COMPLIANCE INSPECTION REPORT

WINCHESTER

WATER TREATMENT PLANT

COMMUNAL DRINKING WATER

REPORT PREPARED BY THE CORNWALL OFFICE OF THE MINISTRY OF THE ENVIRONMENT, EASTERN REGION

Inspected By: Shannon Hamilton-Browne
Inspection: October 30, 2001

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Ontario

MINISTRY OF THE ENVIRONMENT COMMUNAL DRINKING WATER INSPECTION REPORT

INSPECTION ID#: 719

COMPANY/MUNICIPALITY: North Dundas Township

MAILING ADDRESS: P.O. Box 489, 547 St. Lawrence St., Winchester, ON K0C 2K0

INSPECTION SITE ADDRESS: Winchester Water Treatment Plant
Winchester Village

Winchester, ON
K0C 2K0

CONTACT NAME: Blair Henderson **TITLE:** Operations Manager

CONTACT TELEPHONE: 613-448-3098 **FAX:** 613-448-1616

INSPECTION DATE: 2001/10/30

DATE OF LAST INSPECTION: 2000/08/23

WATER WORKS NUMBER: 210000586

OPERATING AUTHORITY: Ontario Clean Water Agency

OP. AUTHORITY ADDRESS: 5 Industrial Drive

OP. AUTHORITY TOWN/CITY: Chesterville

OP. AUTHORITY POSTAL CODE: K0C 1H0

OP. AUTHORITY CONTACT NAME: Blair Henderson **TITLE:** Operations Manager, Chesterville Hub

OP. AUTHORITY TELEPHONE: (613) 448-3098 **FAX:** (613) 448-1616

1.0 INTRODUCTION

On October 30, 2001, Ministry of the Environment staff visited the Winchester Water Treatment Plant for the purpose of performing a compliance inspection.

The Sewage and Water Inspections Program (SWIP) was established in 1990 as a means of ensuring that there are regular assessments of compliance at municipal sewage and water treatment plants. Compliance is measured against requirements stipulated in Certificates of Approval, Ontario Regulation 435/93, Permits To Take Water, the Ontario Drinking Water Standards (ODWS), any existing Orders, Ontario Regulation 459/00, and MOE Guidelines and Procedures.

SWIP evaluations primarily focus on issues that have a potential for adversely impacting human health or the environment. Findings cited in inspection reports should not be interpreted as being all inclusive assessments of compliance with applicable Acts, Regulations, and site-specific authorizing and control documents.

The purpose of this report is to assess the owner and operating authority's compliance with Certificates of Approval, Permit To Take Water, and other legal instruments issued for the construction, maintenance and operation of the water treatment plant. The operating procedures will also be graded against Ministry of the Environment Guidelines, the revised Ontario Drinking Water Standards (ODWS), Ontario Regulation 459/00 (Drinking Water Protection Regulation), and Ontario Regulation 435/93 (Plant and Operator Licensing).

The scope of this inspection is on the water treatment plant, its processes, related records and equipment, and not on the distribution system. The compliance inspection included a physical inspection of the plant and a document review for this compliance inspection period of August 2000 to October 2001.

The following is a list of Certificates of Approval in chronological order pertaining to the Winchester Water Treatment Plant. The list may not be complete. A copy of the draft consolidated Certificate of Approval (MOE Reference No. 2338-4VNRTS) is found in Appendix A.

Certificate of Approval List:
7-0157-96-006

2.0 INSPECTION OBSERVATIONS

2.1 SYSTEM DESCRIPTION

The Winchester Water Treatment Plant is owned by the Township of North Dundas, and operated by the Ontario Clean Water Agency (OCWA). The Winchester Water Treatment Plant supplies the Village of Winchester, servicing a population of approximately 2,275. Water is supplied by a five-well system, and is rated at a maximum daily flow of 4,535 m3. Each well system has a separate disinfection and pumping facility, and is fed into the distribution system at different locations. The five-well system is comprised of four individual drilled wells, No. 1, No. 4, No. 5 and No. 6, and one well field, No. 7 which contains three individual wells, No. 7a, No. 7b, and No. 7c. Well No. 2 has been plugged and abandoned, and Well No. 3 is no longer connected to the distribution system. However, Well No. 3 is still operational and is used periodically by Parmalat Foods for cooling water. There are backflow preventers located on the Parmalat feedermains to isolate the well from the distribution system.

Water is delivered to the distribution system from the wells mainly through the use of either submersible or turbine pumps. All the pumping is controlled through the control centre located at the OCWA office/garage in the Village.

Sodium hypochlorite (12% solution) is injected at each well for disinfection. The water leaving the pumping station is continuously monitored and recorded for flow, chlorine residual and turbidity. Chlorine residual and turbidity is monitored through a SCADA system, OCWA staff record the readings daily.

Each well consists of the following:

Well No. 1 - equipped with a vertical turbine pump rated at 8.7 L/s with a 152 mm diameter discharge line connected to the well pump header in the pumphouse which includes a flow meter, 480 L capacity sodium hypochlorite solution tank and two chemical metering pumps (one duty, one standby) each with a feed line into the discharge line in the pumphouse, a 21.6 kW diesel engine standby power generator set, and a 200 mm diameter feeder watermain.

Well No. 4 - not in use, was taken offline in August 2000 due to low yield.

Well No. 5 - equipped with new submersible pump with a 152 mm diameter pump header and flow meter, 100 L capacity sodium hypochlorite solution tank and two chemical metering pumps (one duty, one standby) with a feed line into the discharge line in the pumphouse, a diesel engine standby power generator set, and a 152 mm diameter feeder watermain.

Well No. 6 - equipped with submersible pump rated at 8.3 L/s, with a 152 mm diameter discharge line connected to the well pump header in the pumphouse, flow meter, two 480 L capacity sodium hypochlorite solution tanks and two chemical metering pumps (one duty, one standby) with a feed line into the discharge line in the pumphouse, a 54.7 kW diesel engine standby power generator set, and a 200 mm diameter feeder watermain.

Well Nos. 7a, 7b, 7c - three gravel packed wells each equipped with a submersible pump rated at 11.4 L/s with a 152 mm diameter discharge line connected to the well pump header in the pumphouse, flow meter, one 200 L capacity sodium hypochlorite solution tank and two chemical metering pumps (one duty, one standby) with a feed line discharging into each of the well pump headers at the exit from the pumphouse, provisions to use a portable generator, and a 300 mm diameter water transmission line to convey the water supply from the well field to the Village of Winchester storage and distribution system.

2.2 PERMIT TO TAKE WATER ASSESSMENT

PERMIT NUMBERS	SOURCE	RENEWAL DATES	PERMITTED AMOUNT OF TAKING	UNITS
88-P-4090	Ground Water - Well #1	2003/05/30	817,920	Maximum litres/day
86-P-4015	Ground Water - Well #5		555,840	Maximum litres/day
89-P-4049	Ground Water - Well #4	2009/07/31	229,118	Maximum litres/day
88-P-4089	Ground Water - Well #6	2003/06/30	982,080	Maximum litres/day
96-P-4068	Ground Water - Wells 7A, 7B & 7C		1,950,000	Maximum litres/day

Well Nos. 4 and 7c are currently not in use. Well No. 4 has not been in operation since August 2000 due to low yield (21 gal/min.). The operating authority does not plan to abandon this well in order to retain the current hydraulic capacity of the Winchester Water Treatment Plant.

Condition No. 7 of Certificate of Approval No. 7-0157-96-006 stipulates that at all times the total water taking rate shall not exceed 1,350 L/min or 1,950 m3/d from Well Nos. 7a, 7b, 7c. Permit To Take Water Number 96-P-4068 Special Condition No. 12 states that records with respect to the measurement and reporting criteria defined under General Condition 3(d) listed above shall be kept by the Permit Holder at 547 St. Lawrence Street, Winchester, Ontario K0C 2K0 until this Ministry requests them to be submitted or states otherwise. Special Condition No. 13 states that should a water quality or quantity complaint arise from surrounding wells in the area due to this taking it is understood that the contingency plan set forth in a letter from Golder Associates Limited dated February 7, 1996 will be followed. The reason for Special Condition No. 13 is to deal with possible adverse effects of the taking on surrounding wells.

Permit To Take Water Number 89-P-4049 (Well No. 4) Special Condition No. 14 states that records with respect to measurement and reporting criteria defined under General Condition 3(d) shall be kept daily by the Permit Holder at the offices of Township of North Dundas (formerly Village of Winchester), 547 St. Lawrence Street, Winchester, ON, until this Ministry requests them to be submitted or states otherwise.

Special Condition No. 15 states that no water shall be taken under the authority of this Permit after July 31, 2009.

Permit To Take Water Number 86-P-4015 no longer contains an expiry date. Special Condition No. 12 states that records with respect to the measurement and reporting criteria defined under General Condition 3(d) listed above shall be kept by the Permit Holder at 547 St. Lawrence Street, Winchester, Ontario K0C 2K0 until this Ministry requests them to be submitted or states otherwise. The reason for Special Condition 12 is to establish a record of water taking.

Permit To Take Water Number 88-P-4089 Special Condition No. 1 states that measurement and reporting under General Terms and Conditions 2 clauses (b) and (c). Records to be submitted to the Director annually.

The Annual Records of Water Taking for 2000 were submitted by OCWA to the Ministry in February 2001 for all Permits. The records show that the Winchester Water Treatment Plant did not exceed the allowable amount of water taking as permitted by the Permits (refer to Appendix B). As well, the Performance Assessment Report (PAR) for 2000 generated and provided by OCWA, confirms that the allowable maximum amount of taking as permitted by the Permits was not exceeded for any of the wells (refer to Appendix C).

The PAR for the period of January to September 2001, generated and provided by OCWA (see Appendix C), shows that the permitted maximum amount of water taking was not exceeded during this period.

An inspection of the Permit To Take Water Number 88-P-4090 for the Winchester Treatment Plant was conducted by Cynthia Paquette on August 23, 2000. The inspection revealed that OCWA was not reporting water takings in accordance with the Permit. This was an oversight as the Annual Record of Water Taking for the Permit was submitted to the Ministry on March 6, 2000.

As per Special Condition No. 13 of Permit To Take Water Number 96-P-4068 for Well Field No. 7, the first report was completed in April 1998. The municipality has retained the services of Golder and Associates Ltd. to continue the Groundwater Level Monitoring and Analysis Program. OCWA is currently monitoring the water levels in each of the wells at Well Field No. 7.

2.3 CAPACITY ASSESSMENT

ITEM	1998	1999	2000
Avg. Day Flow m^3/day	731	658	1499
Max. Day Flow m^3/day	2428	2698	2231
Rated capacity m^3/day	4535	4535	4535
% (Maximum Day/Rated Capacity)	53.54%	59.49%	49.2%

According to the Certificate of Approval, the Winchester Water Treatment Plant's rated capacity is 4,535 m3/day during the fall, winter, spring, and 4,208 m3/day during the summer. The rated capacity is based on the total maximum water taking allowed by the Permits To Take Water. As indicated in the 2001 Performance Assessment Report (PAR) generated and provided by OCWA, the rated capacity of the plant is 2,324 m3/day. This rated capacity calculation is supplied by OCWA and may not reflect the actual capacity of the plant.

The above table shows that the Winchester Water Treatment Plant was operating at 49% of its rated capacity in 2000. The average day flow (1499 m3/day) for 2000 was much greater than 1999's (658 m3/day). The above information was obtained from the 2000 Performance Assessment Report (PAR) generated and provided by OCWA (refer to Appendix C).

For the period of January to October 2001, the average day flow was 1,768 m3/day, and the maximum day flow was 2,375 m3/day. During this period, the plant was operating at approximately 52% of its rated capacity. This information was obtained from the PAR generated and provided by OCWA (refer to Appendix C).

The most recent calibration of the flow meters for the raw and treated water was performed on August 16, 2000. Refer to Appendix D for the Calibration Records.

Condition No. 8 of Certificate of Approval No. 7-0157-96-006 stipulates that all flow meters shall be calibrated at regular intervals and shall not exceed one year to ensure the accuracy of the flow meters. The flow meter shall provide an accurate reading of the daily quantity of treated water supplied to the distribution system. The flow meters therefore should have been calibrated on or before August 16, 2001.

Condition No. 8 of the Certificate of Approval also stipulates that the owner shall calibrate at regular intervals not exceeding three months the continuous water quality analyzers and indicators with alarm systems which monitor the free chlorine residual in the treated water.

2.4 PLANT TREATMENT REQUIREMENTS

A) SURFACE WATER SOURCE(S)

Does the plant comply with the requirements of Ontario Regulation 459/00 regarding treatment requirements for **surface water?**

N/A

Does the plant provide the following:

Chemically-assisted filtration: N/A
Disinfection: N/A

If the plant does not provide minimum level of treatment for **surface water** as per Ontario Regulation 459/00 s.5(2), has the owner delivered a written notice to the Director by October 31, 2000 in accordance with Ontario Regulation s.5(5)(b), describing a timetable of actions required to achieve compliance?

N/A

Do records show that water entering the water distribution system has been treated with chlorination (or another treatment that, in the Director's opinion, is as effective as chlorination to achieve disinfection that persists into the distribution system) in accordance with Ontario Regulation 459/00 s.5(3) and any applicable instrument or authorizing document (i.e. Order, Certificate of Approval)?
N/A

B) GROUND WATER SOURCE(S)

Does the plant comply with the requirements of Ontario Regulation 459/00 regarding treatment requirements for **ground water** (i.e. Disinfection) ?
YES

The minimum level of treatment required for a groundwater source is disinfection. The Winchester Water Treatment Plant includes a sodium hypochlorite feed system in each well to disinfect the groundwater by injecting sodium hypochlorite to the raw water at the discharge line. The sodium hypochlorite systems consist of sodium hypochlorite solution storage tank(s) and two chemical metering pumps (one duty, one standby).

