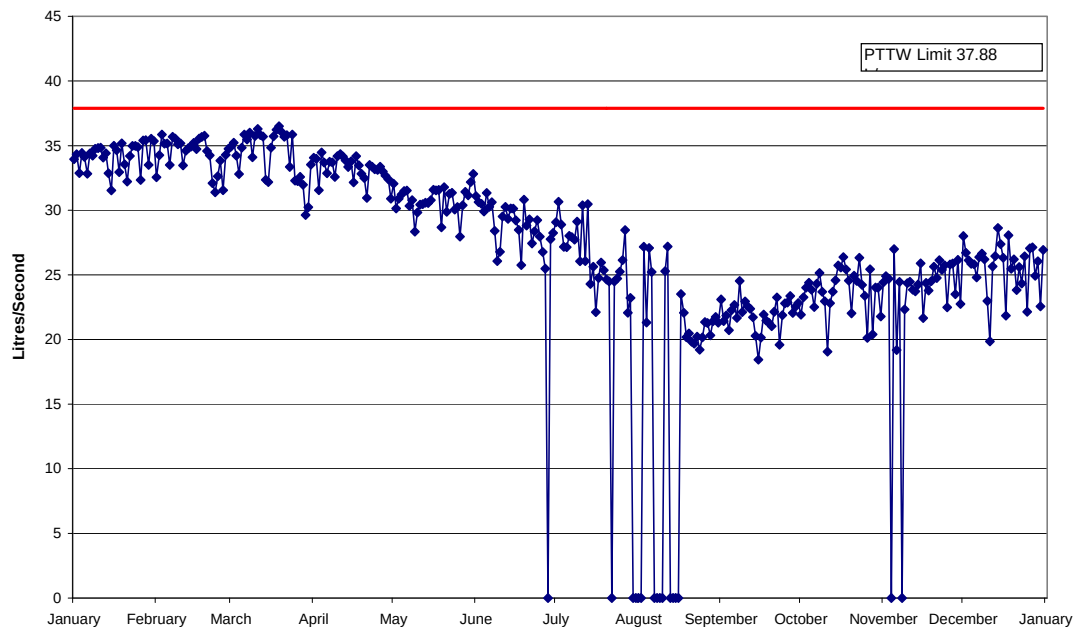


Figure 51 shows instantaneous peak flow rates recorded over the PTTW limit. All peaks were less than 5 minutes in duration and represent less than 1% of the total volume of water taken for the day. These peaks are associated with the initial start up of a pump by removing back pressure or a change in the distribution system pressure.

**Figure 52: Newmarket Well No. 14
Daily Instantaneous Peak Flow 2009**



**Figure 53: Newmarket Well No. 15
Daily Instantaneous Peak Flow 2009**



**Figure 54: Newmarket Well No. 16
Daily Instantaneous Peak Flow 2009**

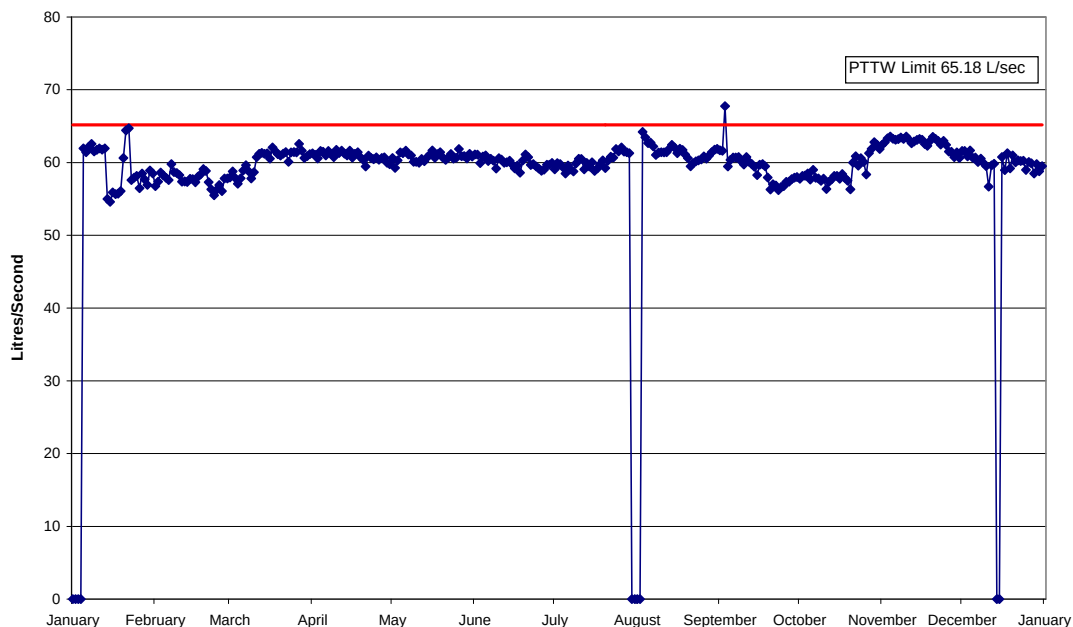
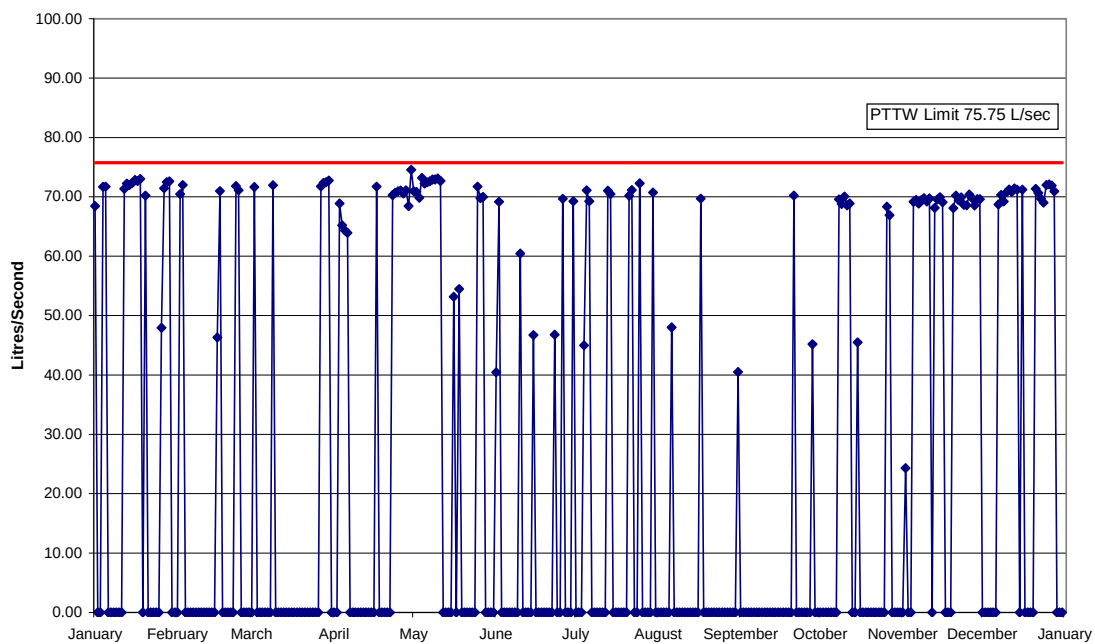


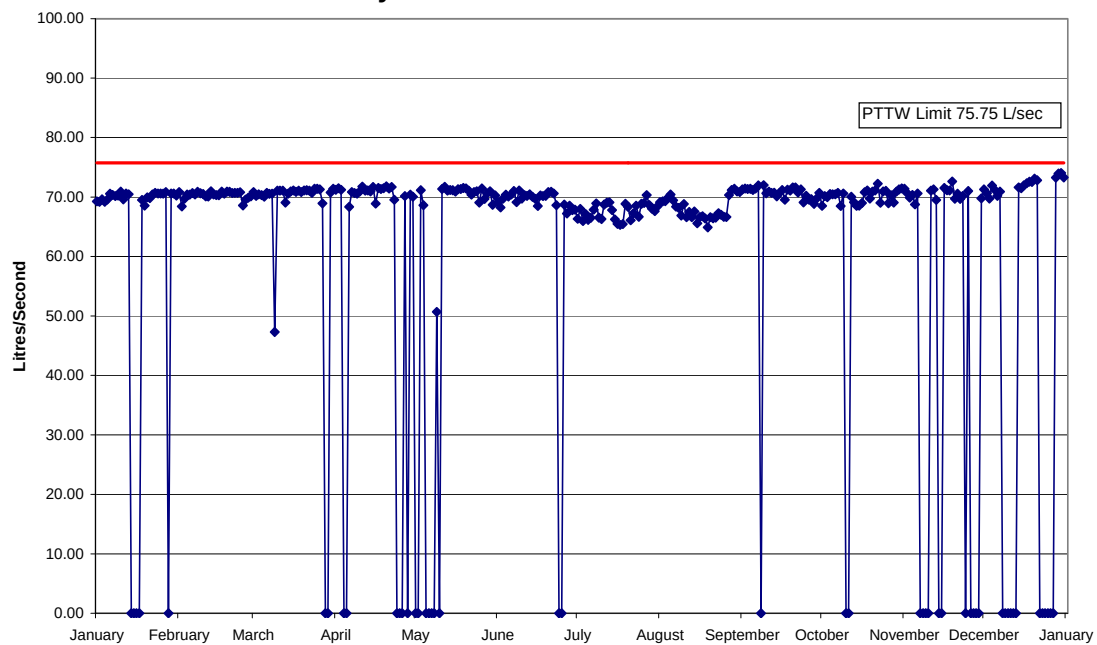
Figure 54 shows instantaneous peak flow rates recorded over the PTTW limit. All peaks were less than 5 minutes in duration and represent less than 1% of the total volume of water taken for the day. These peaks are associated with the initial start up of a pump by removing back pressure or a change in the distribution system pressure.

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**Figure 55: Queensville Well No. 1
Daily Instantaneous Peak Flow 2009**



