

Drinking Water Systems



SUMMARY REPORTS 2006

2006 Summary Report

Toronto (R. C. Harris) Water Treatment Plant

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March 15, 2007

1.0 General Overview

Toronto Water treats, transmits, stores and distributes potable (drinkable) water to all industrial, commercial and household water users in the City of Toronto. The division also delivers water to the southern portion of the Region of York.

Staff in this area are highly trained and specialized, operating four water treatment plants, two laboratories, 18 pumping stations, 10 major ground level storage reservoirs and 4 elevated storage tanks. Staff maintains about 510 kilometres of trunk watermains that supply the water reservoirs and over 5,000 kilometres of local distribution mains. Policies and practices adopted by the section help the unit to manage significant issues and challenges, including meeting water demands throughout the year, complying with provincial regulations and working responsibly to protect the environment and local water bodies.

This Summary Report is issued by Toronto Water under Schedule 22-2, O. Reg. 170/03 for the R.C. Harris Water Treatment Plant. The report covers the period from January 1, 2006 to December 31, 2006 except where stated otherwise.

2.0 System Approval

A Certificate of Approval (C of A) was provided for the R.C. Harris Water Treatment Plant by the Ministry of the Environment (MOE) on April 24, 2006 and designated as “Amended Certificate of Approval Municipal Drinking Water Systems Number 5219-6ARM2W”.

The R.C. Harris Water Treatment Plant is designated a Class 4 Water Treatment Facility (Certificate No. 445) and is referenced as Drinking Water System Number 220002262 (MOE).

The current Permit to Take Water is designated by MOE Reference Number 91-P-3040.

3.0 Site Inspections

The Ministry of the Environment (MOE) has implemented a rigorous and comprehensive Province-wide approach for the inspection of water systems that focuses on the source, treatment and distribution components as well as water system management practices.

The primary focus of such inspections has been to confirm compliance with the Provincial legislation and control documents, as well as conformance with MOE drinking water-related policies for the inspection period.

During 2006, the MOE conducted two (2) site inspection of the plant on Feb 20, 2006 and Nov 21, 2006.

Specifically, such inspection included a review and assessment of operating practices in relation to the following documents:

- Safe Drinking Water Act, 2002
- Drinking Water Systems Regulation (O. Reg. 170/03)
- Ontario Drinking Water Quality Standards (O. Reg. 169/03)
- Operator Certification Regulation (O. Reg. 128/04)
- Certificates of Approval
- Permit to Take Water
- Director's Orders and/or Provincial Officer's Orders (if any)
- A Review of previous Ministry Inspection Reports
- Engineer's Reports dated May 30, 2001

In all cases, there were no exceedances of health-related parameters for the MOE audit samples of the treated water.

4.0 Compliance with Terms and Conditions of the Amended Certificate of Approval and Any Other Orders

Plant production was fully compliant with the Permit to Take Water and at no time during the year 2006 did Raw Water flows exceed the maximum values stipulated in the Permit to Take Water.

Water production rates at the R.C. Harris Water Treatment Plant were fully compliant with the Amended Certificate of Approval.

All plant production fully conformed to the "Procedure for Disinfection of Drinking Water in Ontario" as adopted by reference by O. Reg. 170/03. Routine operation and maintenance on all critical process equipment was carried out and flow meter calibrations were completed in a satisfactory manner.

All recommendations contained in the 2001 Engineer's Report for the R.C. Harris Plant have been addressed and there are no outstanding issues.

5.0 Non-Compliance with Terms and Conditions of the Amended Certificate of Approval

There were no incidences of non-compliance with the Terms and Conditions of the Amended Certificates of Approval for the plant.