Do records show that water entering the water distribution system has been treated with chlorination (or another treatment that, in the Director's opinion, is as effective as chlorination to achieve disinfection that persists into the distribution system) in accordance with Ontario Regulation 459/00 s.5(3) and any applicable instrument or authorizing document (i.e. Order, Certificate of Approval)?
YES

Monthly Process Data Reports for 2000 (summarized in the engineer's report) show that a minimum of 0.2 mg/L free chlorine residual was maintained at all times in the treated water leaving every operational well.

The 15 minute minimum contact time before the water reaches the first consumer is not being met at Well Nos. 1 and 4.

At the time of the inspection, each well's on-line continuous analyzer was showing the following readings of free chlorine residual in the treated water:
- Well No. 1, 1.41 mg/L
- Well No. 5, 1.78 mg/L
- Well No. 7 - 1.69 mg/L

The rounds sheet includes daily readings of the free and total chlorine residuals, flows, and sodium hypochlorite dosage.

The daily rounds sheets, quarterly reports for 2000 and the first three quarters of 2001, and the PARs were reviewed. The records all show that a minimum of 0.2 mg/L of free chlorine residual was maintained at all times leaving the plant and in the distribution system.

If the plant does not provide minimum level of treatment of **ground water** as per Ontario Regulation 459/00 s.5(1), has the owner:

(i) delivered a written notice to the Director by October 31, 2000 in accordance with Ontario Regulation s.5(5)(b), describing a timetable of actions required to achieve compliance or their intention to seek a variance in their Certificate of Approval in accordance with Ontario Regulation 459/00 s.6(2)(b), or

(ii) obtained a variance in their Certificate of Approval in accordance with Ontario Regulation 459/00 s.6(2)(b)?

N/A

2.5 SAMPLING AND ANALYSIS REQUIREMENTS

Does the plant comply with all sampling and analysis requirements in accordance with Ontario Regulation 459/00 s.7 and any applicable Order and Certificate of Approval?

YES

Sampling and analysis requirements for the Winchester Water Treatment Plant are dictated by the Certificate of Approval and Ontario Regulation 459/00.

Condition No. 9 of Certificate of Approval No. 7-0157-96-006 stipulates the monitoring program for Well Nos. 7a, 7b, 7c. Samples of raw water and treated water shall be collected and analyzed for at least the following parameters at the indicated frequency:

Raw Water (at all production wells at groundwater well discharge) - total coliform and E. coli weekly; turbidity, colour, hardness, pH, sodium, iron, manganese, conductivity, chloride, ammonia + ammonium (N), TKN, nitrite, nitrate and DOC.

Treated Water - total coliform and E. coli weekly.

In addition to the above routine sampling program, on-site testing should be performed and results recorded, at the minimum frequency of once a day for total chlorine residual.

Distribution System (most remote point in the system) - total coliform and E. coli weekly.

Once a year, the distribution system samples shall be collected and analyzed for Table 1, Table 3 and Table 4 parameters.

The sampling and analysis requirements for a groundwater source in accordance with Ontario Regulation 459/00 s.7 are:
- microbiological samples must be taken at least once per week from the raw water (from each well) and from the treated water; and a minimum of 8 samples shall be taken monthly in the distribution system, with at least one such sample taken every week.
- turbidity shall be measured using a grab sample once a day.
- free chlorine residual shall be monitored by taking one grab sample per day, and distribution samples at the same frequency and location as required for microbiological sampling.
- fluoride shall be monitored for annually.

In addition, treated water samples are to be collected for Table B (Volatile Organics) once every quarter, with trihalomethanes being collected quarterly in the distribution system at a point reflecting the maximum residence time in the distribution system; Table C (Inorganics) shall be sampled for once every three years, in addition lead shall be sampled annually in the distribution system at a point reflecting the maximum residence time in the

distribution system, and sodium shall be sampled for every five years; nitrates/nitrites shall be sampled for quarterly; and Table D (Pesticides and PCB) once every quarter.

Each well has on-line continuous analyzers to monitor for turbidity and free chlorine residual. Grab samples from the treated water are taken daily for turbidity and chlorine residuals to verify the on-line readings.

The required number of treated water samples are being collected and the results are in compliance with the Ontario Drinking Water Standards. Three (3) to four (4) samples per week for microbiological analyses are collected in the distribution system. This exceeds the minimum requirement of 10 samples per month to be collected in the distribution system (Schedule 2, O. Reg. 459/00).

The flow meter readings, free and total chlorine residuals, turbidity, sodium hypochlorite dosage are recorded daily in the plant logbook.

Free chlorine residual readings are measured from samples collected from the distribution system whenever bacteriological samples are collected.

The Winchester Water Treatment Plant submits their water samples for analysis to Accutest Laboratories, Caduceon Enterprises Inc., Areco Canada, Maxxam Analytics, and the University of Guelph.

The Winchester Water Treatment Plant has complied with all of the sampling and analysis requirements stipulated in the Certificate of Approval and O. Reg. 459/00 s.7.

2.6 WATER QUALITY ASSESSMENT

Specifically with regard to health-related water quality parameters **only**, is the plant meeting the water quality requirements of its Certificate of Approval, Ontario Drinking Water Standards, or an Order or direction?

YES

A review of the microbiological sample results, daily rounds sheets, and the quarterly reports for 2000, and the first three quarters of 2001, revealed that all health-related parameters were below the established limits of the Ontario Drinking Water Standards.

The treated water from Well Nos. 1, 4 and 5 regularly exceeds a concentration of 20 mg/L for sodium. The local Medical Officer of Health was notified by OCWA on October 10, 2001 (refer to Appendix E), so this information may be communicated to local physicians that have patients on sodium restricted diets, as per O. Reg. 459/00.

Well Nos. 7a, 7b and 7c exceeded the operational guideline of 80-100 mg/L for hardness in each of the four quarters in 2000. Hardness is a non health-related parameter.

Well No. 7c exceeded the maximum acceptable concentration of 1.0 NTU for turbidity in July 2000, and was taken off-line shortly after the occurrence.

The 15 minute minimum contact time before the water reaches the first consumer is not being met at Well Nos. 1 and 4. It is not clear yet whether or not any of the wells are under the direct influence of surface water. This must be determined by conducting a hydrogeology investigation, and is addressed in the draft consolidated Certificate of Approval.

2.7 MINISTRY SAMPLE RESULTS

Were Ministry samples collected during the inspection?
YES

Treated water samples were collected during the inspection, as per the "Standardized Sampling During the Performance of SWIP Inspections", May 1997. The chlorine residuals were measured using the Ministry's Hach pocket colorimeter at each of the wells where samples were collected, and showed the following readings:
- Well No. 7, 1.52 mg/L free chlorine and 1.81 mg/L total chlorine;
- Well No. 6, 1.70 mg/L free chlorine and 2.85 mg/L total chlorine;
- Well No. 5, 1.60 mg/L free chlorine and 2.10 mg/L total chlorine;
- Well No. 1, 1.41 mg/L free chlorine and 2.10 mg/L total chlorine.

The Winchester Well No. 1 bacteriological sample bottle broke in transit, and was resampled on November 1, 2001.

Do sample results show compliance with Ontario Drinking Water Standards and any applicable instrument or authorizing document (i.e. Order, Certificate of Approval) for those parameters which were required to be analysed?
YES

Comment:

The treated water samples collected during the inspection were sent to the Ministry's Laboratory Services Branch that same day for analysis. The second bacteriological sample collected from the treated water of Well No. 1 was sent to the lab on November 1, 2001. The sample results were received at the Cornwall Area Office on December 3, 2001, and can be found in the "Lab Results" section of this report and in Appendix F. The sample results confirmed compliance with the Ontario Drinking Water Standards.

2.8 REPORTING REQUIREMENTS

Is the owner complying with reporting requirements of Ontario Regulation 459/00 s.12 (quarterly reports), section 13 (engineer's reports), section 8 (adverse water quality notification), and those of any applicable instrument or authorizing document (i.e. Order, Certificate of Approval)?
YES

Reporting requirements for the Winchester Water Treatment Plant are dictated by the Certificate of Approval and Ontario Regulation 459/00.

Condition No. 10 of Certificate of Approval No.7-0157-96-006 requires the submission of an annual performance report to the Regional Director within 90 days of the completion of the 12 month period being reported upon. Each annual report shall contain a summary and discussion of the quantity of water for the reporting period compared to the design values for the level of population serviced; a summary and discussion of the chemicals used in the treatment processes with special reference to any abnormal usages; and a summary and interpretation of the results of the chemical and bacteriological sampling program including any special water quality problems which may be experienced during the reporting period.

The annual performance report for 2000 was submitted by OCWA to the Regional Director on March 29, 2001, and complied with the requirements of Condition No. 10 of the Certificate of Approval.

Quarterly reports were submitted by OCWA to the Ministry for 2000, and for the first three quarters of 2001, as required by section 12 of O. Reg. 459/00.

The notification requirements for all indicators of adverse water quality, section 8 of O. Reg. 459/00, are being met.

The engineer's report was submitted on behalf of the Township of North Dundas by Stantec Consulting Ltd. in March 2001.

Therefore, the owner and operating authority are complying with the reporting requirements of the Certificate of Approval and Ontario Regulation 459/00.

2.9 PLANT AND OPERATOR CERTIFICATION

a) Plant Certification
   i) Facility Level: Class III WDS
   ii) Certificate Number:
   iii) Date of Issue:

b) Do the plant operators have the appropriate level of certificate for this plant?
YES

The facility and operator certificates are posted on-site. There is no certificate number and/or date of issue for the facility certificate. The Winchester Water Treatment Plant was classified as a Water Distribution System Class 3, and was not classified as a Water Treatment System, since it only consists of a groundwater supply with preventative disinfection.

The following is a list of the operators with details of their level of certification.

Dave Markell
WTS Class 2 #9396 Expiry Date: November 30, 2001
WDS Class 2 #7807 Expiry Date: November 30, 2003
WWTS Class 3 #9397 Expiry Date: November 30, 2004
WWCS Class 2 #7808 Expiry Date: November 30, 2003

Blair Henderson
WTS Class 2 #3695 Expiry Date: October 31, 2002
WDS Class 3 #3643 Expiry Date: October 31, 2002
WWTS Class 4 #3644 Expiry Date: October 31, 2002
WWCS Class 2 #3645 Expiry Date: October 31, 2002

Tony Kelly
WTS Class 3 #9394 Expiry Date: November 30, 2004
WDS Class 3 #7805 Expiry Date: November 30, 2003
WWTS Class 2 #9395 Expiry Date: November 30, 2001
WWCS Class 2 #7806 Expiry Date: November 30, 2003

Andrew Barrie
WTS Class 1 #11395 Expiry Date: September 30, 2003
WDS Class 1 #11396 Expiry Date: September 30, 2003
WWCS Class 1 #11397 Expiry Date: September 30, 2003
WWTS OIT #OT8565 Expiry Date: May 31, 2002

Timothy Leeman
WTS OIT #OT13686 Expiry Date: March 31, 2004
WDS OIT #OT13687 Expiry Date: March 31, 2004
WWCS OIT #OT13689 Expiry Date: March 31, 2004
WWTS OIT #OT13688 Expiry Date: March 31, 2004

Jean Veilleux
WTS Class 3 #7171 Expiry Date: May 31, 2003
WDS Class 3 #7172 Expiry Date: May 31, 2003
WWTS Class 2 #7173 Expiry Date: May 31, 2003
WWCS Class 2 #7174 Expiry Date: May 31, 2003

Mr. Blair Henderson is the Operations Manager for the Winchester Water Treatment Plant, and has the appropriate level of certification to have overall responsibility for the water works. All the operators received the minimum requirement of 40 hours of training in 2000 as stipulated in O. Reg. 435/93 s. 17(1). For the period of January to October 2001, some of the operators have already met and/or exceeded the minimum requirement of 40 hours of training. The operating authority must ensure that all operators receive at least 40 hours of training in 2001, and every year thereafter.

2.10 PROCESS WASTEWATER

Is the process waste water treated prior to discharge?
N/A

Process wastewater is not generated at the Winchester Water Treatment Plant.

Does the discharge meet the requirements outlined in:
a) its Certificate of Approval N/A
b) Ministry policy? N/A

This is not applicable since process wastewater is not generated at this water works.

3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES

In the previous compliance inspection report, dated August 23, 2000, by Michael Doggett, no actions were required, but there were other inspection findings.

1) OCWA indicated that an on-line chlorine analyzer was being installed downstream of Well No. 5. It was indicated that no on-line chlorine analyzer was being installed at Well No. 6 because there are no residents receiving water before Well No. 5 and after Well No. 6. OCWA should clarify that Well No. 6 is being monitored for residual chlorine prior to the water from Well No. 6 entering the distribution system.

OCWA responded to the above inspection findings in a letter dated November 17, 2000, from Blair Henderson (Operations Manager). Mr. Henderson explained that there are no residents receiving water on the feeder line from Well No. 6 before it is monitored for free chlorine residual. The on-line chlorine analyzer measures free chlorine residual from the combined treated flow from the feeder main of Well Nos. 5 and 6. There are no consumers upstream of the chlorine analyzer sample point.

There are no remaining non-compliance issues related to this inspection.