**Figure 56: Queensville Well No. 2
Daily Instantaneous Peak Flow 2009**



**Figure 58: Queensville Well No. 3
Daily Instantaneous Peak Flow 2009**

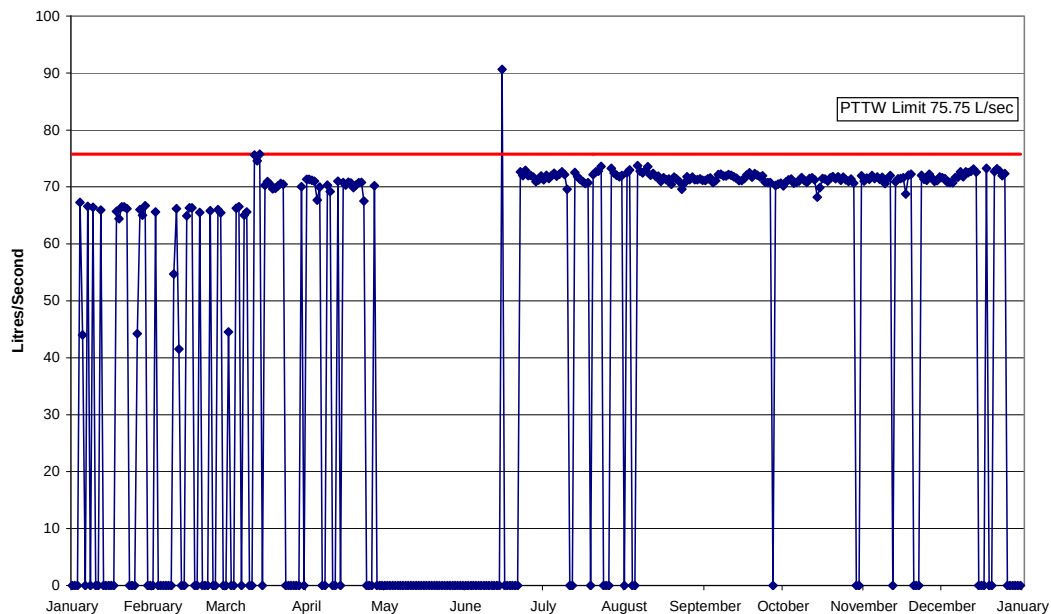
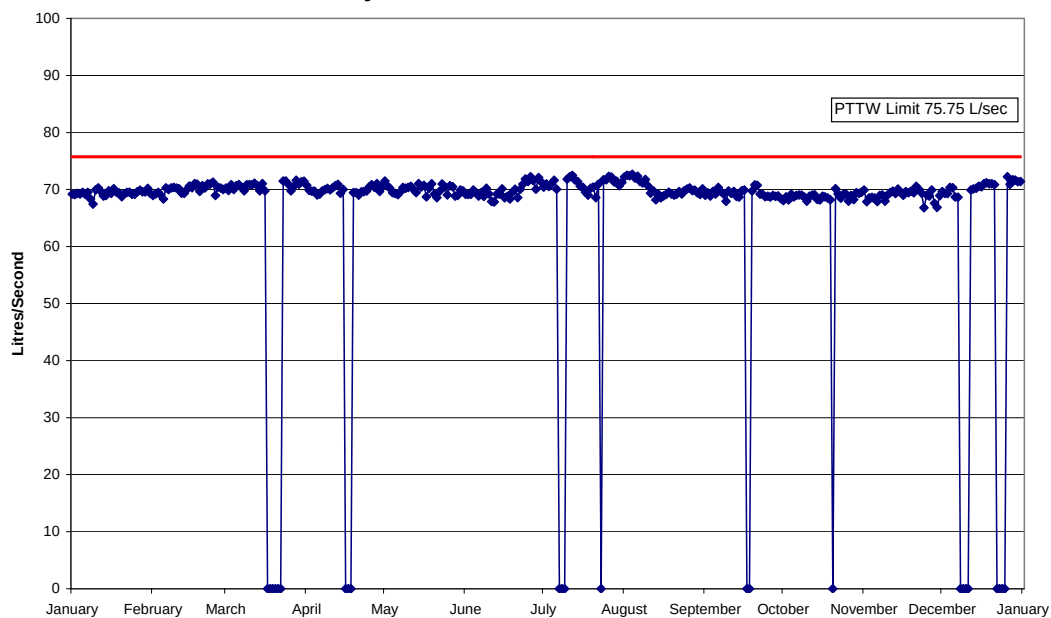


Figure 58 shows instantaneous peak flow rates recorded over the PTTW limit. All peaks were less than 5 minutes in duration and represent less than 1% of the total volume of water taken for the day. These peaks are associated with the initial start up of a pump by removing back pressure or a change in the distribution system pressure.

**Figure 58: Queensville Well No. 4
Daily Instantaneous Peak Flow 2009**



2.10 Nobleton

York Region operates a water supply system to service Nobleton, Township of King, under authority of a C of A issued by the MOE. The C of A includes reference to the PTTW also issued by the MOE. Details of the C of A and PTTW and other relevant classification information for the Nobleton Water Supply are presented in Table 28. All system upgrades required by the C of A have been completed.

TABLE 28: Nobleton Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number: Issue Date:	1146-7JLPMR October 7, 2008
Current Permit to Take Water Number: Issue Date: Expiry Date:	0747-7SXHU5 June 26, 2009 June 30, 2019
Previous Permit to Take Water Number: Issue Date: Expiry Date:	7433-6HWTED November 15, 2005 June 25, 2009
MOE Waterworks Number:	220002306
System Classification:	Water Distribution & Supply (WDS II)

2.10.1 Water Taking

The PTTW for the Nobleton Water Supply System allows York Region to withdraw up to 1,964,000 litres per day from production wells 2 and 2,496,000 litres per day from production well 3 and 4 with a maximum combined total permitted withdrawal of 4,460,000 litres per day. Well 4 is currently not in service, pending the design and construction of the treatment infrastructure for the new well anticipated in 2011. Once well 4 is in service the water supply will be operated under two separate cycles. Cycle 1 allows wells 3 and 4 to be operated up to a maximum of 4,460,000 litres per day. Cycle 2 allows wells 4 and 2 to be operated up to a maximum of 4,460,000 litres per day. Wells 2 and 3 will not be operated simultaneously.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored and alarmed on a continuous basis to ensure that the regulated flows are not exceeded.

2.10.2 Measuring Points

Flow meters are in place downstream of each production well and record the instantaneous flow rate and total volume of water that has passed through the meter. The flow meters are calibrated annually to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored using two methods which provides York Region with the opportunity to compare and contrast data, in the event one method should fail.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.
2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

2.10.3 Water Withdrawal

The total volume of water taken from the production wells of the Nobleton Water Supply System for January 1 – December 31, 2009 was 326,211,721 litres or 893,731 litres per day on average.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are presented in Table 29.

TABLE 29: Permitted and Actual Maximum Daily Withdrawal from the Nobleton Production Wells for January 1 – December 31, 2009

Location	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Withdrawal During Peak Day
Well 2	1,964,000	1,312,297 – July 6, 2009	66.8%
Well 3	2,496,000	1,137,313 – October 8, 2009	45.6%
Well 4	2,496,000	not yet commissioned	-

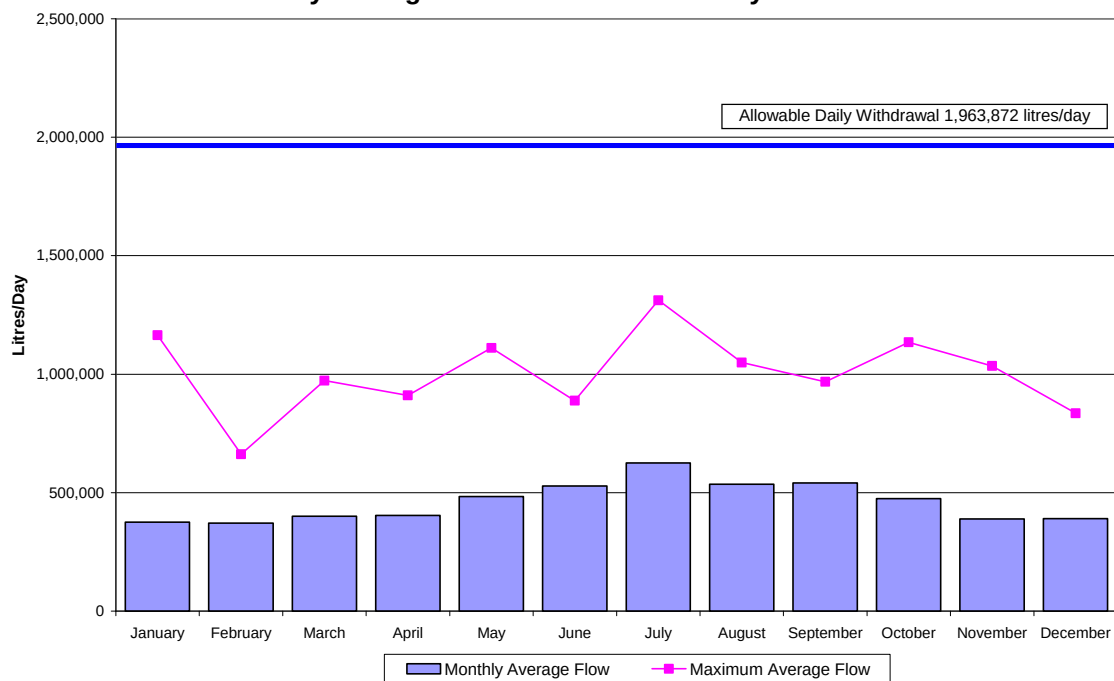
The maximum permitted water withdrawal and the actual annual withdrawal recorded daily water taking are presented in Table 30.

TABLE 30: Permitted and Actual Maximum Withdrawal from the Nobleton Production Wells for January 1 – December 31, 2009

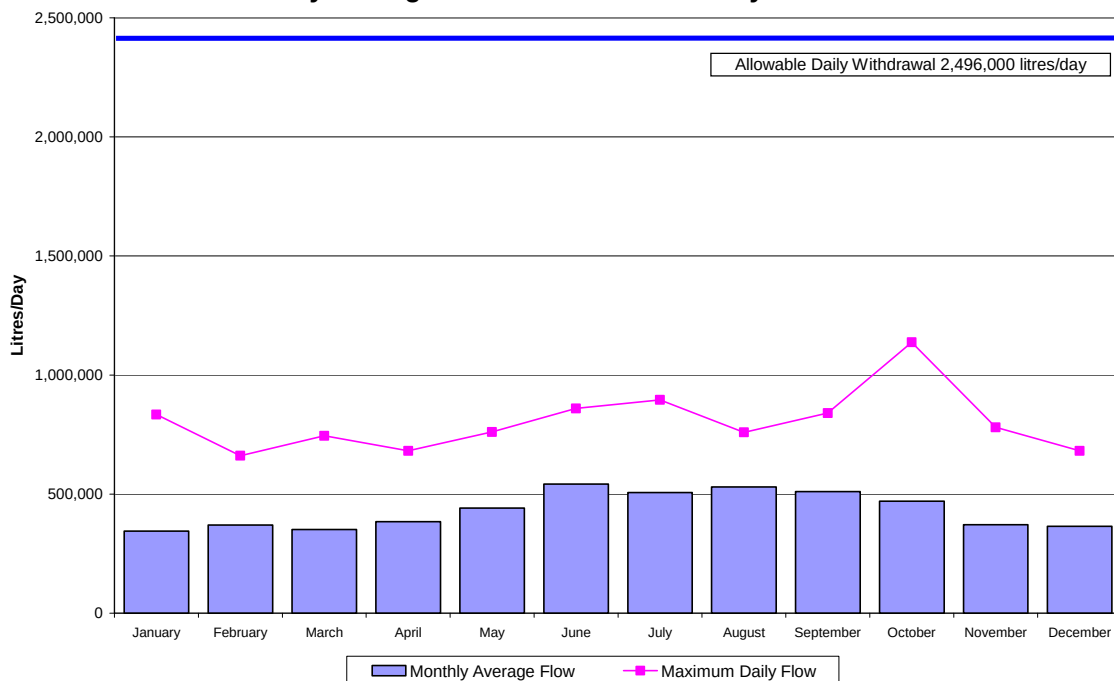
Annual Permitted Withdrawal (Litres)	Actual Annual Withdrawal (Litres)	Percentage of Permitted Annual Withdrawal
1,627,900,100	326,211,721	20.0%

The monthly average flow rates, maximum daily flow, and the permitted daily withdrawal are presented in Figures 59 and 60.