6.0 Summary – Water Production

Monthly Average Filtered Water Flows for 2006

Month	Average Flow ML/d*
January	533
February	550
March	514
April	527
May	542
June	541
July	531
August	533
September	528
October	522
November	527
December	230

* ML/d – Million Litres per day

Maximum Daily Flow, Daily Instantaneous Peak Flows and Capacity Assessment

Parameter	Value
Average Daily Flow (ML/day)	524
Rated Production Capacity (ML/day)	950
Maximum Day Flow (ML/day) June 8th	763
% Maximum Daily Flow/Rated Production Capacity	80.3%

7.0 Summary of Flows Exceeding Amended Certificate of Approval Requirements

There were no instances of treated water flows exceeding the rated capacity as stated in the Amended Certificates of Approval for the RC Harris Water Treatment Plant in 2006

8.0 City of Toronto Endorsement of Summary Report

This Summary Report has been signed off by Lou Di Gironimo, General Manager, Toronto Water on behalf of the City of Toronto Council.

A copy of this report has been forwarded to the members of the City Council as per regulatory requirements. Tabling of the Summary Report to City Council has been scheduled for the next available council meeting in 2007 as per regulatory requirements.

9.0 Facility Contacts

While all efforts have been made to provide the required information in the proper format and degree of detail, it is acknowledged that additional information and/or detail may be required.

Should you require any additional information, you may contact Ron Brilliant, Plant Manager at (416) 392-8272 or by e-mail (rbrillia@toronto.ca) for any further assistance.

Additional inquiries on a Water Treatment & Supply sectional basis (all treatment facilities) can be referred to Patrick Newland, Director – Water Treatment & Supply at (416) 392-8222.

2006 Summary Report

Toronto (R. L. Clark) Water Treatment Plant

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March 28, 2007

1.0 General Overview

Toronto Water treats, transmits, stores and distributes potable (drinkable) water to all industrial, commercial and household water users in the City of Toronto. The division also delivers water to the southern portion of the Region of York.

Staff in this area are highly trained and specialized, operating four water treatment plants, two laboratories, 18 pumping stations, 10 major ground level storage reservoirs and 4 elevated storage tanks. Staff maintains about 510 kilometres of trunk watermains that supply the water reservoirs and over 5,000 kilometres of local distribution mains. Policies and practices adopted by the section help the unit to manage significant issues and challenges, including meeting water demands throughout the year, complying with provincial regulations and working responsibly to protect the environment and local water bodies.

This Summary Report is issued by Toronto Water under Schedule 22-2, O. Reg. 170/03 for the R.L. Clark Water Treatment Plant. The report covers the period from January 1, 2006 to December 31, 2006 except where stated otherwise.

2.0 System Approval

A Certificate of Approval was provided for the R.L. Clark Water Treatment Plant by the Ministry of the Environment (MOE) on April 20, 2006 (correspondence by MOE Reference No. 2271-69ASGK) and designated as “Amended Certificate of Approval Municipal Drinking Water Systems Number 2561-6FRQJF”.

The R.L. Clark Water Treatment Plant is designated a Class 4 Water Treatment Facility (Certificate No. 444) and is referenced as Drinking Water System Number 220002253 (MOE).

The current Permit to Take Water is designated by MOE Reference Number 91-P-3042.

3.0 Site Inspections

The Ministry of the Environment (MOE) has implemented a rigorous and comprehensive Province-wide approach for the inspection of water systems that focuses on the source, treatment and distribution components as well as water system management practices.

The primary focus of such inspections has been to confirm compliance with the provincial legislation and control documents, as well as conformance with MOE drinking water-related policies for the inspection period.

During 2006, the MOE conducted an announced site inspection of the plant on February 8, 2006.

Specifically, such inspection included a review and assessment of operating practices in relation to the following documents:

- Safe Drinking Water Act, 2002
- Drinking Water Systems Regulation (O. Reg. 170/03)
- Ontario Drinking Water Quality Standards (O. Reg. 169/03)
- Operator Certification Regulation (O. Reg. 128/04)
- Certificates of Approval
- Permit to Take Water
- Director's Orders and/or Provincial Officer's Orders (if any)
- A Review of previous Ministry Inspection Reports
- Engineer's Reports dated May 30, 2001

In all cases, there were no exceedances of health-related parameters for the MOE audit samples of the treated water. The MOE further acknowledged City's communication efforts with the consumers by maintaining a very extensive public website providing comprehensive information about the City's water services.