4.0 SUMMARY OF INSPECTION FINDINGS (HEALTH/ENVIRONMENTAL IMPACT)

Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate ?

NO

Specifics:
Not applicable.

Was there any indication of a known or anticipated environmental impact during the inspection and/or review of relevant material ?
NO

a) If the CofA contains conditions dictating monitoring and/or effluent quality for process wastewater treatment, is the facility operating in compliance with those conditions?
Not applicable.

b) If the water works has no process wastewater treatment provisions in place, is there evidence that untreated discharges have adversely impacted the environment or have a significant potential to adversely impact sensitive receivers?

Specifics:
Not applicable.

Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment?
NO

a) Do the maximum water takings comply with those prescribed in applicable Permits To Take Water?
Maximum water takings comply with the prescribed limits in the applicable Permits To Take Water.

b) Has the water works complied with sampling and analysis provisions contained in O.R. 459/00, or all MAC-related monitoring provisions contained in a CofA and Orders?
The Winchester Water Treatment Plant has complied with the sampling and analysis requirements stipulated in O. Reg. 459/00 and the Certificates of Approval.

c) Are all operators licensed as required under O. R. 435/93?

Specifics:
All operators are licensed as required under O. Reg. 435/93.

Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material?
NO

Specifics:
Not applicable.

5.0 ACTION(S) REQUIRED

No actions are required at this time. The Winchester Water Treatment Plant is operating in compliance with applicable Acts, Regulations and control documents, administered by the Ministry.

ACTIONS TAKEN

ACTION	ORDER ISSUED	COMPLIANCE DATE	COMPLIED WITH

Provincial Officers Order #

6.0 OTHER INSPECTION FINDINGS

At each of the well pumphouses (Well Nos. 1, 5, 6, 7) there is no containment provided for the sodium hypochlorite solution tanks. Sufficient containment should be provided for all of the sodium hypochlorite solution tanks.

The logbooks maintained at each of the well pumphouses do not have numbered pages. It is recommended that logbooks with numbered pages be purchased.

Well No. 5 is surrounded by farmland where it is possible that pesticides are being used. The owner should consider developing and implementing a wellhead monitoring program, to ensure the well is not being contaminated with pesticides. It was also observed during the inspection that the well casing for Well No. 5 is not above grade. This is also the case at Well No. 1. As stipulated in Reg. 903 section 13, the well casing is required to be finished 30 cm above grade. The well casings at Well Nos. 1 and 5 should be finished 30 cm above grade.

During the inspection, it was noted that the plant logbook maintained at the Winchester Sewage Treatment Plant was missing several entries in September and October 2001. Upon discussing this issue with the operators it was determined that the logbooks maintained at each of the pumphouses (stations) recorded the duties performed daily at that station, and the plant logbook records the overall "system" operations. The station logbooks are complete, and the issue of the missing entries in the plant logbook was due to the fact that the operators were recording information in the station logbooks but not in the plant logbook. The operators clarified the procedure of recording information in that from now on, the operators will record daily operations in the station logbooks, and will only record any "system" operations in the plant logbook maintained at the Winchester Sewage Treatment Plant.

The operating authority should ensure that all flow meters pertaining to the Winchester Water Treatment Plant (i.e. all flow meters at each of the wells which are in use) are calibrated at regular intervals not exceeding one year.

The owner should proceed with the recommendations of the engineer's report, and be prepared to meet the upgrading requirements of Condition No. 5 of the draft consolidated Certificate of Approval (MOE Reference No. 2338-4VNRTS), a copy of which is included in Appendix A.

The operating authority, OCWA, continues to provide excellent service to the Township of North Dundas.

7.0 OCCURRENCE REPORT # :

9940010311

An occurrence report must be completed for all non-compliance, defined as a violation of any Act, Regulation or condition of a control or authorizing document, administered by the Ministry.

PREPARED BY ENVIRONMENTAL OFFICER:

Shannon Hamilton-Browne	Shannon Hamilton-Browne	Kingston	2002/02/28
(Print)	(Signature)	(District Office)	(Date)

ENDORSED BY DISTRICT SUPERVISOR:

Conrad deBarros	C. d Barros	Kingston	Mar. 12. 02.
(Print)	(Signature)	(District Office)	(Date)

REPORT MAILED OUT ON: **STATUS: FINAL**
LAB RESULTS MAILED OUT ON:

NOTE: **"This inspection does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they apply or may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements."**

LAB RESULTS

CHEMICAL/PHYSICAL OBJECTIVES
HEALTH RELATED
(Well #1 - Treated)

PARAMETER (mg/L unless specified)	Sample Results	MAC[1]	IMAC[2]	AO[3]
Alachlor			0.005	
Aldicarb		0.009		
Aldrin + Dieldrin		0.0007		
Arsenic	0.0002		0.025	
Atrazine + – dealkylated metabolites			0.005	
Azinphos-methyl		0.02		
Barium	0.0299	1		
Bendiocarb		0.04		
Benzene	0.00005	0.005		
Benzo(a)pyrene		0.00001		
Boron	0.992		5	
Bromoxynil			0.005	
Cadmium	0	0.005		
Carbaryl (Sevin)		0.09		
Carbofuran		0.09		
Carbon Tetrachloride	0.0002	0.005		
Chlordane [4]		0.007		
Chloramines		3.0		
Chlorpyrifos (Dursban)		0.09		
Chromium	0.0043	0.05		
Cyanazine (Bladex)			0.01	
Diazinon		0.02		
Dicamba		**0.12**		
1,2-Dichlorobenzene	0.00005	0.2		0.003
1,4-Dichlorobenzene	0.00005	0.005		0.001
DDT + metabolites [5]		0.03		
1,2-Dichloroethane			0.005	
1,1-Dichloroethylene (vinylidene chloride)		0.014		
Dichloromethane	0.0005	0.05		
2,4-Dichlorophenol		0.9		0.0003
2,4-Dichlorophenoxy acetic acid (2,4-D)			0.1	
Diclofop-methyl		0.009		
Dimethoate			0.02	
Diquat		0.07		
Diuron		0.15		
Fluoride	0.155	b		
Heptachlor + Heptachlor Epoxide		0.003		
Lead	0.00016	0.01 c		

(Hexachlorocyclohexane (Lindane)		0.004		
Malathion		0.19		
Mercury	0.00002	0.001		
Methoxychlor (DMDT)		0.9		
Metolachlor			0.05	
Metribuzin (Sencor)		0.08		
Monochlorobenzene		0.08		0.03
Nitrate (as Nitrogen)		10.0 d		
Nitrite (as Nitrogen)	0.004	1.0 d		
Nitrate + Nitrite	0.033	10.0 d		
Nitrotiacedic Acid (NTA)		0.4		
Nitrosodimethylamine (NDMA)			0.000009	
Paraquat			0.01	
Parathion		0.05		
Pentachlorophenol		0.06		0.03
Phorate (Thimet)			0.002	
Pichloram			0.19	
Polychlorinated Biphenyls (PCB)			0.003	
Prometryne			0.001	
Selenium	0.001	0.01		
Simazine			0.01	
Temephos			0.28	
Terbufos			0.001	
Tetrachloroethylene (perchloroethylene)		0.03		
2,3,4,6-Tetrachlorophenol		0.1		0.001
Triallate		0.23		
Trichloroethylene		0.05		
2,4,6-Trichlorophenol		0.005		0.002
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)		0.28		0.02
Trifluralin			0.045	
Trihalomethanes	0.0005	0.1 e		
Turbidity (NTU)	0.20	f		f
Uranium	0.00015	0.1		
Vinyl Chloride (chloroethylene)		0.002		

Shortforms:

<T - A measurable trace amount; interpret with caution
<W - No measurable response (zero)
ND - Not detected
!NP - No appropriate procedure available
NA - Result not available
NS - Not sampled
NTU - Nephelometric Turbidity Unit
ng/L - Nanograms per litre
Φg/L - Micrograms per litre
mg/L - Milligrams per litre

Footnotes:

1 Maximum Acceptable Concentration (MAC)

2 Interim Maximum Acceptable Concentration (IMAC)

3 Aesthetic Objective (AO)

4 Includes □-Chlordane, □-Chlordane and Oxychlordane

5 Includes *p,p'-DDE, o,p'-DDT, p,p'-DDD and p,p'DDT*

a) Total toxic equivalents when compared with 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin)

b) Where fluoridation of drinking water is practised, it is recommended that the concentration be adjusted to 1.0 (+/- 0.2) mg/L, the optimum level for control of dental caries. Communities in Northern Ontario, where the annual mean daily maximum temperature is less than 10 °C may wish to consider adjusting the fluoride concentration to 1.2 (+/- 0.2) mg/L. Adverse effects of fluoride in drinking water above 1.5 mg/L and below 2.4 mg/L are cosmetic in nature (dental mottling in a small portion of the population). Levels above 1.5 mg/L should be reported to the local medical officer of health.

c) This objective applies to water at the point of consumption. Since lead is a component in some plumbing systems, first flush water may contain higher concentrations of lead than water that has been flushed for five minutes. Faucets, therefore, should be thoroughly flushed before water is taken for consumption.

d) Where nitrate and nitrite are present, the total of the two should not exceed 10 mg/L.

e) The interim maximum acceptable concentration (IMAC) for total trihalomethanes (THMs) in drinking water is 0.1 mg/L (100 ug/L), expressed as a running annual average of quarterly samples. This IMAC is based on the risk associated with chloroform, the THM most often present and generally found in the greatest concentrations in drinking water. The guideline is designated as interim until such time as the risks from other disinfection byproducts are ascertained.

f) A MAC for turbidity of 1 NTU in drinking water leaving the treatment plant was established to ensure the efficiency of the disinfection process. Treatment processes can result in increased turbidity in the distribution system. To ensure that the aesthetic objective for turbidity at the free flowing outlet of the ultimate consumer has been set at 5 NTU.

MICROBIOLOGICAL OBJECTIVES
HEALTH RELATED
(Well #1 - Treated)

PARAMETER (organisms/100 mL)	SAMPLE RESULTS	MAXIMUM ACCEPTABLE CONCENTRATION
Total Coliforms	Absent	0
E. Coli*	Absent	0
Background	ND	200**
Standard Plate Count	90 c/mL	500**

Footnotes:

* *Escherichia coli* is a more definitive indicator of fecal contamination than other fecal coliforms or total coliforms.

** At elevated levels, the general bacterial population may interfere with the detection of coliforms. This general population can be estimated from either background colony counts on the total coliform membrane filters or heterotrophic plate counts (HPC). If the membrane filter contains more than 200 background colonies on a total coliform medium per 100 mL or if the HPC exceeds 500 colonies per mL, the site should be resampled. If there is a recurrence of unacceptable background or heterotrophic plate counts, an inspection of the site should be undertaken to determine the cause.

CHEMICAL/PHYSICAL OBJECTIVES
NON-HEALTH RELATED
(Well #1 - Treated)

PARAMETERS (mg/L-unless specified)	Sample Results	Objective	Type of Objective
Aluminum	0.0006	0.1	OG
Copper	0.0446	1	AO
Ethylbenzene	0.00005	0.0024	AO
Iron	0.069	0.3	AO
Manganese	0.0133	0.05	AO
Toluene	0.00005	0.024	AO
Total Dissolved Solids		500	AO
Xylenes	0.00015	0.3	AO
Zinc	0.0011	5	AO

Shortforms:

<T	- A measurable trace amount; interpret with caution	<W	- No measurable response (zero)
NA	- Result not available	NS	- Not sampled
ND	- Not detected	mg/L	- milligrams per litre
Φg/L	- micrograms per litre	AO	- Aesthetic Objective
OG	- Operational Guideline	TCU	- True Colour Units

CHEMICAL/PHYSICAL OBJECTIVES
HEALTH RELATED
(Well #5 - Treated)

PARAMETER (mg/L unless specified)	Sample Results	MAC[1]	IMAC[2]	AO[3]
Alachlor			0.005	
Aldicarb		0.009		
Aldrin + Dieldrin		0.0007		
Arsenic	0.0004		0.025	
Atrazine + – dealkylated metabolites			0.005	
Azinphos-methyl		0.02		
Barium	0.118	1		
Bendiocarb		0.04		
Benzene	0.00005	0.005		
Benzo(a)pyrene		0.00001		
Boron	0.760		5	
Bromoxynil			0.005	
Cadmium	0.00001	0.005		
Carbaryl (Sevin)		0.09		
Carbofuran		0.09		
Carbon Tetrachloride	0.0002	0.005		
Chlordane [4]		0.007		
Chloramines		3.0		
Chlorpyrifos (Dursban)		0.09		
Chromium	0.0047	0.05		
Cyanazine (Bladex)			0.01	
Diazinon		0.02		
Dicamba		**0.12**		
1,2-Dichlorobenzene	0.00005	0.2		0.003
1,4-Dichlorobenzene	0.00005	0.005		0.001
DDT + metabolites [5]		0.03		
1,2-Dichloroethane			0.005	
1,1-Dichloroethylene (vinylidene chloride)		0.014		
Dichloromethane	0.0005	0.05		
2,4-Dichlorophenol		0.9		0.0003
2,4-Dichlorophenoxy acetic acid (2,4-D)			0.1	
Diclofop-methyl		0.009		
Dimethoate			0.02	
Diquat		0.07		
Diuron		0.15		
Fluoride	0.243	b		
Heptachlor + Heptachlor Epoxide		0.003		
Lead	0.00029	0.01 c		