**Figure 59: Nobleton Well No. 2
Monthly Average Flow and Maximum Daily Flow 2009**



**Figure 60: Nobleton Well No. 3
Monthly Average Flow and Maximum Daily Flow 2009**

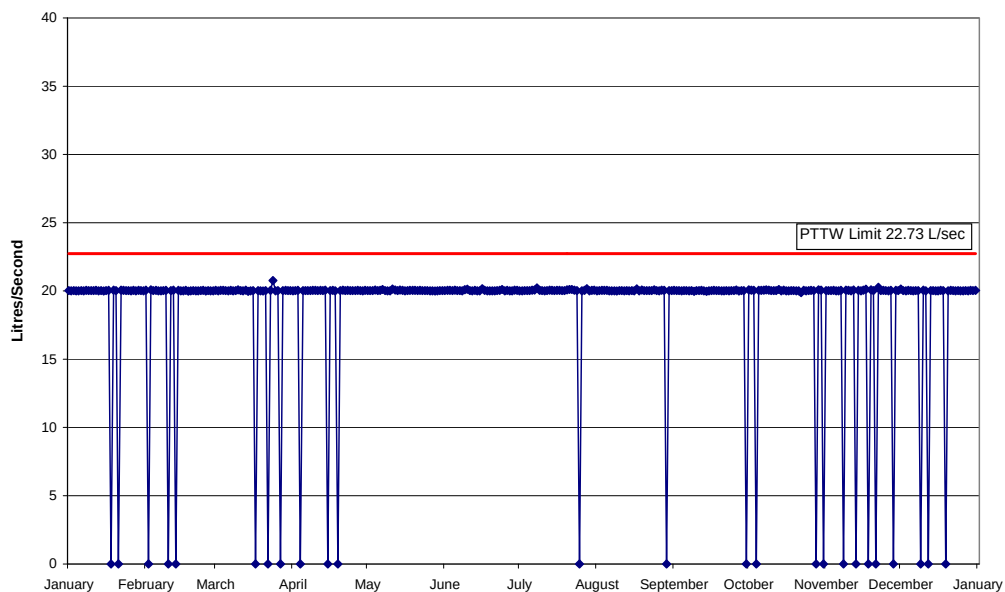


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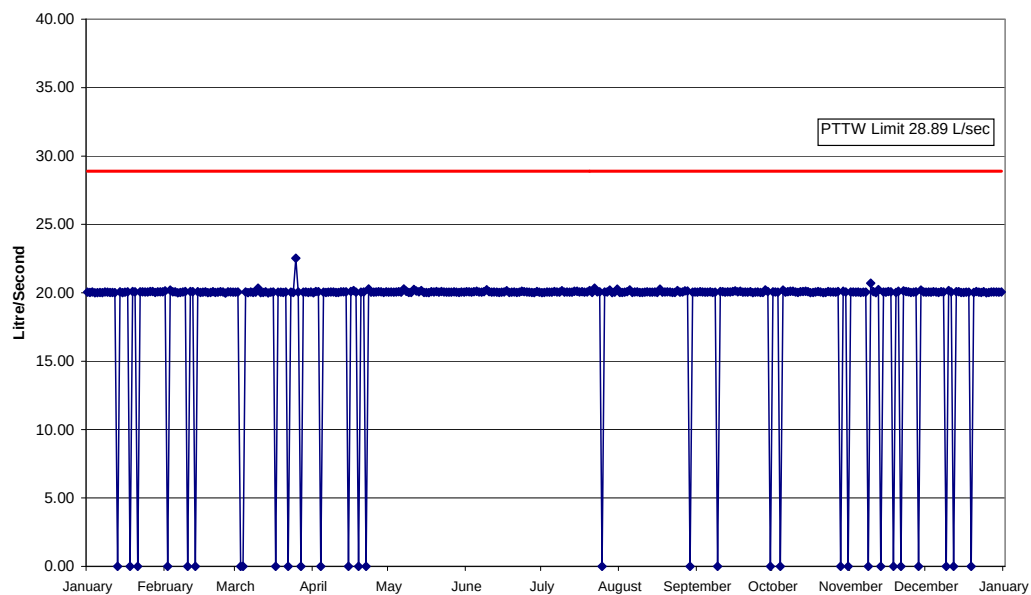
The withdrawal rates from the Nobleton production wells did not exceed the permitted limits during January 1 – December 31, 2009.

The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2009 are presented in Figures 61 and 62.

**Figure 61: Nobleton Well No. 2
Daily Instantaneous Peak Flow 2009**



**Figure 62: Nobleton Well No. 3
Daily Instantaneous Peak Flow 2009**



2.11 Schomberg

York Region operates a water supply system to service Schomberg, Township of King, under authority of a C of A issued by the MOE. The C of A includes reference to the PTTW also issued by the MOE. Details of the C of A and PTTW and other relevant classification information for the Schomberg Water Supply are presented in Table 31. All system upgrades required by the C of A have not yet been completed.

TABLE 31: Schomberg Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number:	0031-7FAQ3J
Issue Date:	June 27, 2008
Previous Certificate of Approval Number:	2234-7BKKK9
Issue Date:	March 25, 2008
Current Permit to Take Water Number:	0706-7E8T5G
Issue Date:	June 3, 2008
Expiry Date:	April 30, 2018
MOE Waterworks Number:	220004901
System Classification:	Water Distribution & Supply (WDS II)

2.11.1 Water Taking

The PTTW for the Schomberg Water Supply System allows York Region to withdraw up to 1,636,560 litres per day from production well 2, 2,290,000 litres per day from production well 3 and 1,507,507,680 litres per day from production well 4. All three wells are combined and treated through the newly constructed Schomberg Water Treatment Plant with a maximum combined total permitted withdrawal of 5,434,240 litres per day

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored and alarmed on a continuous basis to ensure that the regulated flows are not exceeded.

2.11.2 Measuring Points

Flow meters are in place downstream of each production well and record the instantaneous flow rate and total volume of water that has passed through the meter. The flow meters are calibrated annually to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored using two methods which provides York Region with the opportunity to compare and contrast data, in the event one method should fail.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This ‘manual’ data

was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

2.11.3 Water Withdrawal

The total volume of water taken from the production wells of the Schomberg Water Supply System for January 1 – December 31, 2009 was 240,333,868 or 658,449 litres per day on average.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are presented in Table 32.

TABLE 32: Permitted and Actual Maximum Daily Withdrawal from the Schomberg Production Wells for January 1 – December 31, 2009

Location	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Withdrawal During Peak Day
Well 2	1,636,560	1,248,375 – July 17, 2009	76.3%
Well 3	2,290,000	1,352,750 – May 26, 2009	59.1%
Well 4*	1,507,680	1,005,971 – December 18, 2009	66.7%

* Well 4 commissioned on December 15, 2009 along with the newly constructed Schomberg Water Treatment Plant

The maximum permitted water withdrawal and the actual annual withdrawal recorded daily water taking are presented in Table 33.

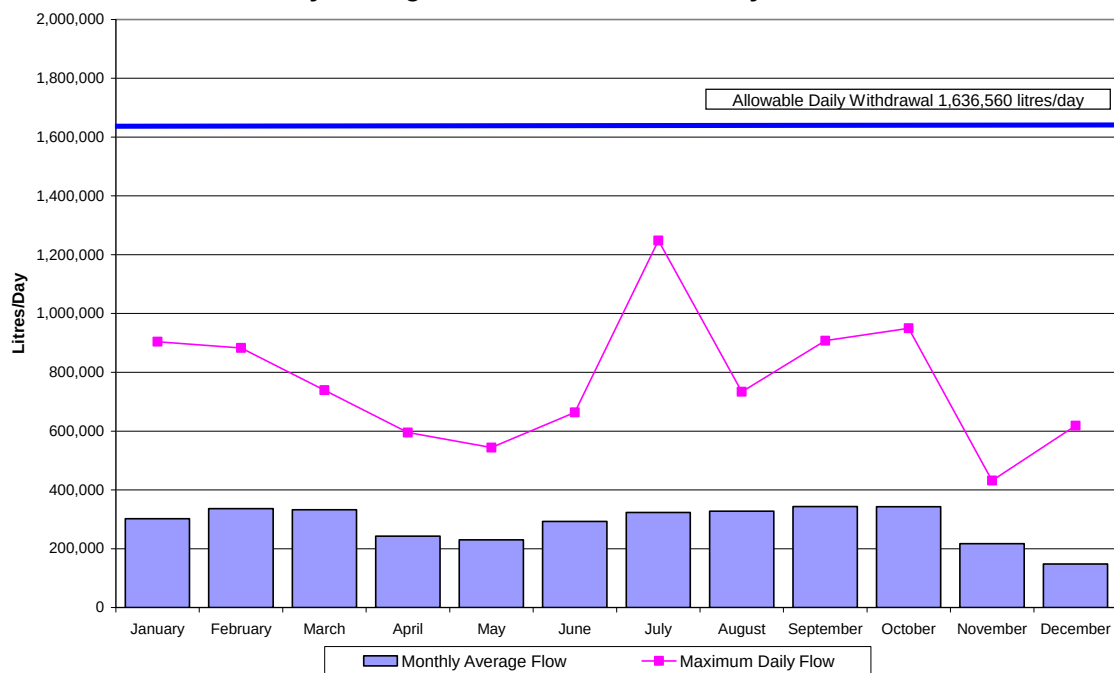
TABLE 33: Permitted and Actual Maximum Withdrawal from the Schomberg Production Wells for January 1 – December 31, 2009

Annual Permitted Withdrawal (Litres)	Actual Annual Withdrawal (Litres)	Percentage of Permitted Annual Withdrawal
1,983,497,600	240,333,868	12.1%

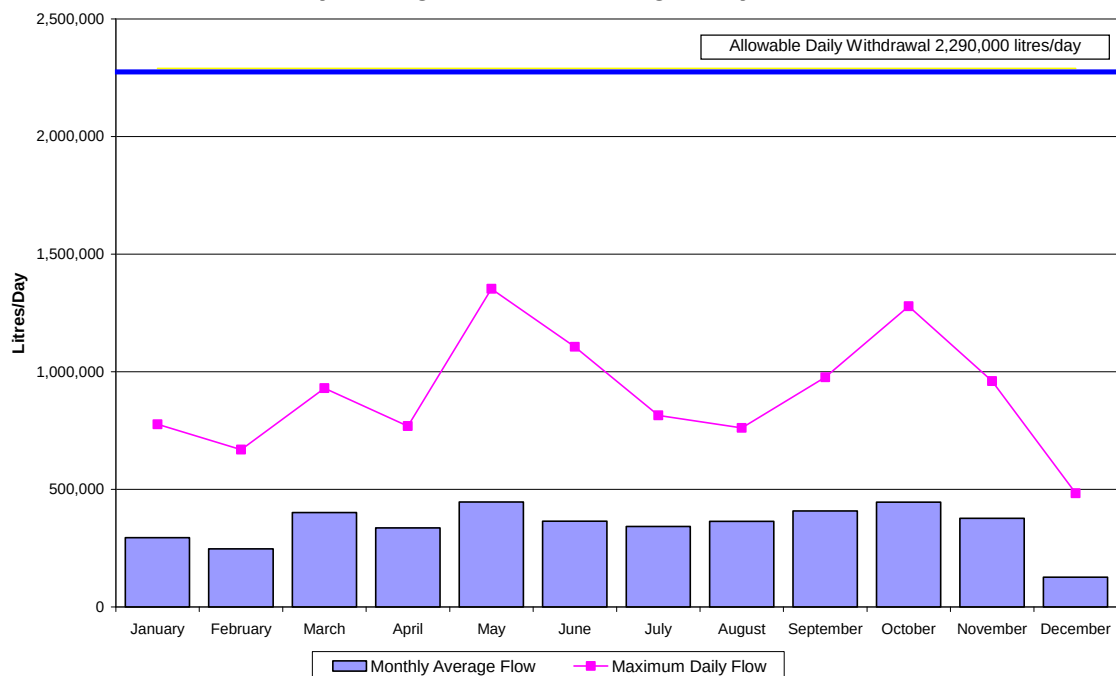
The monthly average flow rates, maximum daily flow, and the permitted daily withdrawal are presented in Figures 63 through 65.