4.0 Compliance with Terms and Conditions of the Amended Certificates of Approval and Any Other Orders

Plant production was fully compliant with the Permit to Take Water and at no time during the year 2006 did Raw Water flows exceed the maximum values stipulated in the Permit to Take Water.

Water production at the R.L. Clark Water Treatment Plant was fully compliant with the amended Certificate of Approval.

All plant production fully conformed to the "Procedure for Disinfection of Drinking Water in Ontario" as adopted by reference by O. Reg. 170/03. Routine operation and maintenance on all critical process equipment was carried out and flow meter calibrations were completed in a satisfactory manner.

5.0 Non-Compliance with Terms and Conditions of the Amended Certificates of Approval

Resulting from recent upgrades to process equipment and process control system improvements, there is deemed a requirement to update operations and maintenance manuals in the areas of continuing plant operations in the event of equipment and process automation failures. This matter is being addressed and resolved as a follow-up item from a recent MOE plant inspection.

6.0 Summary – Water Production

Monthly Average Treated Water Flows for 2006

Month	Average Flow ML/d*
January	343
February	183
March	378
April	335
May	372
June	442
July	428
August	446
September	390
October	263
November	276
December	394

* ML/d – Million Litres per day

Maximum Daily Flow and Daily Instantaneous Peak Flows

Parameter	Value
Average Daily Flow (ML/day)	354
Rated Production Capacity (ML/day)	615
Maximum Day Flow (ML/day)	560
% Maximum Daily Flow/Rated Production Capacity	91.1%

7.0 Summary of Flows Exceeding Amended Certificates of Approval Requirements

There were no instances of treated water flows exceeding the rated capacity as stated in the amended Certificates of Approval for the R.L. Clark Water Treatment Plant in 2006.

8.0 City of Toronto Endorsement of Summary Report

This Summary Report has been signed off by Lou Di Gironimo, General Manager, Toronto Water on behalf of the City of Toronto Council.

A copy of this report has been forwarded to the members of the City Council as per regulatory requirements. Tabling of the Summary Report to City Council has been scheduled for the next available council meeting in 2007.

9.0 Facility Contacts

While all efforts have been made to provide the required information in the proper format and degree of detail, it is acknowledged that additional information and/or detail may be required.

Should you require any additional information, you may contact Mauro Fabbro, Plant Manager at (416) 392-8837 or by e-mail (mfabbro@toronto.ca) for any further assistance.

Additional inquiries on a Water Treatment & Supply sectional basis (all treatment facilities) can be referred to Patrick Newland, Director – Water Treatment & Supply at (416) 392-8222.

2006 Summary Report Toronto (F.J. Horgan) Water Treatment Plant

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March 27, 2006

1.0 General Overview

Toronto Water treats, transmits, stores and distributes potable (drinkable) water to all industrial, commercial and household water users in the City of Toronto. The division also delivers water to the southern portion of the Region of York.

Staff in this area are highly trained and specialized, operating four water treatment plants, two laboratories, 18 pumping stations, 10 major ground level storage reservoirs and 4 elevated storage tanks. Staff maintains about 510 kilometres of trunk watermains that supply the water reservoirs and over 5,000 kilometres of local distribution mains. Policies and practices adopted by the section help the unit to manage significant issues and challenges, including meeting water demands throughout the year, complying with provincial regulations and working responsibly to protect the environment and local water bodies.

This Summary Report is issued by Toronto Water under Schedule 22-2, O. Reg. 170/03 for the F.J. Horgan Water Treatment Plant. The report covers the period from January 1, 2006 to December 31, 2006 except where stated otherwise.