(Hexachlorocyclohexane (Lindane)		0.004		
Malathion		0.19		
Mercury	0.00002	0.001		
Methoxychlor (DMDT)		0.9		
Metolachlor			0.05	
Metribuzin (Sencor)		0.08		
Monochlorobenzene		0.08		0.03
Nitrate (as Nitrogen)		10.0 d		
Nitrite (as Nitrogen)	0.001	1.0 d		
Nitrate + Nitrite	0.014	10.0 d		
Nitrotiacedic Acid (NTA)		0.4		
Nitrosodimethylamine (NDMA)			0.000009	
Paraquat			0.01	
Parathion		0.05		
Pentachlorophenol		0.06		0.03
Phorate (Thimet)			0.002	
Pichloram			0.19	
Polychlorinated Biphenyls (PCB)			0.003	
Prometryne			0.001	
Selenium	0.002	0.01		
Simazine			0.01	
Temephos			0.28	
Terbufos			0.001	
Tetrachloroethylene (perchloroethylene)		0.03		
2,3,4,6-Tetrachlorophenol		0.1		0.001
Triallate		0.23		
Trichloroethylene		0.05		
2,4,6-Trichlorophenol		0.005		0.002
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)		0.28		0.02
Trifluralin			0.045	
Trihalomethanes	0.0015	0.1 e		
Turbidity (NTU)	0.23	f		f
Uranium	0.00006	0.1		
Vinyl Chloride (chloroethylene)		0.002		

Shortforms:

<T	- A measurable trace amount; interpret with caution	NS	- Not sampled
<W	- No measurable response (zero)	NTU	- Nephelometric Turbidity Unit
ND	- Not detected	ng/L	- Nanograms per litre
!NP	- No appropriate procedure available	Φg/L	- Micrograms per litre
NA	- Result not available	mg/L	- Milligrams per litre

Footnotes:

1 Maximum Acceptable Concentration (MAC)

2 Interim Maximum Acceptable Concentration (IMAC)

3 Aesthetic Objective (AO)

4 Includes □-Chlordane, □-Chlordane and Oxychlordane

5 Includes *p,p'-DDE, o,p'-DDT, p,p'-DDD and p,p'DDT*

a) Total toxic equivalents when compared with 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin)

b) Where fluoridation of drinking water is practised, it is recommended that the concentration be adjusted to 1.0 (+/- 0.2) mg/L, the optimum level for control of dental caries. Communities in Northern Ontario, where the annual mean daily maximum temperature is less than 10 °C may wish to consider adjusting the fluoride concentration to 1.2 (+/- 0.2) mg/L. Adverse effects of fluoride in drinking water above 1.5 mg/L and below 2.4 mg/L are cosmetic in nature (dental mottling in a small portion of the population). Levels above 1.5 mg/L should be reported to the local medical officer of health.

c) This objective applies to water at the point of consumption. Since lead is a component in some plumbing systems, first flush water may contain higher concentrations of lead than water that has been flushed for five minutes. Faucets, therefore, should be thoroughly flushed before water is taken for consumption.

d) Where nitrate and nitrite are present, the total of the two should not exceed 10 mg/L.

e) The interim maximum acceptable concentration (IMAC) for total trihalomethanes (THMs) in drinking water is 0.1 mg/L (100 ug/L), expressed as a running annual average of quarterly samples. This IMAC is based on the risk associated with chloroform, the THM most often present and generally found in the greatest concentrations in drinking water. The guideline is designated as interim until such time as the risks from other disinfection byproducts are ascertained.

f) A MAC for turbidity of 1 NTU in drinking water leaving the treatment plant was established to ensure the efficiency of the disinfection process. Treatment processes can result in increased turbidity in the distribution system. To ensure that the aesthetic objective for turbidity at the free flowing outlet of the ultimate consumer has been set at 5 NTU.

MICROBIOLOGICAL OBJECTIVES
HEALTH RELATED
(Well #5 - Treated)

PARAMETER (organisms/100 mL)	SAMPLE RESULTS	MAXIMUM ACCEPTABLE CONCENTRATION
Total Coliforms	Absent	0
E. Coli*	Absent	0
Background	ND	200**
Standard Plate Count	10 c/mL	500**

Footnotes:

* *Escherichia coli* is a more definitive indicator of fecal contamination than other fecal coliforms or total coliforms.

** At elevated levels, the general bacterial population may interfere with the detection of coliforms. This general population can be estimated from either background colony counts on the total coliform membrane filters or heterotrophic plate counts (HPC). If the membrane filter contains more than 200 background colonies on a total coliform medium per 100 mL or if the HPC exceeds 500 colonies per mL, the site should be resampled. If there is a recurrence of unacceptable background or heterotrophic plate counts, an inspection of the site should be undertaken to determine the cause.

CHEMICAL/PHYSICAL OBJECTIVES
NON-HEALTH RELATED
(Well #5 - Treated)

PARAMETERS (mg/L-unless specified)	Sample Results	Objective	Type of Objective
Aluminum	0.0007	0.1	OG
Copper	0.147	1	AO
Ethylbenzene	0.00005	0.0024	AO
Iron	0.041	0.3	AO
Manganese	0.0295	0.05	AO
Toluene	0.00005	0.024	AO
Total Dissolved Solids		500	AO
Xylenes	0.00015	0.3	AO
Zinc	0.0033	5	AO

Shortforms:

<T	- A measurable trace amount; interpret with caution	<W	- No measurable response (zero)
NA	- Result not available	NS	- Not sampled
ND	- Not detected	mg/L	- milligrams per litre
Φg/L	- micrograms per litre	AO	- Aesthetic Objective
OG	- Operational Guideline	TCU	- True Colour Units

CHEMICAL/PHYSICAL OBJECTIVES
HEALTH RELATED
(Well #6 - Treated)

PARAMETER (mg/L unless specified)	Sample Results	MAC[1]	IMAC[2]	AO[3]
Alachlor			0.005	
Aldicarb		0.009		
Aldrin + Dieldrin		0.0007		
Arsenic	0.0002		0.025	
Atrazine + – dealkylated metabolites			0.005	
Azinphos-methyl		0.02		
Barium	0.0704	1		
Bendiocarb		0.04		
Benzene	0.00005	0.005		
Benzo(a)pyrene		0.00001		
Boron	0.178		5	
Bromoxynil			0.005	
Cadmium	0.00002	0.005		
Carbaryl (Sevin)		0.09		
Carbofuran		0.09		
Carbon Tetrachloride	0.0002	0.005		
Chlordane [4]		0.007		
Chloramines		3.0		
Chlorpyrifos (Dursban)		0.09		
Chromium	0.0029	0.05		
Cyanazine (Bladex)			0.01	
Diazinon		0.02		
Dicamba		**0.12**		
1,2-Dichlorobenzene	0.00005	0.2		0.003
1,4-Dichlorobenzene	0.00005	0.005		0.001
DDT + metabolites [5]		0.03		
1,2-Dichloroethane			0.005	
1,1-Dichloroethylene (vinylidene chloride)		0.014		
Dichloromethane	0.0005	0.05		
2,4-Dichlorophenol		0.9		0.0003
2,4-Dichlorophenoxy acetic acid (2,4-D)			0.1	
Diclofop-methyl		0.009		
Dimethoate			0.02	
Diquat		0.07		
Diuron		0.15		
Fluoride	0.0760	b		
Heptachlor + Heptachlor Epoxide		0.003		
Lead	0.00123	0.01 c		

(Hexachlorocyclohexane (Lindane)		0.004		
Malathion		0.19		
Mercury	0.00002	0.001		
Methoxychlor (DMDT)		0.9		
Metolachlor			0.05	
Metribuzin (Sencor)		0.08		
Monochlorobenzene		0.08		0.03
Nitrate (as Nitrogen)		10.0 d		
Nitrite (as Nitrogen)	0.001	1.0 d		
Nitrate + Nitrite	0.011	10.0 d		
Nitrotiacedic Acid (NTA)		0.4		
Nitrosodimethylamine (NDMA)			0.000009	
Paraquat			0.01	
Parathion		0.05		
Pentachlorophenol		0.06		0.03
Phorate (Thimet)			0.002	
Pichloram			0.19	
Polychlorinated Biphenyls (PCB)			0.003	
Prometryne			0.001	
Selenium	0.002	0.01		
Simazine			0.01	
Temephos			0.28	
Terbufos			0.001	
Tetrachloroethylene (perchloroethylene)		0.03		
2,3,4,6-Tetrachlorophenol		0.1		0.001
Triallate		0.23		
Trichloroethylene		0.05		
2,4,6-Trichlorophenol		0.005		0.002
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)		0.28		0.02
Trifluralin			0.045	
Trihalomethanes	0.0005	0.1 e		
Turbidity (NTU)	0.17	f		f
Uranium	0.00074	0.1		
Vinyl Chloride (chloroethylene)		0.002		

Shortforms:

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<W - No measurable response (zero)
ND - Not detected
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NA - Result not available
NS - Not sampled
NTU - Nephelometric Turbidity Unit
ng/L - Nanograms per litre
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mg/L - Milligrams per litre

Footnotes:

1 Maximum Acceptable Concentration (MAC)

2 Interim Maximum Acceptable Concentration (IMAC)

3 Aesthetic Objective (AO)

4 Includes □-Chlordane, □-Chlordane and Oxychlordane

5 Includes *p,p'-DDE, o,p'-DDT, p,p'-DDD and p,p'DDT*

a) Total toxic equivalents when compared with 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin)

b) Where fluoridation of drinking water is practised, it is recommended that the concentration be adjusted to 1.0 (+/- 0.2) mg/L, the optimum level for control of dental caries. Communities in Northern Ontario, where the annual mean daily maximum temperature is less than 10 °C may wish to consider adjusting the fluoride concentration to 1.2 (+/- 0.2) mg/L. Adverse effects of fluoride in drinking water above 1.5 mg/L and below 2.4 mg/L are cosmetic in nature (dental mottling in a small portion of the population). Levels above 1.5 mg/L should be reported to the local medical officer of health.

c) This objective applies to water at the point of consumption. Since lead is a component in some plumbing systems, first flush water may contain higher concentrations of lead than water that has been flushed for five minutes. Faucets, therefore, should be thoroughly flushed before water is taken for consumption.

d) Where nitrate and nitrite are present, the total of the two should not exceed 10 mg/L.

e) The interim maximum acceptable concentration (IMAC) for total trihalomethanes (THMs) in drinking water is 0.1 mg/L (100 ug/L), expressed as a running annual average of quarterly samples. This IMAC is based on the risk associated with chloroform, the THM most often present and generally found in the greatest concentrations in drinking water. The guideline is designated as interim until such time as the risks from other disinfection byproducts are ascertained.

f) A MAC for turbidity of 1 NTU in drinking water leaving the treatment plant was established to ensure the efficiency of the disinfection process. Treatment processes can result in increased turbidity in the distribution system. To ensure that the aesthetic objective for turbidity at the free flowing outlet of the ultimate consumer has been set at 5 NTU.

MICROBIOLOGICAL OBJECTIVES
HEALTH RELATED
(Well #6 - Treated)

PARAMETER (organisms/100 mL)	SAMPLE RESULTS	MAXIMUM ACCEPTABLE CONCENTRATION
Total Coliforms	Absent	0
E. Coli*	Absent	0
Background	ND	200**
Standard Plate Count	10 c/mL	500**

Footnotes:

* *Escherichia coli* is a more definitive indicator of fecal contamination than other fecal coliforms or total coliforms.

** At elevated levels, the general bacterial population may interfere with the detection of coliforms. This general population can be estimated from either background colony counts on the total coliform membrane filters or heterotrophic plate counts (HPC). If the membrane filter contains more than 200 background colonies on a total coliform medium per 100 mL or if the HPC exceeds 500 colonies per mL, the site should be resampled. If there is a recurrence of unacceptable background or heterotrophic plate counts, an inspection of the site should be undertaken to determine the cause.