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**Figure 63: Schomberg Well No. 2
Monthly Average Flow and Maximum Daily Flow 2009**

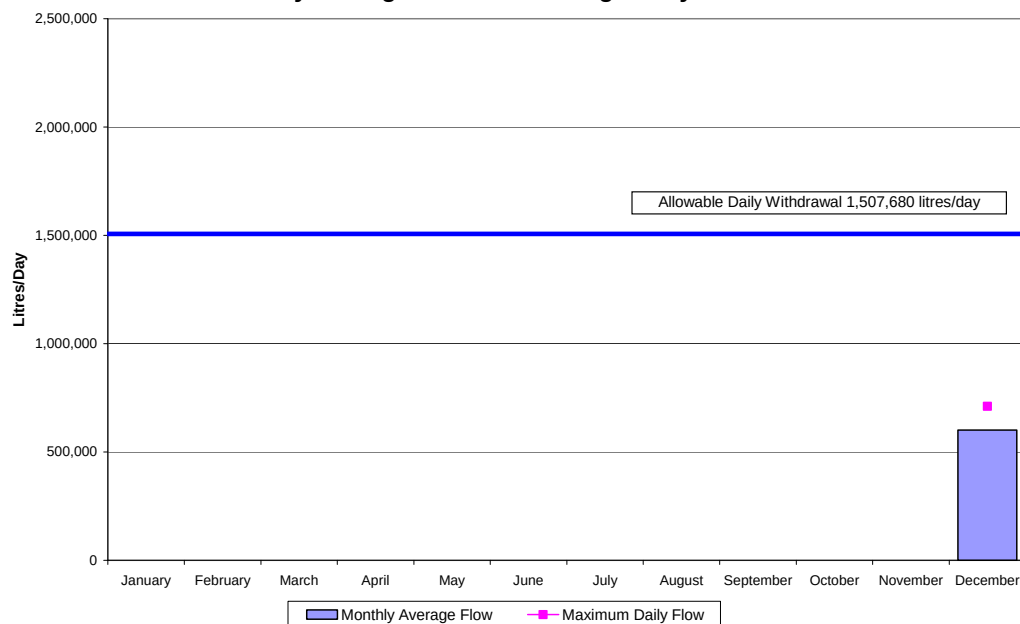


**Figure 64: Schomberg Well No. 3
Monthly Average Flow and Average Daily Flow 2009**



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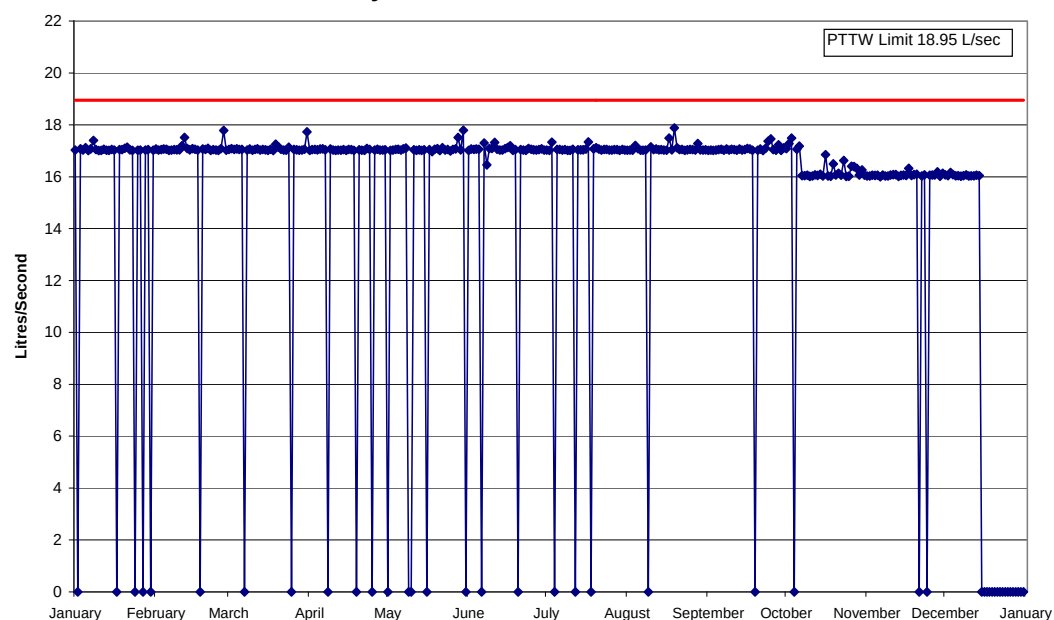
**Figure 65: Schomberg Well No. 4
Monthly Average Flow and Average Daily Flow 2009**



The actual volumes of water taken from the Schomberg production wells in the period of January 1 – December 31, 2009 did not exceed the permitted daily withdrawal volumes.

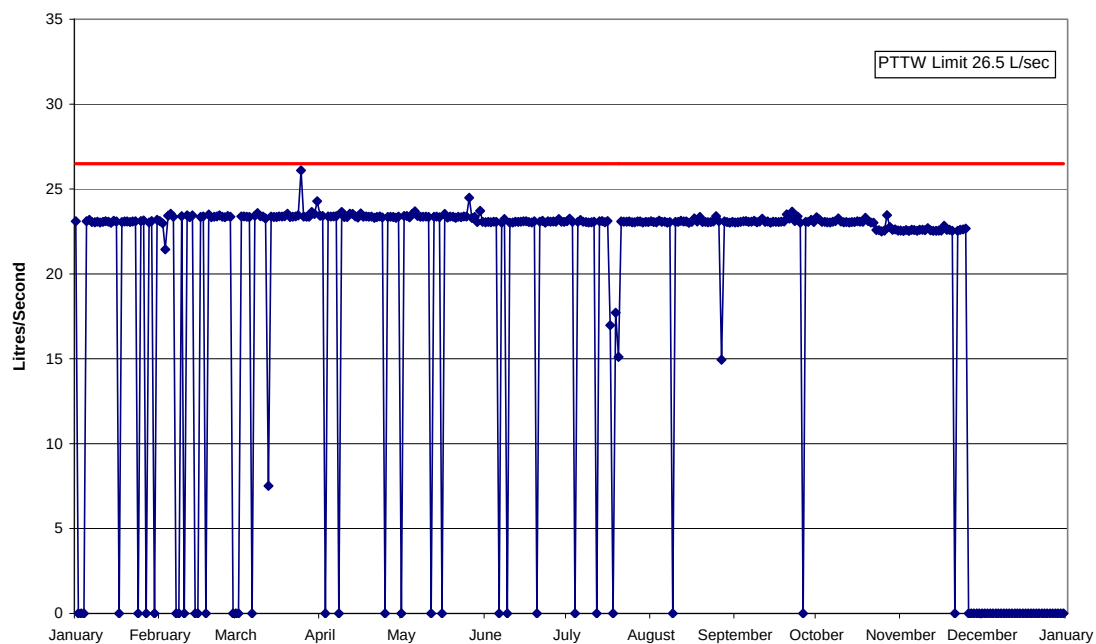
The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2009 are presented in Figures 66 through 68.

**Figure 66: Schomberg Well No. 2
Daily Instantaneous Peak Flow 2009**

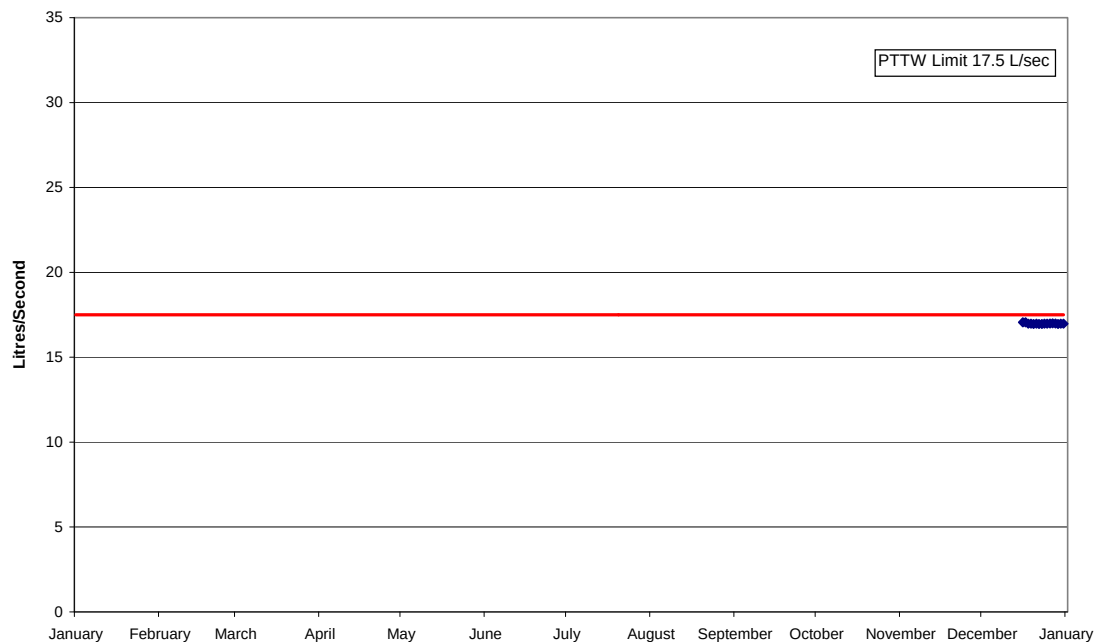


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**Figure 67: Schomberg Well No. 3
Daily Instantaneous Peak Flow 2009**



**Figure 68: Schomberg Well No. 4
Daily Instantaneous Peak Flow 2009**



2.12 Stouffville

York Region operates a water supply system to service Stouffville, Town of Whitchurch-Stouffville, under authority of a C of A issued by the MOE. The C of A includes reference to the PTTW also issued by the MOE. Details of the C of A and PTTW and other relevant classification information for the Stouffville Water Supply are presented in Table 34. As part of York Regions long-term water supply initiative to improve water supply and quality, York Region began supplementing the Stouffville Water Supply System with the City of Toronto lake based water supply as of November 2009. All system upgrades required by the C of A have not yet been completed.

TABLE 34: Stouffville Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number:	4621-7TCRPL
Issue Date:	July 14, 2009
Previous Certificate of Approval Number:	1547-784JGQ
Issue Date:	January 8, 2008
Current Permit to Take Water Number:	5722-74LPXE
Issue Date:	June 29, 2007
Expiry Date:	June 30, 2012
MOE Waterworks Number:	220002333
System Classification:	Water Distribution & Supply III (WD III) Water Treatment I (WTI)

2.12.1 Water Taking

The PTTW for the Stouffville Water Supply System allows York Region to withdraw up to 14,238,720 litres per day from production wells 1, 2, 3, 5 and 6.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored and alarmed on a continuous basis to ensure that the regulated flows are not exceeded.

2.12.2 Measuring Points

Flow meters are in place downstream of each production well and record the instantaneous flow rate and total volume of water that has passed through the meter. The flow meters are calibrated annually to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored using two methods which provides York Region with the opportunity to compare and contrast data, in the event one method should fail.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This ‘manual’ data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

2.12.3 Water Withdrawal

The total volume of water taken from the production wells of the Stouffville Water Supply System from January 1 – December 31, 2009 was 2,258,736,222 litres or 6,188,318 litres per day on average.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are presented in Table 35.

TABLE 35: Permitted and Actual Maximum Daily Withdrawal from the Stouffville Production Wells for January 1 – December 31, 2009

Location	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Withdrawal During Peak Day
Well 1	2,946,240	2,594,000 – August 5, 2009	88.0%
Well 2	2,946,240	2,591,625 – July 22, 2009	88.0%
Well 3	2,946,240	2,589,750 – May 25, 2009	87.9%
Well 5	2,289,600	1,913,438 – September 14, 2009	83.6%
Well 6	3,110,400	1,667,982 – May 18, 2009	53.6%

The maximum permitted water withdrawal and the actual annual withdrawal recorded daily water taking are presented in Table 36.