2.0 System Approval

A Consolidated Certificate of Approval (CC of A) was provided for the F.J. Horgan Water Treatment Plant by the Ministry of the Environment (MOE) on July 18, 2002 (correspondence by MOE Reference No. 6811-59NQTM) and designated as “Amended Certificate of Approval Municipal and Private Water Works Number 6854-5ALGWQ”.

The F.J. Horgan Water Treatment Plant is designated a Class 4 Water Treatment Facility (Certificate No. 446) and is referenced as Drinking Water System Number 220004536 (MOE).

The current Permit to Take Water is designated by MOE Reference Number 91-P-3039.

3.0 Site Inspections

The Ministry of the Environment (MOE) has implemented a rigorous and comprehensive Province-wide approach for the inspection of water systems that focuses on the source, treatment and distribution components as well as water system management practices.

The primary focus of such inspections has been to confirm compliance with the Provincial legislation and control documents, as well as conformance with MOE drinking water-related policies for the inspection period.

The MOE conducted plant one (1) plant inspection of the Horgan Water Treatment Plant during 2006. The announced site inspection was carried out on October 10, 11, 31, November 1 and 2, 2006.

Specifically, such inspection included a review and assessment of operating practices in relation to the following documents:

- Safe Drinking Water Act, 2002
- Drinking Water Systems Regulation (O. Reg. 170/03)
- Ontario Drinking Water Quality Standards (O. Reg. 169/03)
- Operator Certification Regulation (O. Reg. 128/04)
- Certificates of Approval
- Permit to Take Water
- Director's Orders and/or Provincial Officer's Orders (if any)
- A Review of previous Ministry Inspection Reports
- Engineer's Reports dated May 30, 2001

In all cases, there were no exceedances of health-related parameters for the MOE audit samples of the treated water.

4.0 Compliance with Terms and Conditions of the Amended Certificate of Approval and Any Other Orders

Plant production was fully compliant with the Permit to Take Water and at no time during the year 2006 did Raw Water flows exceed the maximum values stipulated in the Permit to Take Water.

Plant production rates were fully compliant with the Amended Certificate of Approval and at no time during the year 2006 did Treated Water production flows out of the facility exceed the maximum values stipulated in the Amended Certificate of Approval. Treated Water flow interpretation has been defined by the MOE as “gross production” by verbal notification on January 30, 2004.

Wastewater treatment facilities were operated on a continuous basis. The average annual wastewater quality was in compliance with requirements cited in the Amended Certificate of Approval. Annual average Total Suspended Solids of the clarified wastewater was 5.58 mg/L.

All plant production fully conformed to the “Procedure for Disinfection of Drinking Water in Ontario” as adopted by reference by O. Reg. 170/03. Routine operation and maintenance on all critical process equipment was carried out and flow meter calibrations were completed in a satisfactory manner.

All recommendations contained in the 2001 Engineer's Report for the F.J. Horgan Plant have been addressed and there are no outstanding issues.

5.0 Non-Compliance with Terms and Conditions of the Amended Certificate of Approval

As a result of the on-going maintenance, rehabilitation and replacement of process equipment, along with process control system improvements, minor discrepancies were observed between the description of some plant equipment as they appear in the Certificate of Approval versus the actual installed plant equipment. An application for the amendment of the existing Certificate of Approval was submitted to the MOE on January 12, 2007. This is being addressed and resolved through an amendment process with the MOE.

6.0 Summary – Water Production

Monthly Average Filtered Water Flows for 2006

Month	Average Flow ML/d*
January	286
February	357
March	252
April	329
May	346
June	423
July	425
August	418
September	364
October	360
November	383
December	385

* ML/d – Million Litres per day

Maximum Daily Flow and Capacity Assessment

Parameter	Value
Average Daily Flow (ML/day)	395
Maximum Day Flow (ML/day)	538
Rated Capacity (ML/day)	570
% Maximum Day/Rated Capacity	94.4%

7.0 Summary of Flows Exceeding Amended Certificate of Approval Requirements

There were no instances of treated water flows exceeding the rated capacity as stated in the Amended Certificate of Approval for the Horgan Water Treatment Plant in 2006.