CHEMICAL/PHYSICAL OBJECTIVES
NON-HEALTH RELATED
(Well #6 - Treated)

PARAMETERS (mg/L-unless specified)	Sample Results	Objective	Type of Objective
Aluminum	0.0006	0.1	OG
Copper	0.109	1	AO
Ethylbenzene	0.00005	0.0024	AO
Iron	0.134	0.3	AO
Manganese	0.0132	0.05	AO
Toluene	0.00005	0.024	AO
Total Dissolved Solids		500	AO
Xylenes	0.00015	0.3	AO
Zinc	0.0089	5	AO

Shortforms:

<T	- A measurable trace amount; interpret with caution	<W	- No measurable response (zero)
NA	- Result not available	NS	- Not sampled
ND	- Not detected	mg/L	- milligrams per litre
Φg/L	- micrograms per litre	AO	- Aesthetic Objective
OG	- Operational Guideline	TCU	- True Colour Units

CHEMICAL/PHYSICAL OBJECTIVES
HEALTH RELATED
(Well #7 - Treated)

PARAMETER (mg/L unless specified)	Sample Results	MAC[1]	IMAC[2]	AO[3]
Alachlor			0.005	
Aldicarb		0.009		
Aldrin + Dieldrin		0.0007		
Arsenic	0.0002		0.025	
Atrazine + – dealkylated metabolites			0.005	
Azinphos-methyl		0.02		
Barium	0.187	1		
Bendiocarb		0.04		
Benzene	0.00005	0.005		
Benzo(a)pyrene		0.00001		
Boron	0.038		5	
Bromoxynil			0.005	
Cadmium	0.00002	0.005		
Carbaryl (Sevin)		0.09		
Carbofuran		0.09		
Carbon Tetrachloride	0.0002	0.005		
Chlordane [4]		0.007		
Chloramines		3.0		
Chlorpyrifos (Dursban)		0.09		
Chromium	0.0015	0.05		
Cyanazine (Bladex)			0.01	
Diazinon		0.02		
Dicamba		**0.12**		
1,2-Dichlorobenzene	0.00005	0.2		0.003
1,4-Dichlorobenzene	0.00005	0.005		0.001
DDT + metabolites [5]		0.03		
1,2-Dichloroethane			0.005	
1,1-Dichloroethylene (vinylidene chloride)		0.014		
Dichloromethane	0.0005	0.05		
2,4-Dichlorophenol		0.9		0.0003
2,4-Dichlorophenoxy acetic acid (2,4-D)			0.1	
Diclofop-methyl		0.009		
Dimethoate			0.02	
Diquat		0.07		
Diuron		0.15		
Fluoride	0.0650	b		
Heptachlor + Heptachlor Epoxide		0.003		
Lead	0.00034	0.01 c		

(Hexachlorocyclohexane (Lindane)		0.004		
Malathion		0.19		
Mercury	0.00002	0.001		
Methoxychlor (DMDT)		0.9		
Metolachlor			0.05	
Metribuzin (Sencor)		0.08		
Monochlorobenzene		0.08		0.03
Nitrate (as Nitrogen)		10.0 d		
Nitrite (as Nitrogen)	0.001	1.0 d		
Nitrate + Nitrite	0.503	10.0 d		
Nitrotiacedic Acid (NTA)		0.4		
Nitrosodimethylamine (NDMA)			0.000009	
Paraquat			0.01	
Parathion		0.05		
Pentachlorophenol		0.06		0.03
Phorate (Thimet)			0.002	
Pichloram			0.19	
Polychlorinated Biphenyls (PCB)			0.003	
Prometryne			0.001	
Selenium	0.001	0.01		
Simazine			0.01	
Temephos			0.28	
Terbufos			0.001	
Tetrachloroethylene (perchloroethylene)		0.03		
2,3,4,6-Tetrachlorophenol		0.1		0.001
Triallate		0.23		
Trichloroethylene		0.05		
2,4,6-Trichlorophenol		0.005		0.002
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)		0.28		0.02
Trifluralin			0.045	
Trihalomethanes	0.0005	0.1 e		
Turbidity (NTU)	0.15	f		f
Uranium	0.00075	0.1		
Vinyl Chloride (chloroethylene)		0.002		

Shortforms:

<T - A measurable trace amount; interpret with caution
<W - No measurable response (zero)
ND - Not detected
!NP - No appropriate procedure available
NA - Result not available
NS - Not sampled
NTU - Nephelometric Turbidity Unit
ng/L - Nanograms per litre
Φg/L - Micrograms per litre
mg/L - Milligrams per litre

Footnotes:

1 Maximum Acceptable Concentration (MAC)

2 Interim Maximum Acceptable Concentration (IMAC)

3 Aesthetic Objective (AO)

4 Includes □-Chlordane, □-Chlordane and Oxychlordane

5 Includes *p,p'-DDE, o,p'-DDT, p,p'-DDD and p,p'DDT*

INSPECTION STATUS: FINAL

a) Total toxic equivalents when compared with 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin)

b) Where fluoridation of drinking water is practised, it is recommended that the concentration be adjusted to 1.0 (+/- 0.2) mg/L, the optimum level for control of dental caries. Communities in Northern Ontario, where the annual mean daily maximum temperature is less than 10 °C may wish to consider adjusting the fluoride concentration to 1.2 (+/- 0.2) mg/L. Adverse effects of fluoride in drinking water above 1.5 mg/L and below 2.4 mg/L are cosmetic in nature (dental mottling in a small portion of the population). Levels above 1.5 mg/L should be reported to the local medical officer of health.

c) This objective applies to water at the point of consumption. Since lead is a component in some plumbing systems, first flush water may contain higher concentrations of lead than water that has been flushed for five minutes. Faucets, therefore, should be thoroughly flushed before water is taken for consumption.

d) Where nitrate and nitrite are present, the total of the two should not exceed 10 mg/L.

e) The interim maximum acceptable concentration (IMAC) for total trihalomethanes (THMs) in drinking water is 0.1 mg/L (100 ug/L), expressed as a running annual average of quarterly samples. This IMAC is based on the risk associated with chloroform, the THM most often present and generally found in the greatest concentrations in drinking water. The guideline is designated as interim until such time as the risks from other disinfection byproducts are ascertained.

f) A MAC for turbidity of 1 NTU in drinking water leaving the treatment plant was established to ensure the efficiency of the disinfection process. Treatment processes can result in increased turbidity in the distribution system. To ensure that the aesthetic objective for turbidity at the free flowing outlet of the ultimate consumer has been set at 5 NTU.

MICROBIOLOGICAL OBJECTIVES
HEALTH RELATED
(Well #7 - Treated)

PARAMETER (organisms/100 mL)	SAMPLE RESULTS	MAXIMUM ACCEPTABLE CONCENTRATION
Total Coliforms	Absent	0
E. Coli*	Absent	0
Background	ND	200**
Standard Plate Count	10 c/mL	500**

Footnotes:

* *Escherichia coli* is a more definitive indicator of fecal contamination than other fecal coliforms or total coliforms.

** At elevated levels, the general bacterial population may interfere with the detection of coliforms. This general population can be estimated from either background colony counts on the total coliform membrane filters or heterotrophic plate counts (HPC). If the membrane filter contains more than 200 background colonies on a total coliform medium per 100 mL or if the HPC exceeds 500 colonies per mL, the site should be resampled. If there is a recurrence of unacceptable background or heterotrophic plate counts, an inspection of the site should be undertaken to determine the cause.

CHEMICAL/PHYSICAL OBJECTIVES
NON-HEALTH RELATED
(Well #7 - Treated)

PARAMETERS (mg/L-unless specified)	Sample Results	Objective	Type of Objective
Aluminum	0.0007	0.1	OG
Copper	0.0076	1	AO
Ethylbenzene	0.00005	0.0024	AO
Iron	0.011	0.3	AO
Manganese	0.0276	0.05	AO
Toluene	0.00005	0.024	AO
Total Dissolved Solids		500	AO
Xylenes	0.00015	0.3	AO
Zinc	0.0049	5	AO

Shortforms:

<T	- A measurable trace amount; interpret with caution	<W	- No measurable response (zero)
NA	- Result not available	NS	- Not sampled
ND	- Not detected	mg/L	- milligrams per litre
Φg/L	- micrograms per litre	AO	- Aesthetic Objective
OG	- Operational Guideline	TCU	- True Colour Units

LIST OF APPENDICES

APPENDIX A

DRAFT CONSOLIDATED CERTIFICATE OF APPROVAL

Ontario

Ministry of the Environment | Ministère de l'Environnement

CERTIFICATE OF APPROVAL
MUNICIPAL AND PRIVATE WATER WORKS

The Corporation of the Township of North Dundas
547 St. Lawrence Street P.O. Box 489
Winchester, Ontario
K0C 2K0

Site Location: Winchester STSW
475 Ottawa Street
Township of North Dundas

You have applied in accordance with Section 52 of the Ontario Water Resources Act for approval of:

a groundwater supply system serving the Village of Winchester in the Township of North Dundas, consisting of seven (7) supply wells and five (5) pumping stations as follows:

Well No. 1 UTM Easting 473009, UTM Northing 4992176 (Zone 18, NAD83, Accuracy +/- 10m)

- 57.9 m deep drilled well located at the south end of St. Lawrence St. equipped with a vertical turbine pump rated at 8.7 L/s at _____ m of total dynamic head with a 150 mm diameter discharge line.

Pumping Station for Well No. 1

- Pumping station located at the Well No. 1 site housing treatment and control facilities including:
  - 150 mm diameter pump header and appurtenances connected to the watermain distribution system including a flow meter;
  - Sodium hypochlorite disinfection system consisting of a 480 L capacity sodium hypochlorite solution tank and two (2) chemical metering pumps (one (1) duty and one (1) standby) each rated at 1.89 Lph at _____ kPa with a feed line into the pump header;
  - 21.6 kW diesel engine stand-by power generator set located in the main room of the pumping station; and
  - Associated mechanical and electrical equipment.

Well No. 4 UTM Easting 471261, UTM Northing 4992678 (Zone 18, NAD83, Accuracy +/- 10m)

- 28.0 m deep drilled well located 350 m west of the Village of Winchester limit on Main St., equipped with a submersible pump rated at 3.8 L/s at 66 m of total dynamic head, with a 150 mm diameter discharge line connected to the well pump header.

Pumping Station for Well No. 4

- Pumping station located at the Well No. 4 site housing treatment and control facilities including:
    - 50 mm diameter pump header and appurtenances connected to the transmission watermain described below including a flow meter;
    - Sodium hypochlorite disinfection system consisting of a 100 L capacity sodium hypochlorite solution tank and two (2) chemical metering pumps (one (1) duty and one (1) standby) each rated at 1.89 Lph at _____ kPa with a feed line into the pump header; and
    - Associated mechanical and electrical equipment.

Well No. 5 UTM Easting 470455, UTM Northing 4993002 (Zone 18, NAD83, Accuracy +/- 10m)

- 28.0 m deep drilled well located west of the Village of Winchester, equipped with a submersible pump rated at 7.6 L/s at 70 m of total dynamic head, with a 150 mm diameter discharge line connected to the well pump header.

Pumping Station for Well No. 5

- Pumping station located at the Well No. 5 site housing treatment and control facilities including:
    - 150 mm diameter pump header and appurtenances connected to the transmission watermain described below including a flow meter,
    - Sodium hypochlorite disinfection system consisting of a 100 L capacity sodium hypochlorite solution tank and two (2) chemical metering pumps (one (1) duty and one (1) standby) each rated at 1.89 Lph at 690 kPa discharging into the pump header;
    - _____ kW diesel engine standby power generator set located in the main room of the pumping station; and
    - Associated mechanical and electrical equipment

- 150 mm diameter transmission watermain with fire hydrants and appurtenances and no service connections on its entire length of approximately 520 m providing chlorine contact time as follows:

Street	From	To
Highway 31	Approx. 425 m N. of Hwy.43 (Pumping Station)	Hwy. 43
Highway 43	Hwy. 31	Approx. 95 m E. of Hwy. 31 (First Consumer)

Well No. 6 UTM Easting 467341,UTM Northing 4992352 (Zone 18, NAD83,Accuracy +/-10m)

- 15.9 m deep drilled well located west of the Village of Winchester, equipped with a submersible pump rated at 8.3 L/s at _____ m of total dynamic head, with a 150 mm diameter discharge line connected to the pump header.

Pumping Station for Well No. 6

- Pumping station located at the Well No. 6 site housing treatment and control facilities including:
  - 150 mm diameter pump header and appurtenances connected to the transmission watermain described below including a flow meter,
  - Sodium hypochlorite disinfection system consisting of two 480 L capacity sodium hypochlorite solution tanks and two (2) chemical metering pumps (one (1) duty and one (1) standby) each rated at 78.9 Lph at 862 kPa with a feed line into the pump header;
  - 54.7 kW diesel engine standby power generator set located in the main room of the pumping station; and
  - Associated mechanical and electrical equipment.

- 200 mm diameter transmission watermain with fire hydrants and appurtenances and no service connections on its entire length of approximately 4,000 m providing chlorine contact time as follows:

Street	From	To
Riddell Rd.	Approx. 3000 m W. of Hwy. 31 (Pumping station)	Hwy. 31
Highway 31	Riddell Rd.	Approx. 1000m S. of Riddell Rd. (Pumping Stn. for Well No. 5)

Well Nos. 7a, 7b, 7c UTM Easting 476879, UTM Northing 5000464 (Zone 18, NAD83, Accuracy +/- 10m)

- three (3) gravel packed wells each with a total depth of 24.5 m located northeast of the Village of Winchester, each equipped with a submersible pump rated at 11.4 L/s at 45 m of total dynamic head, with a 150 mm diameter discharge line connected to the pump header.

Pumping Station for Wells No. 7a, 7b and 7c

- Pumping station located at the Well No. 7a, 7b, and 7c site housing treatment and control facilities including:
  - 150 mm diameter pump header and appurtenances connected to the transmission watermain described below including a flow meter;
  - Sodium hypochlorite disinfection system consisting of one 200 L capacity sodium hypochlorite solution tank and two (2) chemical metering pumps (one (1) duty and one (1) standby) each rated at 8.3 Lph at 1000 kPa with a feed line discharging into the pump header;
  - Provisions to use a portable generator; and
  - Associated mechanical and electrical equipment

- 300 mm diameter water transmission line with fire hydrants and appurtenances and no service connections on its entire length of approximately 5,300 m providing chlorine contact time as follows:

Street	From	To
Thompson Road	Approx. 350 m E. of Lafleur Rd. (Pumping Station)	Lafleur Road
Lafleur Road Road No. 3	Thompson Road	County
County Road No. 3	Lafleur Road	Approx. 3350 m W. of Lafleur Rd. (First Consumer)

all in accordance with the Engineer's Report entitled " Township of North Dundas, Winchester STSW, Engineers' Report" prepared by Stantec Consulting Ltd. and dated March, 2001 (Engineer's Report) and any additional information and documentation that may have been provided in support of the Report.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

(1) "certificate" means this entire certificate of approval document, issued in accordance with Section 52 of the *Ontario Water Resources Act*, and includes the schedules to it, if any, and any applications for approval for which certificates of approval have previously been issued, and supporting information to the applications;

(2) "Director" means any Ministry employee appointed as Director pursuant to section 5 of the *Ontario Water Resources Act*;

(3) "Ministry" means the Ontario Ministry of the Environment;

(4) "Owner" means the Corporation of the Township of North Dundas, and includes its successors and assignees;

(5) "works" means the water works described in the Owner's application, this certificate and in the supporting documentation referred to herein, to the extent approved by this certificate;

(6) "water treatment plant" means the entire water treatment system, including the groundwater wells, and any water storage facilities associated with the water treatment plant;

(7) "water treatment or distribution system" means a system for collecting, producing, treating, storing, supplying or distributing water that includes one or more water works;

(8) "quarter" means the three-month period beginning on January 1, April 1, July 1 and October 1 in each year;

(9) "maximum flow rate" means the maximum rate of water flow for which the plant or process unit was designed;

(10) "contact time" means the detention time T_{10} which is the time for 10% of the water (tracer) to pass through the process unit, storage reservoir or pipe;

(11) "*Escherichia coli*" (*E. coli*) refers to the thermally tolerant forms of Escherichia that can survive at 44.5 degrees Celsius.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. PERFORMANCE

1.1 The Owner shall ensure that, subject to Conditions 3.1 through 3.13, the water treatment or distribution system is operated and maintained in such a manner, and with such facilities that water supplied to the consumers serviced by the system satisfies the requirements of the "Ontario Drinking Water Standards", dated January 2001, as amended from time to time.