TABLE 36: Permitted and Actual Maximum Withdrawal from the Stouffville Production Wells for January 1 – December 31, 2009

Annual Permitted Withdrawal (Litres)	Actual Annual Withdrawal (Litres)	Percentage of Permitted Annual Withdrawal
5,197,132,800	2,258,736,222	43.5%

The monthly average flow rates, maximum daily flow, and the permitted daily withdrawal are presented in Figures 69 through 73.

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**Figure 69: Stouffville Well No. 1
Monthly Average Flow and Maximum Daily Flow 2009**

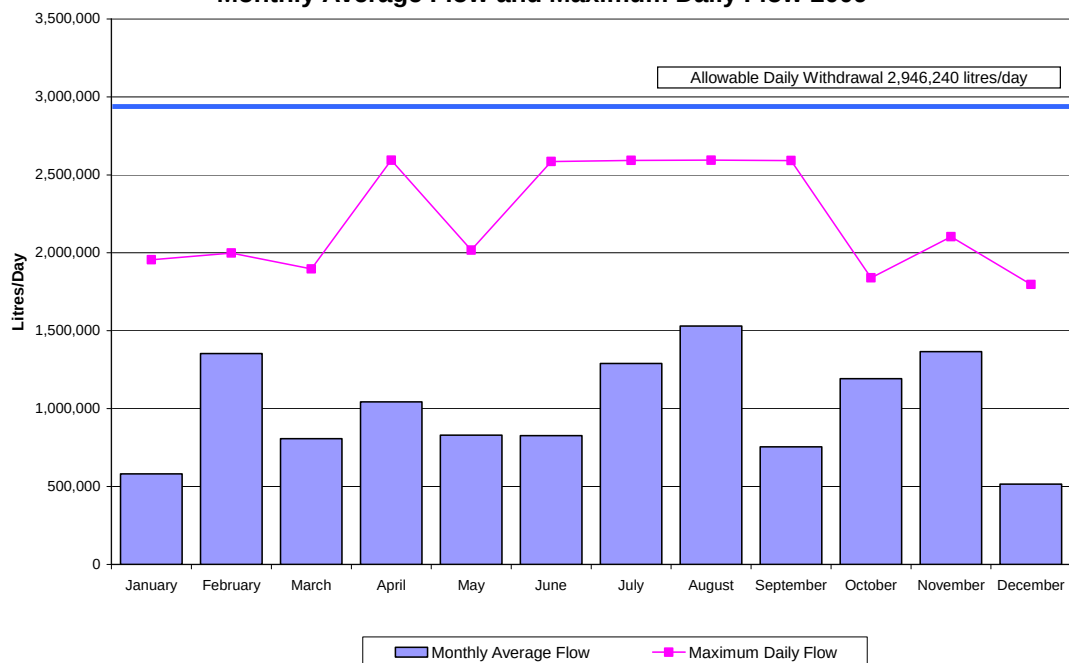
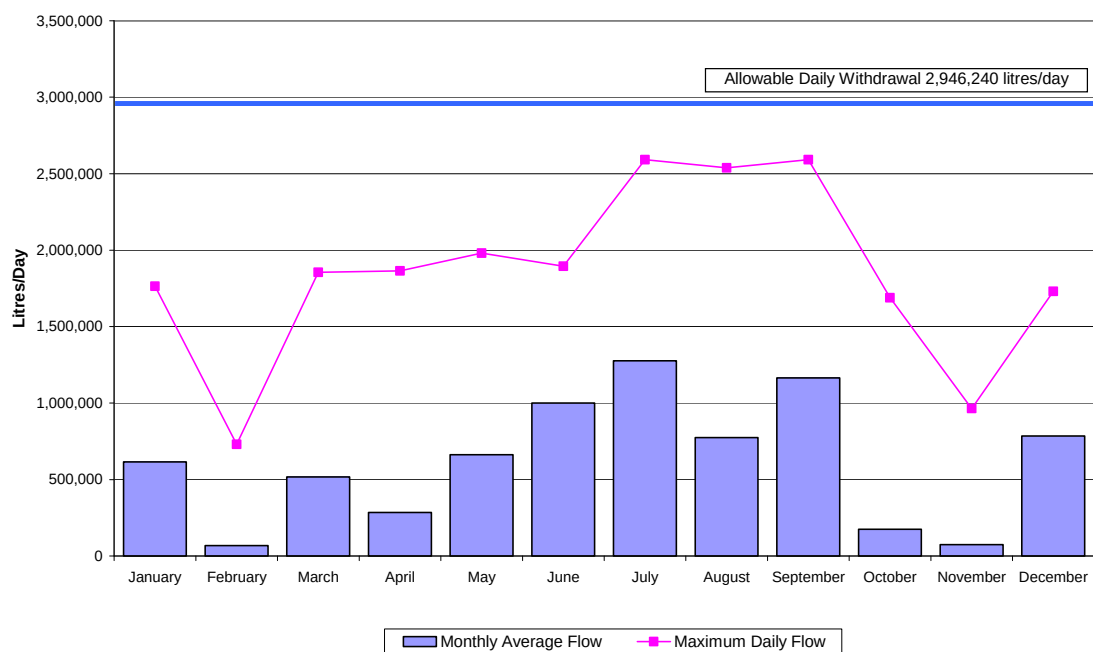
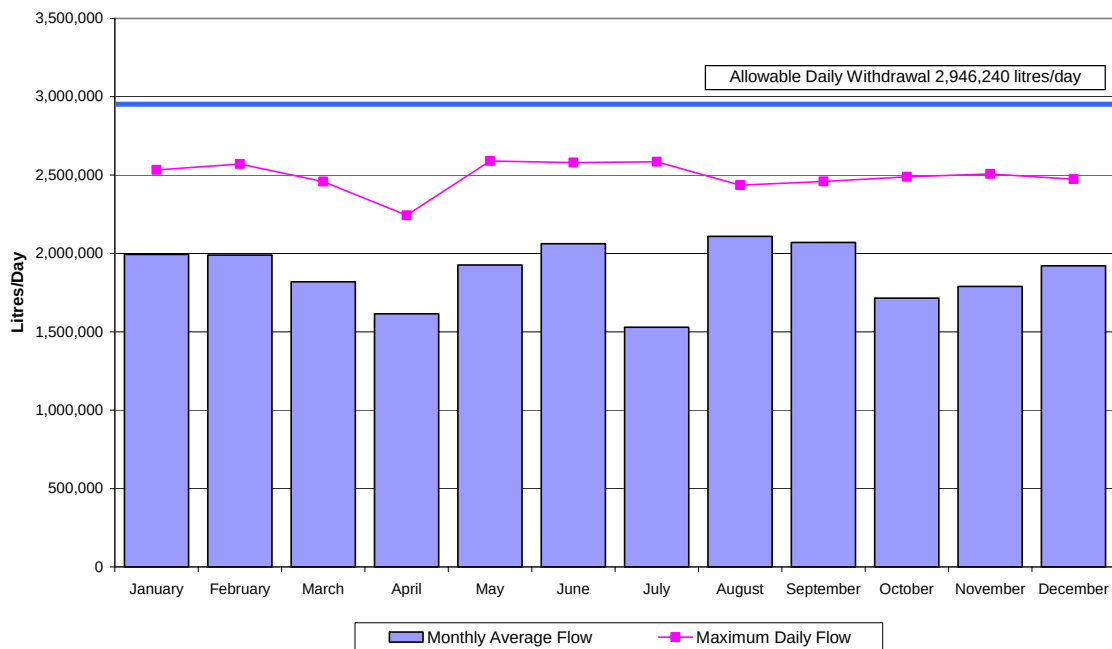


Figure 70 shows a reduced monthly average flow recorded for the months of February, October and November 2009. This reduction in flow was due to the scheduled and unscheduled maintenance conducted on the well annually to improve the overall operation of the water system.

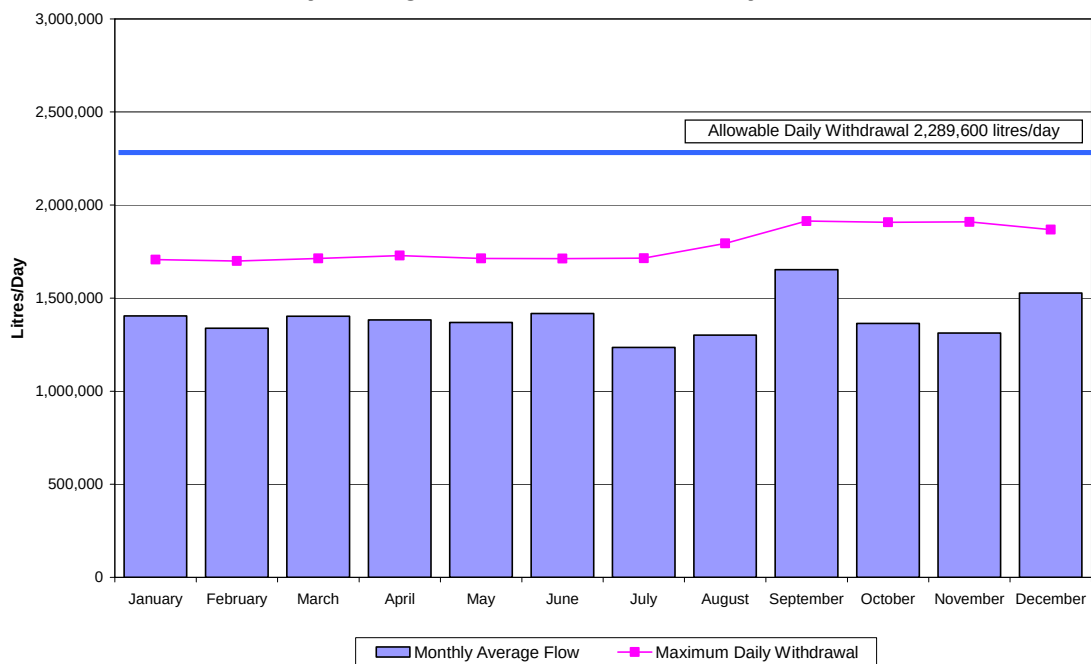
**Figure 70: Stouffville Well No. 2
Monthly Average Flow and Maximum Daily Flow 2009**



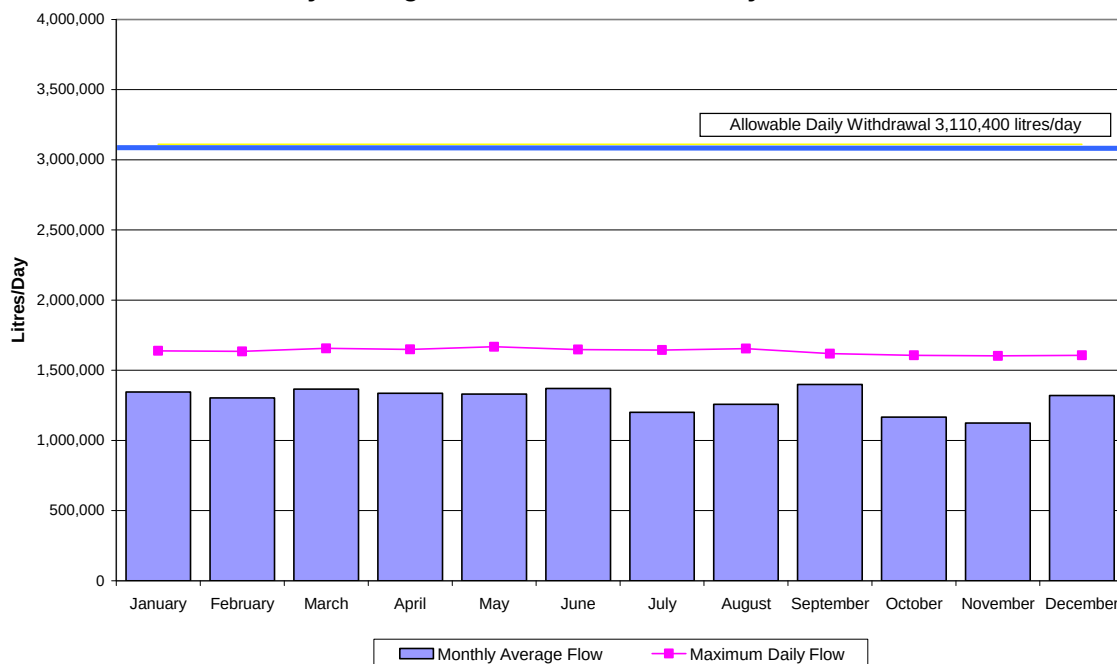
**Figure 71: Stouffville Well No. 3
Monthly Average Flow and Maximum Daily Flow 2009**



**Figure 72: Stouffville Well No. 5
Monthly Average Flow and Maximum Daily Flow 2009**



**Figure 73: Stouffville Well No. 6
Monthly Average Flow and Maximum Daily Flow 2009**



The actual volumes of water taken from the Stouffville production wells for January 1 – December 31, 2009 did not exceed the permitted daily withdrawal volumes.