8.0 City of Toronto Endorsement of Summary Report

This Summary Report has been signed off by Lou Di Gironimo, General Manager, Toronto Water on behalf of the City of Toronto Council.

A copy of this report has been forwarded to the members of the City Council as per regulatory requirements. Tabling of the Summary Report to City Council has been scheduled for the next available council meeting in 2007 as per regulatory requirements.

9.0 Facility Contacts

While all efforts have been made to provide the required information in the proper format and degree of detail, it is acknowledged that additional information and/or detail may be required.

Should you require any additional information please do not hesitate to contact Ian Chin, Plant Manager (Acting) at 416 392-2572 or by e-mail (ichin@toronto.ca) for any further assistance.

Additional inquiries on a Water Treatment & Supply sectional basis (all treatment facilities) can be referred to Patrick Newland, Director - Water Treatment & Supply at (416) 392-8220.

2006 Summary Report

Toronto (Island) Water Treatment Plant

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March 15, 2007

1.0 General Overview

Toronto Water treats, transmits, stores and distributes potable (drinkable) water to all industrial, commercial and household water users in the City of Toronto. The division also delivers water to the southern portion of the Region of York.

Staff in this area are highly trained and specialized, operating four water treatment plants, two laboratories, 18 pumping stations, 10 major ground level storage reservoirs and 4 elevated storage tanks. Staff maintains about 510 kilometres of trunk watermains that supply the water reservoirs and over 5,000 kilometres of local distribution mains. Policies and practices adopted by the section help the unit to manage significant issues and challenges, including meeting water demands throughout the year, complying with provincial regulations and working responsibly to protect the environment and local water bodies.

This Summary Report is issued by Toronto Water under Schedule 22-2, O. Reg. 170/03 for the Island Water Treatment Plant. The report covers the period from January 1, 2006 to December 31, 2006 except where stated otherwise.

2.0 System Approval

A Certificate of Approval (C of A) was provided for the Island Water Treatment Plant by the Ministry of the Environment (MOE) on August 13, 2003 (correspondence by MOE Reference No. 1123-5LVHHZ) and designated as “Certificate of Approval Municipal Drinking Water Systems Number 2646-5PPKLV”.

The Island Water Treatment Plant is designated a Class 4 Water Treatment Facility (Certificate No. 443) and is referenced as Drinking Water System Number 220002244 (MOE).

The current Permit to Take Water is designated by MOE Reference Number 91-P-3041.

3.0 Site Inspections

The Ministry of the Environment (MOE) has implemented a rigorous and comprehensive Province-wide approach for the inspection of water systems that focuses on the source, treatment and distribution components as well as water system management practices.

The primary focus of such inspections has been to confirm compliance with the Provincial legislation and control documents, as well as conformance with MOE drinking water-related policies for the inspection period.

The MOE conducted one (1) plant inspections of the Island Water Treatment Plant during 2006. The announced site inspection was carried out on June 20, 2006.

Specifically, such inspection included a review and assessment of operating practices in relation to the following documents:

- Safe Drinking Water Act, 2002
- Drinking Water Systems Regulation (O. Reg. 170/03)
- Ontario Drinking Water Quality Standards (O. Reg. 169/03)
- Operator Certification Regulation (O. Reg. 128/04)
- Certificates of Approval
- Permit to Take Water
- Director's Orders and/or Provincial Officer's Orders (if any)
- A Review of previous Ministry Inspection Reports
- Engineer's Reports dated May 30, 2001

In all cases, there were no exceedances of health-related parameters for the MOE audit samples of the treated water.