1.2 The groundwater wells have been approved to supply water at the following maximum flow rates:

Well No. 1	568 L/min
Well No. 4	159 L/min
Well No. 5	386 L/min
Well No. 6	682 L/min
Wells No. 7a, b and c	combined rate of taking not exceeding 1, 350 L/min
	or 1,950 m^3/day

(a) The Owner shall have valid Permits To Take Water;

(b) The Owner shall submit an application for an amendment to this certificate when the approved well(s) maximum flow rates are exceeding the flow rates specified in the valid Permit To Take Water.

1.3 The Owner shall ensure that, subject to Conditions 3.1 through 3.13, the water treatment plant is operated to treat water at a rate not exceeding the maximum flow rate of 5,535 m^3/d total.

1.4 The Owner shall ensure that the flows into the water treatment plant do not exceed the maximum flow rate(s) set out in Condition 1.3, except where necessary for the purpose of maintenance of the works and essential to its efficient operation, and provided that the treated water quality satisfies the requirements set out in the Ministry Procedure B13-3 entitled "Chlorination of Potable Water Supplies in Ontario", dated January 2001, as amended from time to time.

1.5 The Owner shall ensure that the disinfection facilities in the water treatment plant are operated and maintained in such a manner and with such facilities as is necessary to be in accordance with the Ministry Procedure B13-3 entitled "Chlorination of Potable Water Supplies in Ontario", dated January 2001, as amended from time to time.

2. MONITORING AND RECORDING

2.1 The Owner shall ensure that the following monitoring program is established and carried out:

(a) Install, maintain and operate a sufficient number of flow measuring devices to make measurements referred to in clause (c) below.

(b) Calibrate the flow measuring devices required by clause (a) above at regular intervals not exceeding one year to ensure their accuracy to within plus or minus 5% of actual rate of flow within the range of 10% to 100% of the full scale reading of the measuring devices.

(c) The flow measuring devices required by clause (a) above shall be installed, maintained and operated to measure:

(i) the flow rate and daily quantity of water being taken from each source (well or intake) and conveyed to and through the water treatment plant (raw water), and

(ii) the flow rate of treated water supplied to the distribution system.

(d) Record the results of the flow measurements made in accordance with clause (c) above as daily instantaneous peak flow and total daily flow.

(e) Record the date, time, duration and cause of each occasion that the flow rate exceeds that specified in Condition 1.3.

(f) Install, maintain and operate continuous water quality analyzers and indicators with alarm systems, calibrated as specified by the instrument manufacturer's instructions or as in "Standard Methods for the Examination of Water and Wastewater" 20th Edition, 1998, or a more recently published edition, to monitor the following parameters at the indicated locations:

(i) free chlorine residual in treated water at the point(s) of entrance to the distribution system (quality control band: $\pm$ 0.05 mg/L),

(ii) turbidity of treated water at the point(s) of entrance to the distribution system (quality control band: $\pm$ 0.1 NTU),

NOTE: Works not doing continuous monitoring of chlorine residual or turbidity do not need to comply with this clause. Works which do continuous monitoring of chlorine residual or turbidity may do so instead of taking and analyzing grab samples as required by O. Reg. 459/00.

(g) Samples of raw water and treated water shall be collected and analyzed for parameters at the locations and frequencies in accordance with Regulation 459/00, Drinking Water Protection, Schedule 2, Sampling and Analysis Requirements, as amended from time to time.

(h) The sampling required by clause (g) above shall be performed in accordance with the "Guide to the Collection and Submission of Samples for Laboratory Analysis", Ministry of the Environment, 1993, as amended from time to time, or as described in Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, or a more recently published edition.

2.2 The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the monitoring, sampling and analyzing activities required by this certificate.

3. OPERATIONS AND MAINTENANCE

3.1 The Owner shall endeavor to take all necessary steps, within the Owner's authority, to ensure protection of the source of water supply (groundwater aquifer) from contamination.

3.2 The Owner shall ensure that, subsequent to repairs to the water supply or distribution system, and after significant power outages, or other interruptions in the operation of the water supply, resulting in loss of normal pressure conditions in the distribution system, and prior to utilization of the affected parts of the works for the supply of potable water, the affected parts of the water supply or distribution system have been adequately disinfected in accordance with the Ministry Procedure B13-3 entitled "Chlorination of Potable Water Supplies in Ontario", dated January 2001, as amended from time to time.

3.3 The Owner shall ensure that there is an operator, who holds a valid licence that is applicable to this type of water treatment plant and that is of the same class as or higher class than the class determined for the water treatment plant in accordance with O. Reg. 435/93, as amended from time to time, and who is responsible for the operation of the water treatment plant.

3.4 The Owner shall ensure that, at all times, the works, and the related equipment and appurtenances used to achieve compliance with this certificate, are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding, adequate operator staffing and training, including training in all procedures and other requirements of this certificate and the Act and regulations, adequate laboratory facilities, process controls and alarms, and the use of process chemicals and other substances that come in contact with water being treated, that are suitable for the process, compatible with each other and appropriate for drinking water.

3.5 In addition to Condition 3.4, the Owner shall ensure that all chemicals used in the treatment process and all materials contacting the water meet both the American Water Works Association (AWWA) quality criteria as set out in AWWA standards and the American National Standards Institute (ANSI) safety criteria as set out in ANSI standard NSF/60 or NSF/61. For all chemicals used in the water treatment process and all materials contacting the water being treated, the Owner shall have evidence of current chemical and material product registration by a testing institution accredited under the Standards Council of Canada Act or by the ANSI or documents showing the Ministry is satisfied that information provided by the product manufacturer indicates the chemical or material product will meet the criteria of both the AWWA and ANSI standards.

3.6 The Owner shall immediately discontinue use of any chemical upon written notice by the Director.

3.7 The Owner shall establish written procedures for the notification of the Medical Officer of Health and the Ministry required by O. Reg. 459/00, and shall ensure that these procedures are followed.

3.8 The Owner shall ensure that contingency plans and procedures are established and adequate equipment and material are available for dealing with emergencies, upset conditions and equipment breakdowns in the works, and that such plans and procedures are implemented.

3.9 The Owner shall ensure that an operations manual that incorporates, at a minimum, the requirements of this certificate, the Act and regulations, and any adopted operation and maintenance recommendations of the Engineer's Report based on which this certificate has been issued, is prepared within six (6) months of issuance of this certificate of approval, and ensure that the operations manual is kept up to date. Upon request, the Owner shall make the manual available for inspection by the Ministry personnel.

3.10 The Owner shall ensure that based on the raw water source characterization and the treatment process, the operations manual includes monitoring of the necessary raw water and in-process parameters that are essential for control of treatment process and the assessment of the performance of the works.

3.11 The Owner shall ensure that drawings accurately showing the works as constructed (record drawings) are prepared and kept up-to-date, including timely incorporation of all modifications made to the works throughout its operational life.

3.12 The Owner shall ensure that a complete set of the up-to-date record drawings required by Condition 3.11 is kept at the site of the works throughout the operational life of the works.

3.13 The Owner shall ensure that procedures are created and followed for receiving, responding to, and recording complaints about any aspects of the works, including recording the steps were taken to determine the cause of complaint and the corrective measures taken to alleviate the cause and prevent its reoccurrence.

4. COMPLIANCE REPORT AND DECLARATION

4.1 (a) The Owner shall ensure that a written report detailing any non-compliance with a term or condition of this approval is completed annually ("Compliance Report").

(b) A Compliance Report shall include, at a minimum, the following information:

(i) details of any non-compliance with a term or condition of the certificate;

(ii) detailed description of measures taken to comply with this certificate;

(iii) any supporting data or other information relied upon to produce the detailing of compliance and non-compliance;

(iv) details of how and when any non-compliance was corrected and if not corrected how and when non-compliance will be corrected;

(v) a summary and discussion of the quantity of water supplied during the reporting period compared to the design values for the population serviced, including peak flow rates, maximum daily flows and monthly average daily flows;

(vi) a summary of records made under Condition 2.1 related to flow rate exceedances, and a summary of analytical results of sampling required by the certificate, including raw water and in-process parameters as specified in the operations manual; and

(vii) a summary listing treatment chemicals used, including average dosage rates with special reference to any abnormal usages.

(c) Based on the annual Compliance Report, the Owner shall complete a written statement annually on a form available through the Ministry declaring whether or not the Owner is in full compliance with the certificate (a "Compliance Declaration")

(d) The annual Compliance Declaration shall be signed by the clerk of the municipality that owns the works or, where there is a Public Utilities Commission responsible for the works, the chief officer of the Public Utilities Commission or, where the works is privately owned, the Owner.

(e) The Owner shall ensure that a copy of the Compliance Report is available for inspection by any member of the public during normal business hours without charge and at the same location as that required by s.11 of O.Reg. 459 for reports under that regulation.

(f) The Owner shall ensure that the Compliance Declaration is submitted as part of the fourth quarter report required under s.12(1) of O.Reg. 459, and separately to the Manager of the local District office of the Ministry.

5. UPGRADING REQUIREMENTS

5.1 (a) The study shall be undertaken and the necessary report prepared in accordance with "Terms of Reference for Hydrogeological Study to Examine Groundwater Sources Potentially under the Direct Influence of Surface Water" available from the Ministry. The hydrogeological study report shall be submitted to the Director by **January 15, 2002.**

Where the undertaken hydrogeological study concludes that there is a direct influence of surface waters but that a requirement for filtration may not be warranted, and the Owner does not wish to provide filtration, the Owner shall prepare and submit to the Director, along with the application for approval of the physical improvements required by Condition 5.2, a delineation of the wellhead protection areas associated with the groundwater source, prepared in accordance with the "Protocol for Delineation of Wellhead Protection Areas for Municipal Groundwater Supply Wells." available from the Ministry, and a description of the proposed wellhead protection measures satisfactory to the Director.

(b) As an alternative to submitting the report(s) required by clause 5.1 (a) above, the Owner may choose to submit a proposal to provide full treatment consisting of chemically assisted filtration and continuous disinfection or equivalent treatment process. Such proposal shall be submitted to the Director by **January 15, 2002.**

(c) If the hydrogeological study as specified in Condition 5.1 (a) above indicates that the groundwater resource(s) is (are) not under the direct influence of surface water, then upgrade the disinfection system as necessary to provide the required disinfection contact time of a minimum of 15 minutes, all in accordance with "Procedure B13-3: Chlorination of Potable Water Supplies in Ontario".

5.2 Subject to Condition 5.3 below, by **December 31, 2002,** the Owner shall implement the following physical improvements to the works, in keeping with recommendations of the Engineers' Report and related correspondence:

(a) All works and measures necessary to meet requirements of the "Procedure B-13 -3 Chlorination of Potable Water Supplies in Ontario".

(b) All works and measures necessary to ensure the effective treatment and integrity of the works, including but not limited to:

(i) Conducting interior and exterior inspections of the physical condition of the wells and providing appropriate repairs including well head protection against surface water influence and assessing susceptibility of wells to flooding under 1:100 year storm condition;

(ii) Secondary containment for chemical and fuel storage tanks;

(iii) Valved drains on all chlorine tanks; and

(iv) Raw water sample ports.

5.3 The Owner shall not construct, or allow the construction of any portion of the works necessary to comply with the requirements of clauses 5.2 above unless a complete application for approval of such portion of the works including detailed design drawings, specifications and engineer's report containing detailed design calculations has been submitted to and approved by the Director.

5.4 The Owner shall ensure that a complete application for approval under section 52 of the *Ontario Water Resources Act*, and if necessary, under section 9 of the *Environmental Protection Act*, is submitted to the Director for each item listed in Condition 5.2 above for which an approval is required at a date which will allow the Owner to obtain approval for the required physical upgrades to the works, and implement the upgrades on or before the compliance date stipulated in Condition 5.2 above.

6. SUBSEQUENT ENGINEERS' REPORTS

6.1 The Owner shall ensure that, not later than **April 15, 2003,** a Second Engineer's Report, be prepared in accordance with the Ministry publication "Terms of Reference for Second and Subsequent Engineers' Reports for Water Works" current at the time of the preparation of the Report, is submitted to the Director.