The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2009 are presented in Figures 74 through 78.

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**Figure 74: Stouffville Well No. 1
Daily Instantaneous Peak Flow 2009**

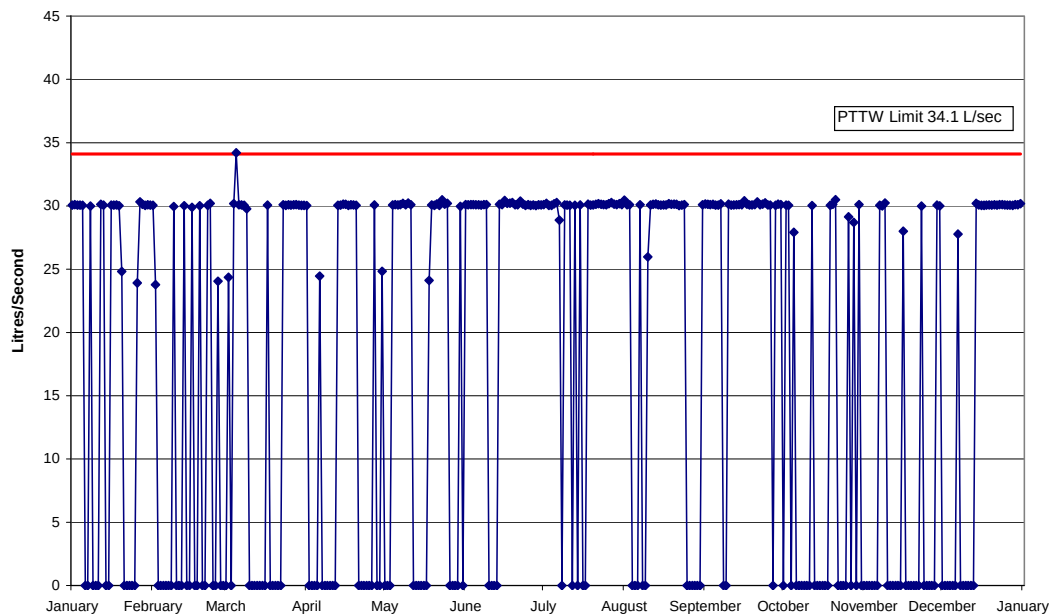
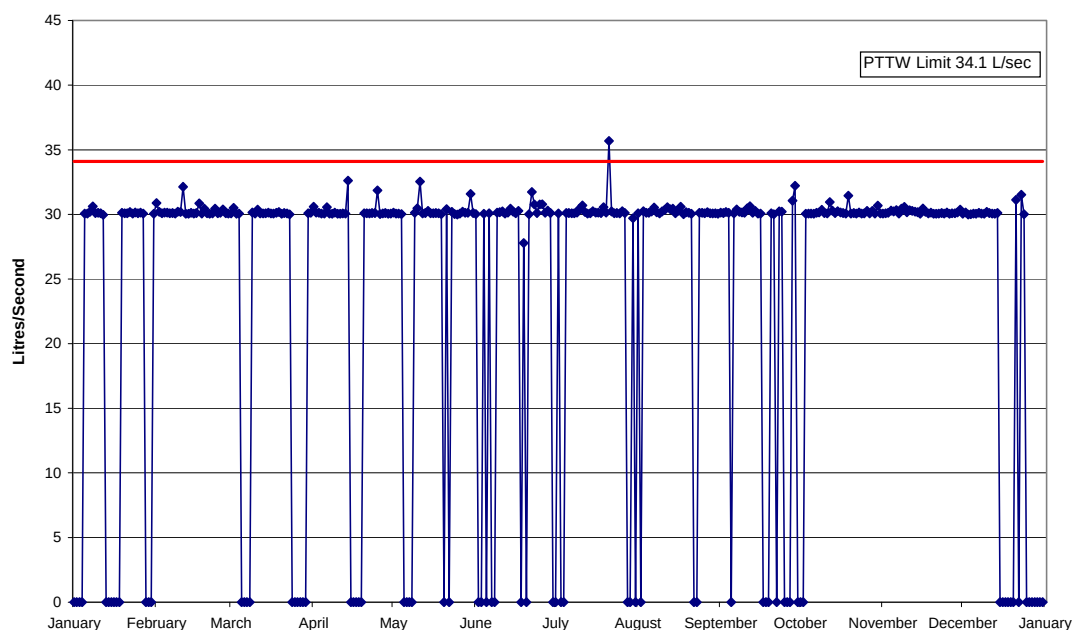


Figure 74 and 75 shows instantaneous peak flow rates recorded over the PTTW limit. All peaks were less than 5 minutes in duration and represent less than 1% of the total volume of water taken for the day. These peaks are associated with the initial start up of a pump by removing back pressure or a change in the distribution system pressure.

**Figure 75: Stouffville Well No. 2
Daily Instantaneous Peak Flow 2009**



**Figure 76: Stouffville Well No. 3
Daily Instantaneous Peak Flow 2009**

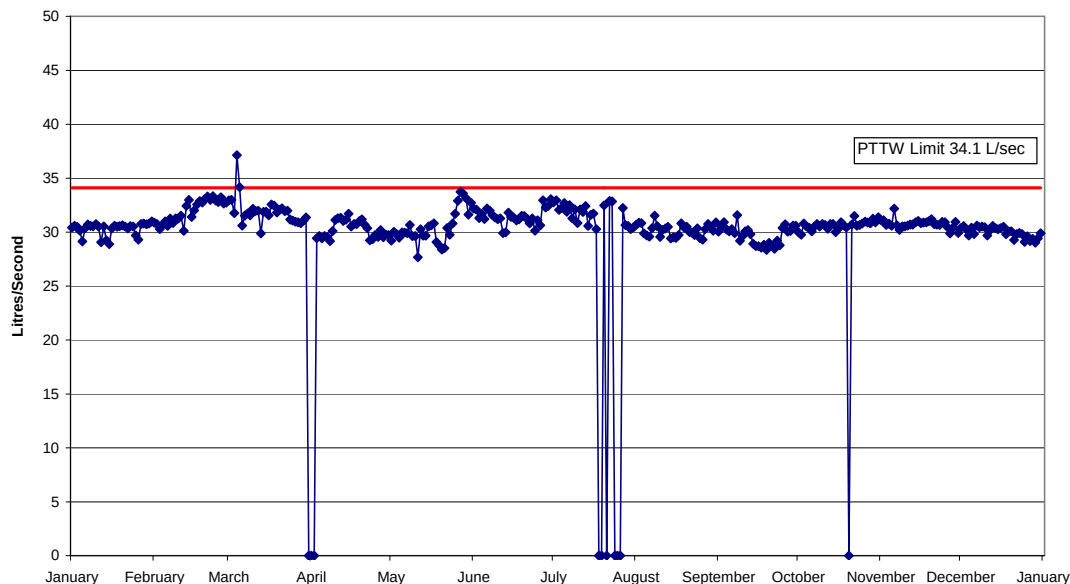
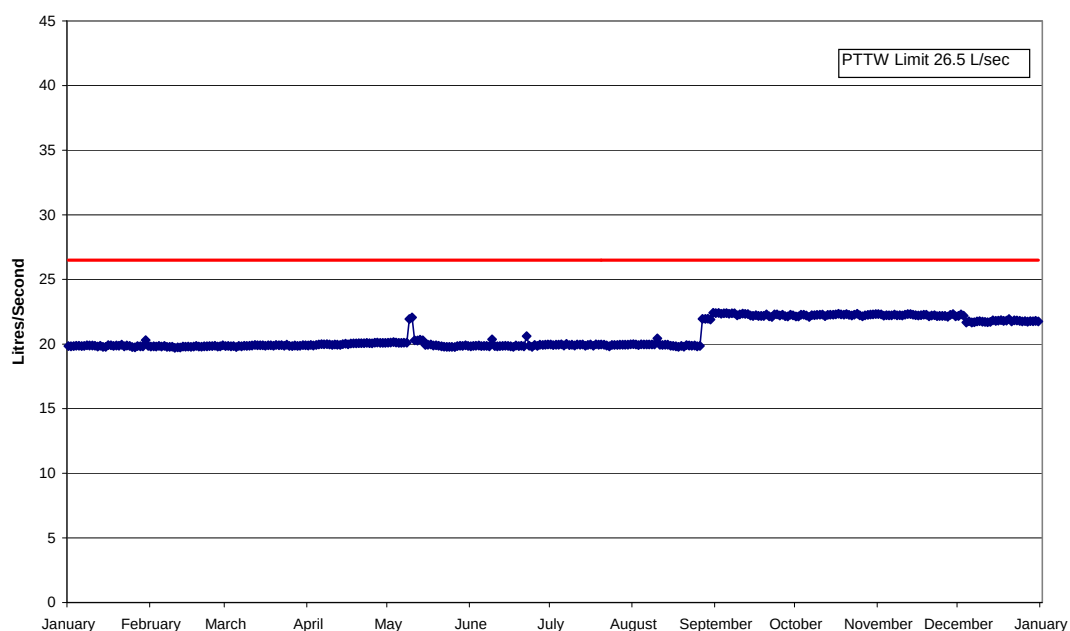


Figure 76 shows instantaneous peak flow rates recorded over the PTTW limit. All peaks were less than 5 minutes in duration and represent less than 1% of the total volume of water taken for the day. These peaks are associated with the initial start up of a pump by removing back pressure or a change in the distribution system pressure.