4.0 Compliance with Terms and Conditions of the Certificate of Approval and Any Other Orders

Plant production was fully compliant with the Permit to Take Water and at no time during the year 2006 did Raw Water flows exceed the maximum values stipulated in the Permit to Take Water.

Water production rates at the Island Water Treatment Plant were fully compliant with the Certificate of Approval.

All plant production fully conformed to the "Procedure for Disinfection of Drinking Water in Ontario" as adopted by reference by O. Reg. 170/03. Routine operation and maintenance on all critical process equipment was carried out and flow meter calibrations were completed in a satisfactory manner.

5.0 Non-Compliance with Terms and Conditions of the Certificate of Approval

With respect to the upgrading requirements outlined in the Certificate of Approval for the Island Plant, all recommendations contained in the 2001 Engineer's Report have been completed with the following exceptions:

"Upgrading firm low lift capacity to meet the combined rate of plant rating plus process wasting"

The terms and conditions of the Energy Transfer Agreement with Enwave District Energy Limited for the Deep Lake Water Cooling Project clearly identify this item as Enwave's responsibility. The City of Toronto and Enwave are currently in the process of

addressing this requirement. An application to amend the date of completion of this item to June 30, 2008 has been submitted to the MOE on October 30, 2006.

Another outstanding item in the Engineer's Report, 2001 pertains to the installation of backflow preventers on screen wash lines. Toronto Water has reviewed this issue and we are of the opinion that backflow preventers are not required in this case. Following on-going dialogue with the Ministry, we have submitted a formal letter dated March 30, 2006 signed by a Professional Engineer corroborating our position to the MOE Approvals Branch.

As a result of the on-going maintenance, rehabilitation and replacement of process equipment, along with process control system improvements, some discrepancies were observed between the descriptions of some plant equipment as they appear in the Certificate of Approval versus the actual installed plant equipment. An application to amend C of A 2646-5PPPCLV has been submitted to the MOE on October 30, 2006 to address these issues.

The process wastewater discharge quality did not always comply with the requirements established in the Certificate of Approval as the monthly average for Total Suspended Solids exceeded 25 mg/L in January and March 2006. The City of Toronto is currently engaged in upgrading the wastewater treatment facility at the Island Plant. Work for this project commenced in the fall of 2006 and the completion is targeted for the end of 2007.

6.0 Summary – Water Production

Monthly Average Filtered Water Flows for 2006

Month	Average Flow ML/d
Jan	145
Feb	182
Mar	160
Apr	174
May	180
June	226
July	259
Aug	291
Sep	233
Oct	230
Nov	185
Dec	259

* ML/d – Million Litres per day

Maximum Daily Flow and Capacity Assessment

Parameter	Value
Average Daily Flow (ML/d)	219
Maximum Daily Flow (ML/d) On Dec. 7 2006	390
Rated Capacity (ML/d)	410
% Max Day / Rated Capacity	95.1%

7.0 Summary of Flows Exceeding Certificate of Approval Requirements

There were no instances of treated water flows exceeding the rated capacity as stated in the Consolidated Certificates of Approval for the Island Water Treatment Plant in 2006.

8.0 City of Toronto Endorsement of Summary Report

This Summary Report has been signed off by Lou Di Gironimo, General Manager, Toronto Water on behalf of the City of Toronto Council.

A copy of this report has been forwarded to the members of the City Council as per regulatory requirements. Tabling of the Summary Report to City Council has been scheduled for the next available council meeting in 2007 as per regulatory requirements.

9.0 Facility Contacts

While all efforts have been made to provide the required information in the proper format and degree of detail, it is acknowledged that additional information and/or detail may be required.

Should you require any additional information, you may contact Ron Brilliant, Plant Manager at (416) 392-8272 or by e-mail (rbrillia@toronto.ca) for any further assistance.

Additional inquiries on a Water Treatment & Supply sectional basis (all treatment facilities) can be referred to Patrick Newland, Director – Water Treatment & Supply at (416) 392-8222.

Drinking Water Systems

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