6.2 The Owner shall ensure that each subsequent Engineer's Report, required by O. Reg. 459/00 to be submitted to the Director not later than the third anniversary of the submission of the previous report, is prepared in accordance with the Ministry publication "Terms of Reference for Second and Subsequent Engineers' Reports for Water Works" current at the time of the preparation of the Report.

7. REVOCATION OF EXISTING APPROVALS

7.1 The descriptions of the approved works and conditions of approval in this certificate apply in place of all existing descriptions and conditions in the certificates of approval for works which are part of the works approved by this certificate.

7.2 Notwithstanding Condition 7.1 above, the original applications for approval, including design calculations, engineering drawings and reports prepared in support of the existing certificate(s) of approval whose descriptions of the approved works and conditions are now replaced pursuant to Condition 7.1 above, shall form part of this certificate.

7.3 Where an existing certificate of approval referred to in Condition 7.1 above applies to works in addition to the works approved by this certificate, it shall continue to apply to those additional works.

8. INFORMATION

8.1 The requirements in this certificate shall not be construed as limiting in any way the ability of the Ministry to request or require the Owner to furnish any information related to compliance with this certificate, as limiting in any way the authority of the Ministry to require certain steps be taken, or as evidence of the fulfillment of the obligation to report or notify of non-compliance where reporting or notification is required by a statute, regulation, order or other approval.

8.2 In the event the Owner provides the Ministry with information, records, documentation or notification in accordance with this certificate ("Information"),

(a) the receipt of the Information by the Ministry;

(b) the acceptance by the Ministry of the Information's completeness or accuracy; or

(c) the failure of the Ministry to prosecute the Owner or to require the Owner to take any action, under this certificate or any statute or regulation in relation to the Information;

shall not be construed as an approval, excuse or justification by the Ministry of any act or omission of the Owner relating to the Information, amounting to non-compliance with the certificate.

9. CHANGE OF OWNERSHIP

9.1 The owner shall notify the Manager of the local District office of the Ministry in writing of any of the following changes within 30 days of the change occurring:

(a) change of owner or operating authority, or both;

(b) change of address of owner or operating authority or address of new owner or operating authority;

(c) change of partners where the owner or operating authority is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Partnerships Registration Act shall be included in the notification to the Manager of the local District office of the Ministry;

(d) change of name of the corporation where the owner of operator is or at any time becomes a corporation, other than a municipal corporation, and a copy of the most current "Initial Notice or Notice of Change" (Form 1, 2 or 3 of O.Reg. 189, R.R.O. 1980, as amended from time to time), filed under the Corporations Information Act shall be included in the notification to the Manager of the local District office of the Ministry;

9.2 In the event of any change in ownership of the works, other than change to a successor municipality, the owner shall notify in writing the succeeding owner of the existence of this certificate, and a copy of such notice shall be forwarded to the Manager of the local District office of the Ministry.

9.3 The owner shall ensure that all communications made pursuant to this condition will refer to this certificate's number.

10. INTERPRETATION (Severability and Conflicts)

10.1 The requirements of this certificate are severable. If any requirement of this certificate, or the application of any requirement of this certificate to any circumstance, is held invalid, the application of such requirement to other circumstances and the remainder of this certificate shall not be affected thereby.

10.2 In all matters requiring the interpretation and implementation of this certificate, the conditions of the certificate shall take precedence, followed by the Owner's applications for approval, and the documentation submitted in support of the applications, associated with any previously issued certificates of approval for works which are part of the works approved by this certificate.

The reasons for the imposition of these terms and conditions are as follows:

1. Conditions 1.1, and 1.5 are included so that the water quality delivered by the water treatment plant satisfies the current Ontario Drinking Water Standards in order to protect public health and so that the water is aesthetically acceptable.

2. Conditions 1.2, 1.3 and 1.4 are included so that the flow rate of water through the works is within the approved treatment capacity of the works.

3. Conditions 2.1 and 2.2 related to the flow metering, sampling and monitoring program are imposed so that all pertinent data are available for the works performance evaluation and so that the works is operated and maintained at the level consistent with the design objectives, and is effective in producing water of an acceptable quality at all times.

4. Conditions 3.1 through 3.9 and 3.11 through 3.13 are included so that the works will be operated, maintained, funded, staffed and equipped in a manner enabling compliance with the terms and conditions of this certificate and that the Owner can deal with contingency and/or emergency situations.

5. Condition 3.10 is included so that adequate information is available to allow proper control of the treatment process in order to achieve the desired water quality and efficiency of the treatment process.

6. Condition 4.1 is included so that the Owner will regularly review compliance with the terms and conditions of this certificate, be alerted to its obligations with respect to any non-compliance, and allow the public enhanced participation in monitoring compliance.

7. Condition 5.1 is included to require the Owner to undertake hydrogeological study to determine whether the groundwater is under the direct influence of surface water. Based on the recommendations of the study report and as determined by the Ministry, the Owner may need additional treatment to meet the requirements of the MOE Procedure B 13-3.

8. Condition 5.2 is included to require the Owner to implement improvements to the works necessary for the works to be capable of providing safe drinking water in accordance with Ontario Regulation 459/00 and Ontario Drinking Water Standards in a consistent and reliable manner.

9. Conditions 5.3 and 5.4 are included so that the Owner is aware that Condition 5.2, which identifies the requirements for improvements to the works, does not constitute an approval for the implementation of the improvements, and before undertaking any of the improvements, the Owner must apply for and obtain Director's approval under Section 52 of the *Ontario Water Resources Act.*

10. Conditions 6.1 and 6.2 are included to set specific dates for the submission of a second and subsequent engineers' reports, which are required by Ontario Regulation 459/00.

11. Conditions 7.1 through 7.3 are included to stipulate that this certificate replaces all previous approvals for the works being the subject of this certificate, and that the existing approvals remain in force for the purpose of any works which are not subject to this certificate (e.g., a distribution system or its portions, including any in-distribution storage facilities not associated with a water treatment process).

12. Conditions 8.1 and 8.2 are included to emphasize the distinction between the requirements of this certificate and other legal requirements with which the Owner is required to comply.

13. Conditions 9.1 through 9.3 are included so that the Ministry records are kept accurate and current with respect to approved works, and so that subsequent owners of the works are made aware of the certificate and continue to operate the works in compliance with it.

14. Conditions 10.1 and 10.2 are included to clarify how the certificate is to be judicially interpreted, and specifically, to clarify that the requirements of the certificate are severable and that they prevail over supporting documentation.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended, you may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Appeal Board
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 52, *Ontario Water Resources Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Appeal Board's requirements for an appeal can be obtained directly from the Board at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted water works are approved under Section 52 of the Ontario Water Resources Act.

The following Section will be filled out once a Director approves this document. Please keep this section together on one page. This blue text will not appear when document is printed.
DATED AT TORONTO this .....

Signature
....., P.Eng.
Director
Section .....

DW/

c: District Manager, MOE Cornwall
D. W. Lishman, P.Eng, Stantec Consulting Ltd.

APPENDIX B

ANNUAL RECORD OF WATER TAKING

Ministry of the Environment / Ministere de l'Environnement

Annual Record of Water Taking

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Personal information contained on this form is collected under the authority of the Ontario Water Resources Act, Section 34. The purpose of the form is to record details and information about the taking of water annually. Questions should be directed to the Ministry of the Environment's Regional Office in your area.

See examples on the manually printed form for instructions on completing form.

Year	Permit No.
2000	88-P-4090

Source (Separate record to be kept for each source)

Well # 1 Ground Water

Name of Permittee

Village of Winchester
547 St. Lawrence Street, Winchester, Ontario K0C 2K0

Mailing Address

c/o Ontario Clean Water Agency
5 Industrial Drive, Chesterville, Ontario K0C 1H0

Location of Taking	Twp. or Municipality	Concession	Lot
St. Lawrence St. South	Village of Winchester, Dundas Cnty.	Plan 34	Block 8

(1) Date of Taking	(2) Monthly Hours of Taking	(3) Rate of Taking [ ] Imp gpm [ ] U.S. gpm [x] Litres/sec	(4) Amount of Taking [ ] Day [ ] Week [x] Month	(5) Remarks
JAN. 2000	297.5	6.6	7,089 m3	
FEB. 2000	263.8	6.6	6,254 m3	
MAR. 2000	303.4	6.6	7,196 m3	
APR. 2000	306.7	6.6	7,301 m3	
MAY 2000	344.2	6.5	8,018 m3	
JUNE 2000	356.7	6.4	8,198 m3	
JULY 2000	367.7	6.3	8,367 m3	
AUG. 2000	374.5	6.2	8,353 m3	
SEPT. 2000	400.5	5.9	8,501 m3	
OCT. 2000	369.8	5.9	7,880 m3	
NOV. 2000	384	5.8	8,086 m3	
DEC. 2000	369.5	6.0	7,935 m3	

I certify that the above information is true, complete and accurate.	Signature	Date
Blair Henderson, Acting Operations Manager	Blair Henderson	FEB 08/2001

Ministry of the Environment / Ministere de l'Environnement

Annual Record of Water Taking

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Personal information contained on this form is collected under the authority of the Ontario Water Resources Act, Section 34. The purpose of the form is to record details and information about the taking of water annually. Questions should be directed to the Ministry of the Environment's Regional Office in your area.

See examples on the manually printed form for instructions on completing form.

Year	Permit No.
2000	89-P-4049

Source (Separate record to be kept for each source)

Well # 4 Ground Water

Name of Permittee

Village of Winchester
547 St. Lawrence Street, Winchester, Ontario K0C 2K0

Mailing Address

c/o Ontario Clean Water Agency
5 Industrial Drive, Chesterville, Ontario K0C 1H0

Location of Taking	Twp. or Municipality	Concession	Lot
Main St. West	Winchester Twp.	Con. 6	Lot 1

(1) Date of Taking	(2) Monthly Hours of Taking	(3) Rate of Taking [ ] Imp gpm [ ] U.S. gpm [x] Litres/sec	(4) Amount of Taking [ ] Day [ ] Week [x] Month	(5) Remarks
JAN. 2000	297.3	1.6	1,720 m3	
FEB. 2000	263	1.6	1,519 m3	
MAR. 2000	306.7	1.6	1,778 m3	
APR. 2000	306	1.7	1,854 m3	
MAY 2000	341.3	1.8	2,155 m3	
JUNE 2000	381.9	1.7	2,402 m3	
JULY 2000	373.3	1.7	2,335 m3	
AUG. 2000	296.3	1.7	1,862 m3	
SEPT. 2000	—	—	0 m3	Well off-line
OCT. 2000	—	—	0 m3	Well off-line
NOV. 2000	—	—	0 m3	Well off-line
DEC. 2000	—	—	0 m3	Well off-line

I certify that the above information is true, complete and accurate.

Blair Henderson, Acting Operations Manager

Signature: Blair Henderson

Date: FEB 08/2001

Ministry of the Environment

Ministere de l'Environnement

Annual Record of Water Taking

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

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See examples on the manually printed form for instructions on completing form.

Year	Permit No.
2000	86-P-4015

Source (Separate record to be kept for each source)

Well # 5 Ground Water

Name of Permittee

Village of Winchester
547 St. Lawrence Street, Winchester, Ontario K0C 2K0

Mailing Address

c/o Ontario Clean Water Agency
5 Industrial Drive, Chesterville, Ontario K0C 1H0

Location of Taking	Twp. or Municipality	Concession	Lot
Hwy. # 31 North	Winchester Twp.	Con. 7	Lot 1

(1) Date of Taking	(2) Monthly Hours of Taking	(3) Rate of Taking [ ] Imp gpm [ ] U.S. gpm [x] Litres/sec	(4) Amount of Taking [ ] Day [ ] Week [x] Month	(5) Remarks
JAN. 2000	295	5.5	5,798 m3	
FEB. 2000	257.7	5.5	5,134 m3	
MAR. 2000	307.1	5.5	6,103 m3	
APR. 2000	195.8	5.50	3,902 m3	
MAY 2000	—	—	0 m3	Well off-line for maintenance
JUNE 2000	—	—	0 m3	Well off-line for maintenance
JULY 2000	—	—	0 m3	Well off-line for maintenance
AUG. 2000	—	—	0 m3	Well off-line for maintenance
SEPT. 2000	—	—	0 m3	Well off-line for maintenance
OCT. 2000	—	—	0 m3	Well off-line for maintenance
NOV. 2000	—	—	0 m3	Well off-line for maintenance
DEC. 2000	—	—	0 m3	Well off-line for maintenance

I certify that the above information is true, complete and accurate.	Signature	Date
Blair Henderson, Acting Operations Manager	Blair Henderson	FEB 08/2001

Ministry of the Environment / Ministere de l'Environnement

Annual Record of Water Taking

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Personal information contained on this form is collected under the authority of the Ontario Water Resources Act, Section 34. The purpose of the form is to record details and information about the taking of water annually. Questions should be directed to the Ministry of the Environment's Regional Office in your area.

See examples on the manually printed form for instructions on completing form.