**Figure 77: Stouffville Well No. 5
Daily Instantaneous Peak Flow 2009**



**Figure 78: Stouffville Well No. 6
Daily Instantaneous Peak Flow 2009**

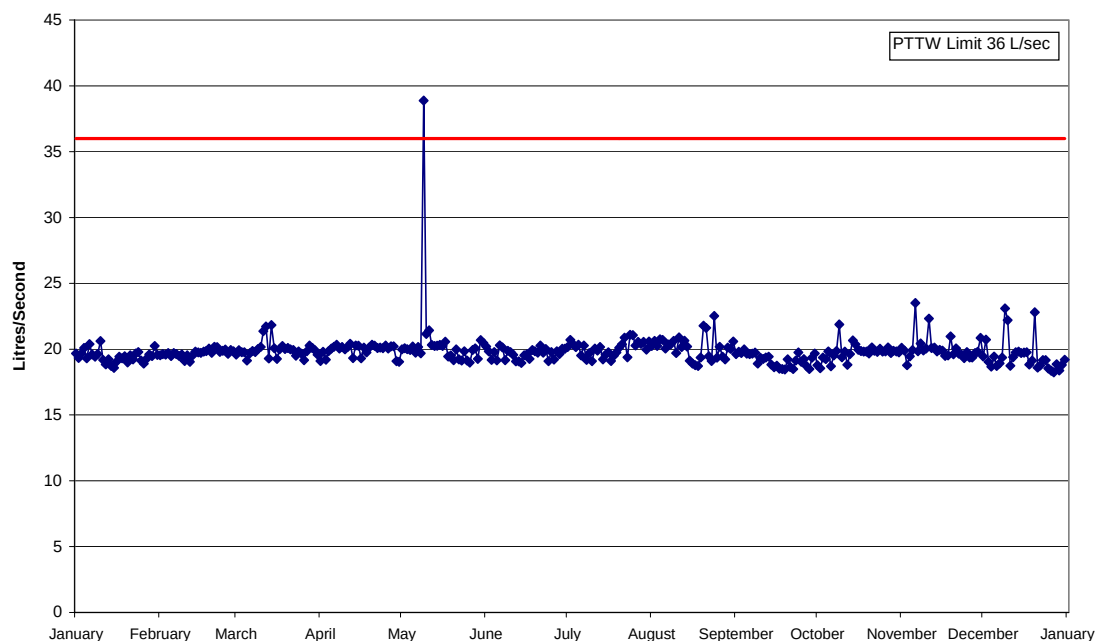
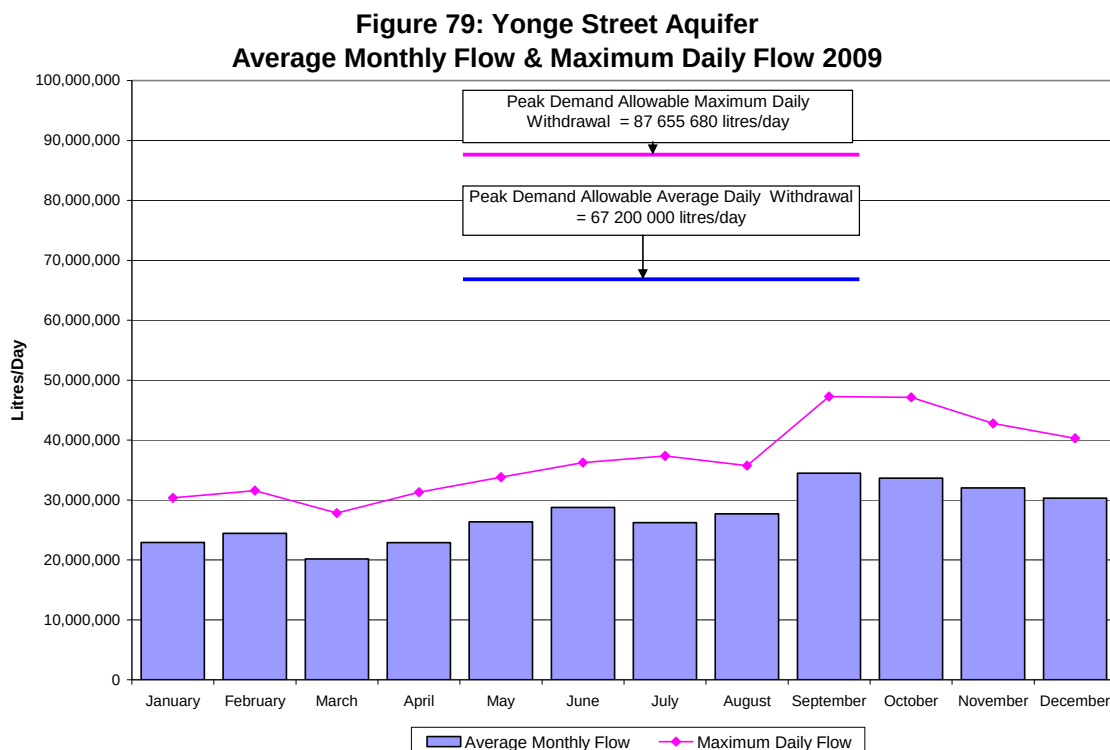


Figure 78 shows instantaneous peak flow rates recorded over the PTTW limit. All peaks were less than 5 minutes in duration and represent less than 1% of the total volume of water taken for the day. These peaks are associated with the initial start up of a pump by removing back pressure or a change in the distribution system pressure.

2.13 Yonge Street Aquifer

The Yonge Street Aquifer is the name given to the source aquifer that supplies groundwater to the communities of Aurora, Newmarket, Holland Landing, Queensville and Sharon. There are 20 wells in total that obtain water from the Yonge Street Aquifer, which are captured under PTTW 6623-68QQ6L.

Detailed information about the individual wells has been provided in separate sections and appears in this report under the ‘Aurora’ or ‘Newmarket / East Gwillimbury’ headings. However, for the purposes of understanding the cumulative impact of our water taking on the Yonge Street Aquifer, Figure 79 is provided below.



The total volume of water taken from the Yonge Street Aquifer from January 1 – December 31, 2009 was 10,036,430,373 litres or 27,497,070 litres per day on average.

As prescribed by the PTTW, during the peak demand period of May to September the permitted average daily water taking for the Yonge Street Aquifer is limited to 67,200,000 litres per day with a maximum withdrawal limit of 87,656,000. In 2009, the recorded average daily water taking was 28,673,725 litres per day with a maximum withdrawal of 47,276,688, below the limit prescribed in the PTTW.

As prescribed by the PTTW, the annual average daily water for the Yonge Street Aquifer is limited to 42,000,000 litres per day. In 2009, the recorded annual average daily water taking was 27,497,070 litres per day, below the limit prescribed in the PTTW.

The limits prescribed by the PTTW for the Yonge Street Aquifer during the Peak Demand Period are presented in Table 37 and 38.

TABLE 37: Permitted and Actual Peak Demand Maximum Daily Withdrawal from the Yonge Street Aquifer for May 1 – September 30, 2009

Location	Permitted Maximum Daily Withdrawal May – September (Litres)	Actual Maximum Daily Withdrawal May – September (Litres)	Percentage of Permitted Maximum Daily Withdrawal During Peak Day
YSA	87,656,000	47,276,688 – September 23, 2009	53.9%

TABLE 38: Permitted and Actual Peak Demand Average Daily Withdrawal from the Yonge Street Aquifer for May 1 – September 30, 2009

Location	Permitted Average Daily Withdrawal May – September (Litres)	Actual Average Daily Withdrawal May – September (Litres)	Percentage of Permitted Average Daily Withdrawal During Peak
YSA	67,200,000	28,673,725	42.7%

TABLE 39: Permitted and Actual Annual Average Daily Withdrawal from the Yonge Street Aquifer for January 1 – December 31, 2009

Location	Permitted Annual Average Daily Withdrawal (Litres)	Actual Annual Average Daily Withdrawal (Litres)	Percentage of Permitted Annual Average Daily Withdrawal
YSA	42,000,000	27,497,070	65.5%

2.14 York Water System

York Region operates a water supply system to service the Town of Markham, the Town of Richmond Hill, the City of Vaughan, and parts of the Town of Aurora and Newmarket. The York Water System is classified as a 'Large Municipal System receiving water from a Large Municipal System'. It distributes water supplied from the City of Toronto and the Regional Municipality of Peel to the noted area municipalities. As such, it does not have a requirement for a PTTW. Although there is a Certificate of Approvals (C of A) issued by the MOE for the operation of the York Water System; the amount of water withdrawn for the system is limited to the amount set within the agreements between York Region, Region of Peel, and the City of Toronto.

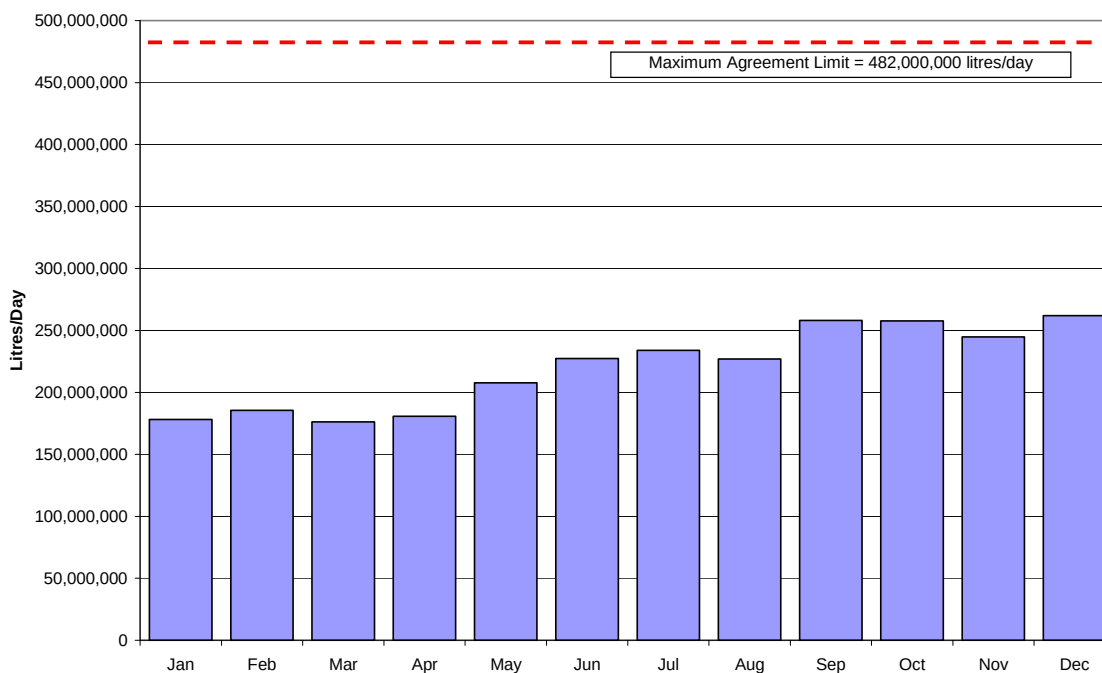
2.14.1 Toronto Water Supplied to York Region

The agreements between the City of Toronto and York Region (Toronto/York Water Supply Agreement) allows for a daily maximum of 482,000,000 litres per day or 482 megalitres per day in 2009.

The total volume of water supplied from Toronto to the York Water System for the reporting period of January 1 – December 31, 2009 was 219,951,083 litres per day. The system operated at 45.6% of the maximum withdrawal limit established in the operating agreement.

The total water supplied by Toronto to the York Water System monthly flow rates are presented in Figure 80.

Figure 80: Toronto Water Supply Daily Average Flow 2009



2.14.2 Peel Water Supplied to York Region

The agreement between the Region of Peel and York Region (Peel/York Water Supply Agreement) allows for the daily maximum of 89,697,000 litres per day or 89 megalitres per day in 2009.

The total volume of water supplied from Peel to the York Water System for the reporting period of January 1 – December 31, 2009 was 59,827,333 litres per day. The system operated at 66.7% of the maximum withdrawal limit established in the operating agreement.

The total water supplied by Peel to the York Water System monthly flow rates are presented in Figure 81.

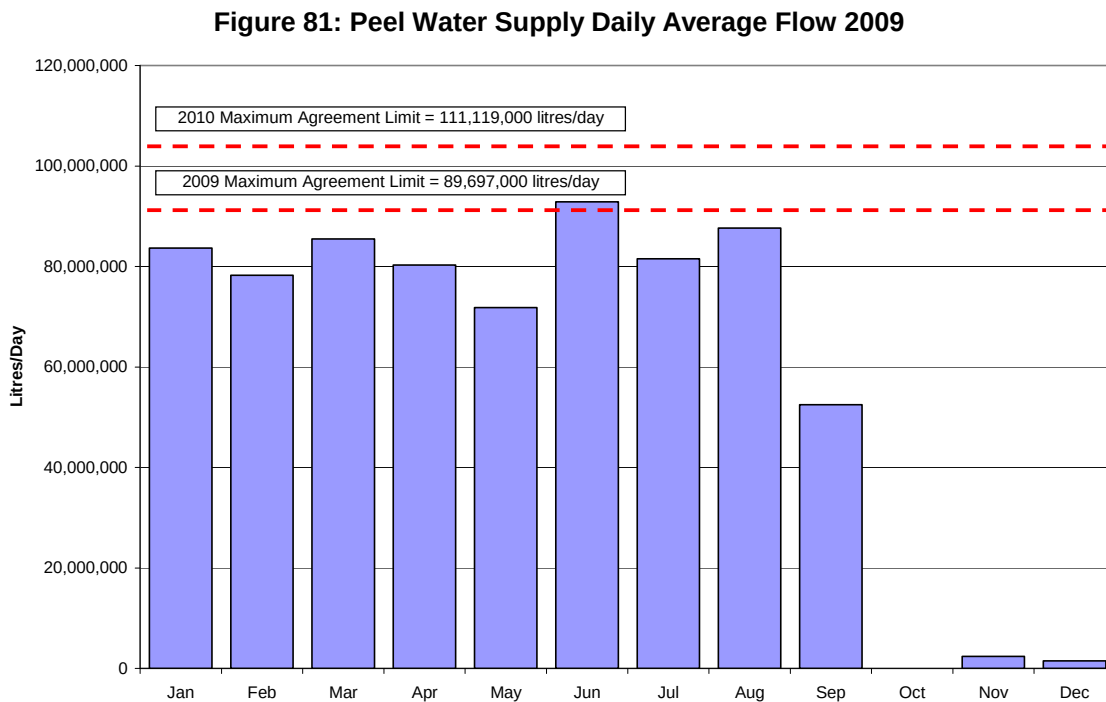


Figure 81 shows additional water was supplied above the maximum permitted withdrawal limit as prescribed in the operating agreement for the month of June 2009. Operating above the maximum permitted withdrawal limit is acceptable and is not classified as a regulatory exceedence as prescribed in the operating agreement when agreed upon by both York Region and the Region of Peel.

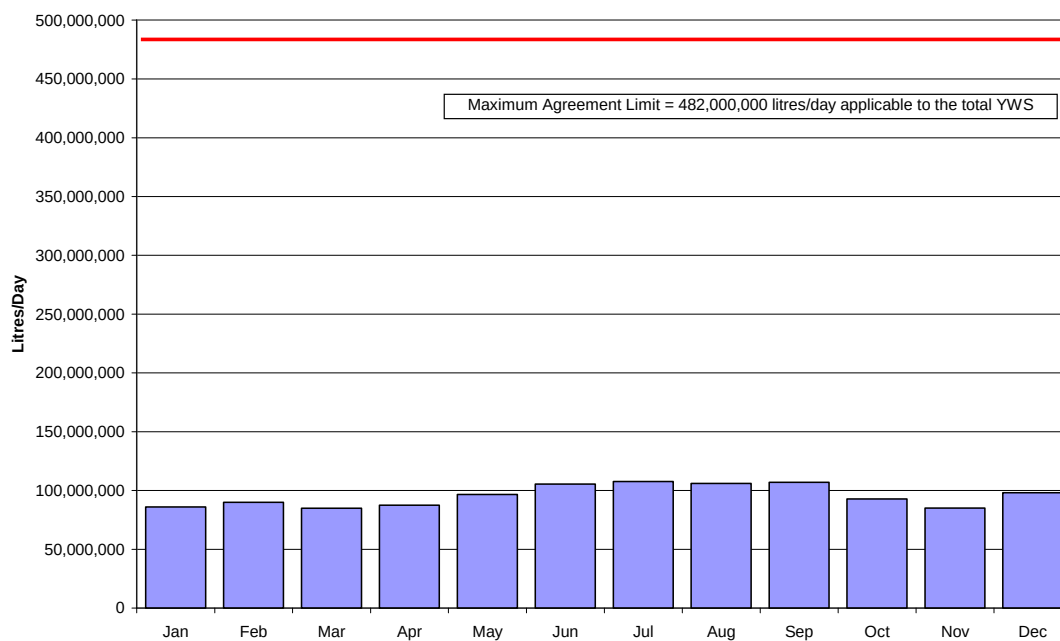
Figure 81 shows a reduced monthly average flow recorded for the month of October, November and December 2009. This reduction in flow was due to a water main break that occurred on September 14, 2009 along the Peel feeder main that supplies water to the Maple Reservoir and York Water System. The main break was isolated and additional flow from the Toronto Water Supply was redirected. Contractors were retained to locate

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and repair the break and re-establish the connection to the Peel Water Supply. Repairs are currently underway and scheduled to be completed by 2010.

The monthly flow rates for each municipality served by the York Water System are presented in Figures 82 through 85.

Figure 82: Markham Monthly Average Flow 2009



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Figure 83: Richmond Hill Monthly Average Flow 2009

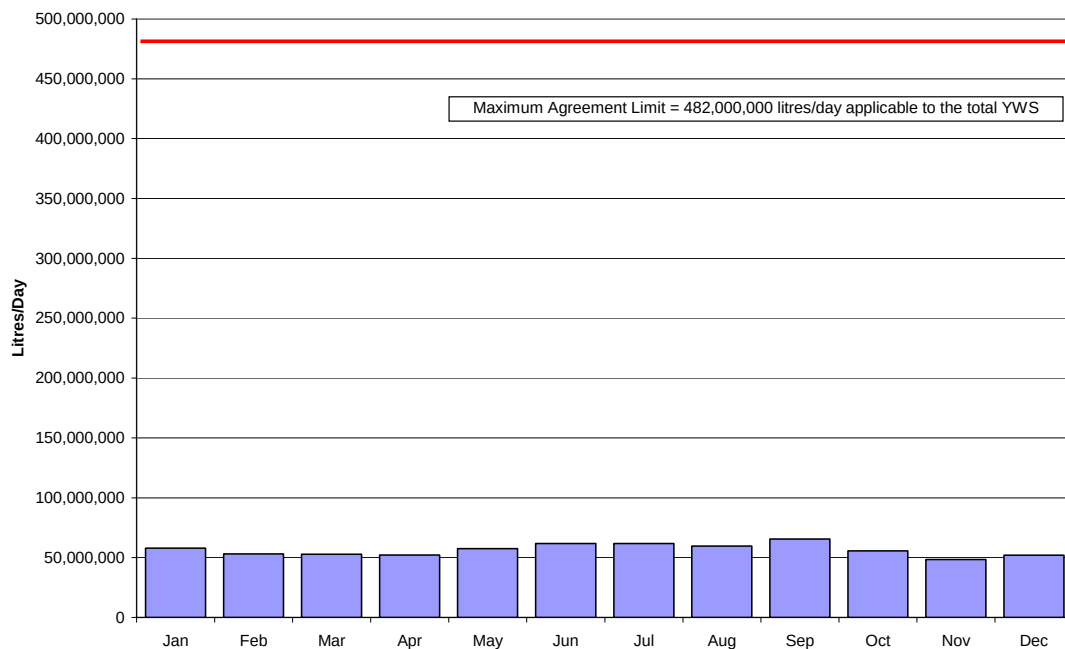


Figure 84: Vaughan Monthly Average Flow 2009

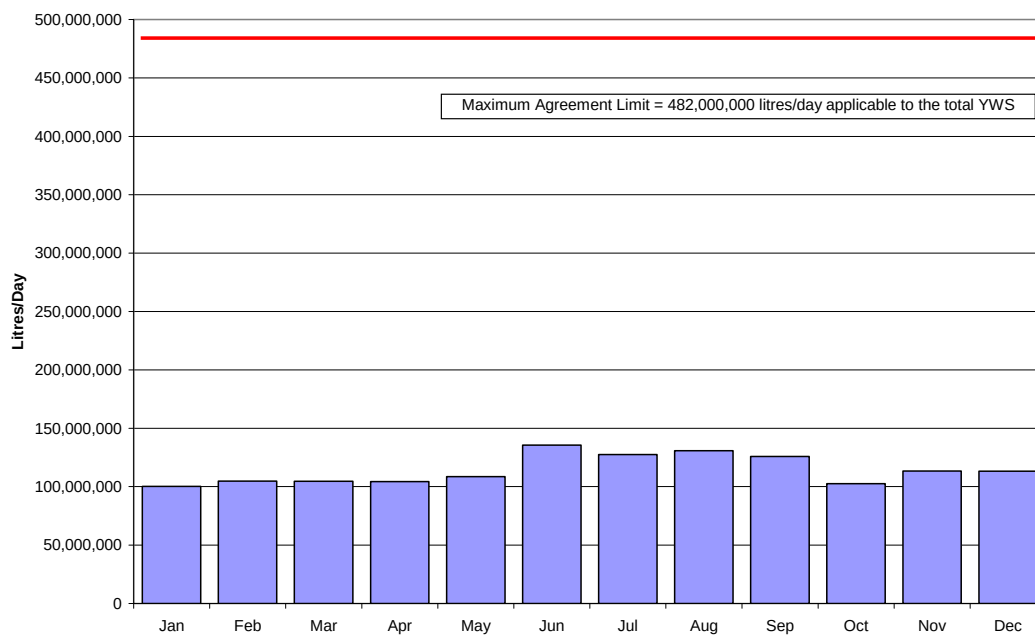
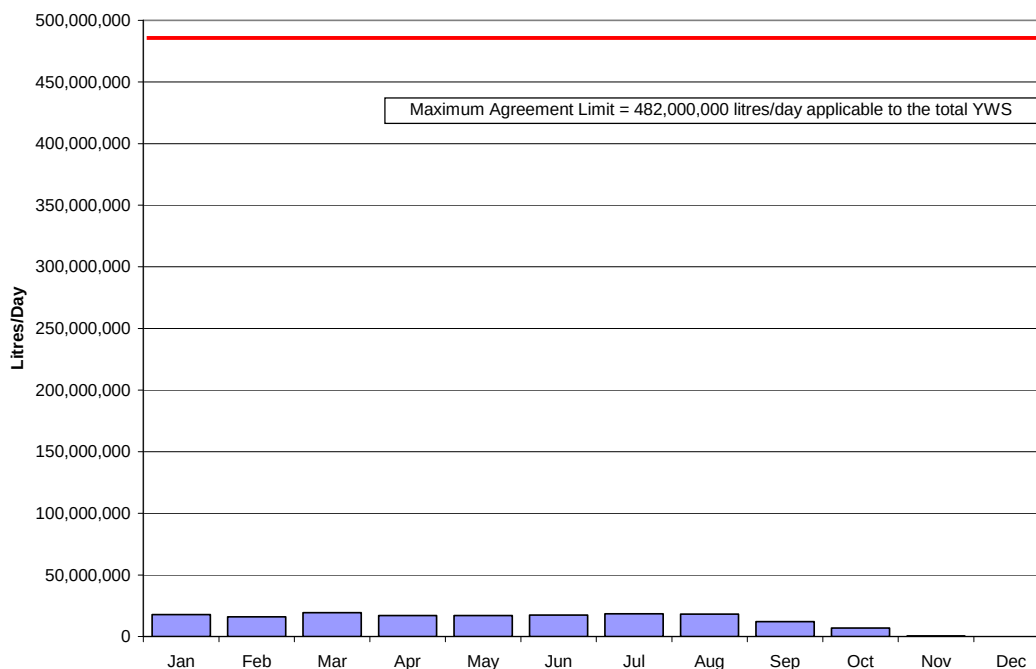


Figure 85: Aurora Monthly Average Flow 2009



The 'Daily Instantaneous Peak Flow (litres)' for January 1- December 31, 2009 is not reported for the York Water System, considering flow is dependant on the demand and restricted only by the maximum withdrawal limit established in the Peel/York Water Supply Agreement and not a PTTW.