Year	Permit No.
2000	88-P-4089

Source (Separate record to be kept for each source)

Well # 6 Ground Water

Name of Permittee

Village of Winchester
547 St. Lawrence Street, Winchester, Ontario K0C 2K0

Mailing Address

c/o Ontario Clean Water Agency
5 Industrial Drive, Chesterville, Ontario K0C 1H0

Location of Taking	Twp. or Municipality	Concession	Lot
Spruit Road	Mountain Twp.	Con. 7	Lot 20

(1) Date of Taking	(2) Monthly Hours of Taking	(3) Rate of Taking [ ] Imp gpm [ ] U.S. gpm [x] Litres/sec	(4) Amount of Taking [ ] Day [ ] Week [x] Month	(5) Remarks
JAN. 2000	293.7	9.0	9,524 m3	
FEB. 2000	257	9.1	8,433 m3	
MAR. 2000	284	8.9	9,072 m3	
APR. 2000	202.5	8.3	6,052 m3	
MAY 2000	348	8.5	10,689 m3	
JUNE 2000	357.9	8.3	10,660 m3	
JULY 2000	375.2	8.3	11,233 m3	
AUG. 2000	380.2	7.6	10,399 m3	
SEPT. 2000	395.8	7.0	10,041 m3	
OCT. 2000	367.4	7.7	10,214 m3	
NOV. 2000	388.1	8.1	11,318 m3	
DEC. 2000	369.3	8.0	10,697 m3	

I certify that the above information is true, complete and accurate.	Signature	Date
Blair Henderson, Acting Operations Manager	Blair Henderson	FEB 08/2001

Ministry of the Environment / Ministere de l'Environnement

Annual Record of Water Taking

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Personal information contained on this form is collected under the authority of the Ontario Water Resources Act, Section 34. The purpose of the form is to record details and information about the taking of water annually. Questions should be directed to the Ministry of the Environment's Regional Office in your area.

See examples on the manually printed form for instructions on completing form.

Year	Permit No.
2000	96-P-4068

Source (Separate record to be kept for each source)

Well # 7A, 7B, 7C Ground Water

Name of Permittee

Village of Winchester
547 St. Lawrence Street, Winchester, Ontario K0C 2K0

Mailing Address

c/o Ontario Clean Water Agency
5 Industrial Drive, Chesterville, Ontario K0C 1H0

Location of Taking	Twp. or Municipality	Concession	Lot
Thompson Road	Winchester Twp.	Conc. 9	Pt. Lot 15

(1) Date of Taking	(2) Monthly Hours of Taking	(3) Rate of Taking [ ] Imp gpm [ ] U.S. gpm [x] Litres/sec	(4) Amount of Taking [ ] Day [ ] Week [x] Month	(5) Remarks
JAN. 2000	295.2	19.7	20,947 m3	
FEB. 2000	265.2	19.3	18,412 m3	
MAR. 2000	307.1	19.4	21,435 m3	
APR. 2000	305.9	19.7	21,640 m3	
MAY 2000	348.7	20	25,097 m3	
JUNE 2000	377.2	20.8	27,865 m3	
JULY 2000	375.6	20.6	27,937 m3	
AUG. 2000	377.3	19.9	27,066 m3	
SEPT. 2000	391	20.2	28,411 m3	
OCT. 2000	374.5	20.4	27,523 m3	
NOV. 2000	384	20.1	27,811 m3	
DEC. 2000	369.7	20.2	26,846 m3	

I certify that the above information is true, complete and accurate.	Signature	Date
Blair Henderson, Acting Operations Manager	Blair Henderson	FEB 08/2001

APPENDIX C

PERFORMANCE ASSESSMENT REPORTS

ONTARIO CLEAN WATER AGENCY
WATER PLANT PERFORMANCE ASSESSMENT REPORT

MUNICIPALITY: WINCHESTER
PROJECT: WINCHESTER WATER SUPPLY
PROJ. NUM.: 6-0009-57-00
WORKS NUM.: 210000586
DESCRIPTION: SEVEN WELL SUPPLY, ELEVATED TANK AND DISTRIBUTION SYSTEM
DISINFECTION IS WITH SODIUM HYPOCHLORITE.

YEAR: 2000
WATER SOURCE: GROUNDWATER
DESIGN CAP.: 4.535 X 1000 M3/d

MONTH	SYSTEM FLOWS (TREATED)			EFFLUENT PHYSICAL/CHEMICAL PARAMETERS					DISINFECTION			BACTI (INDICATE NO. OF SAMPLES)			
												SAFE		UNSAFE OR POOR	
	TOTAL FLOW 1000 m3	AVG DAY FLOW 1000 m3	MAX DAY FLOW 1000 m3	AVG TURB. (FTU)	AVG COLOUR (TCU)	AVG IRON (mg/l)	AVG SODIUM (mg/l)	AVG NITRATE (mg/l)	AVG.FREE CL2 RESID. (mg/l)	AVG TOT. CL2 RESID. (mg/l)	MIN TOT. CL2 RESID. DIST.(mg/l)	TREAT	DIST	TREAT	DIST
JAN	43.385	1.399	1.508	0.23	1.00	0.04	75	0.14	1.03	1.25	0.30	25	20	0	0
FEB	39.752	1.370	1.507	0.28					0.96	1.08	0.20	20	16	0	0
MAR	45.584	1.470	1.603	0.25					0.91	1.11	0.30	20	16	0	0
APR	40.749	1.358	1.654	0.24					0.88	1.07	0.30	18	16	0	0
MAY	45.959	1.532	2.231	0.27					0.88	1.06	0.20	16	16	0	0
JUN	49.124	1.637	2.231	0.24					0.92	0.97	0.20	16	16	0	0
JUL	49.872	1.609	1.771	0.27					0.84	0.96	0.20	20	24	0	0
AUG	47.680	1.538	1.892	0.38					0.86	1.02	0.40	15	16	0	0
SEP	46.953	1.565	1.682	0.36			8.00	0.16	0.93	1.16	0.40	12	14	0	0
OCT	45.617	1.472	1.749	0.37				0.22	1.17	1.47	0.40	15	15	0	0
NOV	47.215	1.574	1.845	0.36					1.30	1.57	0.50	12	14	0	0
DEC	45.478	1.467	2.184	0.31					1.21	1.45	0.40	12	13	0	0
TOTAL	547.4											201	196	0	0
AVG		1.499		0.297	1.000	0.040	41.500	0.173	0.991	1.181		16.750	16.333	0	0
MAX			2.231	0.38	1.00	0.04	75.00	0.22			0.20	25	24	0	0
CRITERIA				**1.00**	**5.00**	**0.30**	**200.00**	**10.00**			**0.20**			**1**	**1**

MEETS ODWO (YES/NO)	YES	YES	YES	YES	YES		YES		YES	YES

COMMENTS:

Ontario Clean Water Agency
Performance Assessment Report - Ground Water Supply

Municipality: Village of Winchester
Project: [5705] - Winchester Water Well & Distribution System
Project Number: 6-0009-57-00
Works Number: 210000586
Description: Seven well supply, elevated tank, & distribution system.

Year: 2001
Water Source: Ground Water
Design Avg Day Flow(m³): 2,324.0
Effluent Group Selected: T

	<<< --- Flows Treated --- >>>			<<< --- Effluent Physical/Chemical Parameters --- >>>					<<< --- Disinfection --- >>>			< - Bact. (# of Samples) - >			
Month	Total Flow m³	Avg Day m³	Max Day m³	Avg Turb. (NTU)	Avg Colour (TCU)	THM (ug/L)	Avg Iron (ug/L)	Avg Sodium (mg/L)	Avg Nitrate mg/L	Avg Free CL2 Resid. Treat (mg/L)	Avg Total CL2 Resid. Treat (mg/L)	Min Total CL2 Resid. Dist. (mg/L)	Safe Treat	Safe Dist	Unsafe or Poor Treat	Unsafe or Poor Dist
JAN	49,099	1,584	1,848	0.23				>20		1.39	1.68		15	16		
FEB	45,802	1,636	1,798	0.24		10.400		46.33	0.32	1.29	1.72		12	12		
MAR	50,717	1,636	1,884	0.16						1.00	1.71		12	12		
APR	46,287	1,543	1,702	0.17						0.91	1.74		15	15		
MAY	56,308	1,816	2,135	0.31		13.325		46.33	0.34	1.36	1.86		12	12		
JUN	58,393	1,946	2,375	0.27						1.35	1.75		12	12		
JUL	60,433	1,949	2,136	0.20						1.36	1.82		15	15		
AUG	60,672	1,957	2,247	0.21		27.000		41.33	0.23	1.55	1.79		12	12		
SEP	54,496	1,817	2,078	0.24						1.43	1.73		12	12		
OCT	55,698	1,797	2,183													
NOV																
DEC																
Total:	537,905												117	118	0	0
AVG:		1,768		0.23		16.908		44.67	0.30	1.29	1.75		13	13		
MAX:			2,375	0.31		27.000		46.33	0.34	1.55	1.86		15	16		
Criteria:				1.00												

Note: -1 Analysis result less than detectable limit

Ontario Clean Water Agency
Monthly Process Data Report

Municipality: Village of Winchester
Project: [5705] - Winchester Water Well & Distribution System
Project Number: 6-0009-57-00
Work Number 210000586
Description: Seven well supply, elevated tank, & distribution system.

Year: 2001
Water Source/Receiver: Ground Water
Design Avg Day Flow(m^3): 2,324

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Distribution System/Health/Reg.459/Sch.2												
Free Chlorine Residual (mg/L)												
Min:	.4	.5	.7	.6	.8	.44	.4	.8	.4	.	.	.

APPENDIX D

CALIBRATION RECORDS

Ontario Clean Water Agency / Agence Ontarienne Des Eaux

PROJECT: Winchester WTP NO.: ORG.: ID.: Well #1

PRIMARY

MAKE:	ABB Kent	TYPE:	Magnetic
MODEL:	Mag Master	SERIAL:	V/31312/2/1
INT. DIA:	50.0 mm	V CONST:	1.5251
LINING:		PROBE MAT:	

CONVERTER

MAKE:	ABB Kent	TYPE:	Digital
MODEL:	M-Master	SERIAL:	640 663/3
VEL. SET.	8.03 m/sec	RANGE:	15.77 l/sec
OUTPUT:	4-20 mA		

RECORDER

MAKE:		TYPE:	
MODEL:		SERIAL:	
INPUT:		RANGE:	

TOTALIZER

MAKE:		TYPE:	
MODEL:		SERIAL:	
INPUT:		RANGE:	

CALIBRATION

PRIMARY ZERO ADJUST TEST I INITIAL I

VELOCITY SETTING	0.0	.2	.5	1.0	2.0	5.0	m/sec.
RANGE	0	.50	1.26	2.51	5.99	14.97	l/sec
OUTPUT THEO	0	4.51	5.27	7.03	10.07	19.19	mAdc
OUPUT BEFORE CAL.	4	4.57	5.48	6.99	10.06	19.1	mAdc
OUTPUT AFTER CAL.	4	4.57	5.48	6.99	10.06	19.1	mAdc

SECONDARY:

INPUT							mAdc
FLOW THEO							m^3/D
CHART							% F.S.
ELAPSED TIME							min.
FLOW	0	48.38	126.14	223.78	514.08	1,291.7	m^3/D
ERROR %F/S	0	0.38	1.27	0.51	0.26	0.13	% F.S.

TECHNICIANS NAME	SIGNATURE	DATE
AK.		00/08/16.

Ontario Clean Water Agency / Agence Ontarienne Des Eaux

PROJECT: Winchester WTP NO.: ORG.: ID.: Well #4

PRIMARY

MAKE: ABB Kent
TYPE: Magnetic
MODEL: Mag Master
SERIAL: V/30002/68/2
INT. DIA: 25.0 mm
V CONST: 1.5341
LINING:
PROBE MAT:

CONVERTER

MAKE: ABB Kent
TYPE: Digital
MODEL: M-Master
SERIAL: A971521/1
VEL. SET. 12.83 m/sec
RANGE: 6.3 l/sec
OUTPUT: 4-20 mA

RECORDER

MAKE:
TYPE:
MODEL:
SERIAL:
INPUT:
RANGE:

TOTALIZER

MAKE:
TYPE:
MODEL:
SERIAL:
INPUT:
RANGE:

CALIBRATION

PRIMARY ZERO ADJUST — TEST I — INITIAL I

VELOCITY SETTING	0.0	.2	.5	1.0	2.0	5.0	m/sec.
RANGE	0	.15	.38	.75	1.51	3.77	l/sec
OUTPUT THEO	0	4.38	4.96	5.91	7.83	13.57	mAdc
OUPUT BEFORE CAL.	4	4.32	5	5.96	7.87	13.56	mAdc
OUTPUT AFTER CAL.	4	4.32	5	5.96	7.87	13.56	mAdc

SECONDARY:

INPUT							mAdc
FLOW THEO							m^3/D
CHART							% F.S.
ELAPSED TIME							min.
FLOW	0	14.7	33.7	66.53	130.5	325.73	m^3/D
ERROR %F/S	0	0.15	0.08	0.15	0.08	0.08	% F.S.

TECHNICIANS NAME	SIGNATURE	DATE
[signature]	[signature]	00/08/16

Ontario Clean Water Agency / Agence Ontarienne Des Eaux

PROJECT: Winchester WTP NO.: ORG.: ID.: Well #5

PRIMARY

MAKE:	ABB Kent	TYPE:	Magnetic
MODEL:	Mag Master	SERIAL:	V/31312/2/2
INT. DIA:	50.0 mm	V CONST:	1.4118
LINING:		PROBE MAT:	

CONVERTER

MAKE:	ABB Kent	TYPE:	Digital
MODEL:	M-Master	SERIAL:	640 663/7
VEL. SET.	8.03 m/sec	RANGE:	15.77 l/sec
OUTPUT:	4-20 mA		

RECORDER

MAKE:		TYPE:	
MODEL:		SERIAL:	
INPUT:		RANGE:	

TOTALIZER

MAKE:		TYPE:	
MODEL:		SERIAL:	
INPUT:		RANGE:	

CALIBRATION

PRIMARY ZERO ADJUST TEST I INITIAL I

VELOCITY SETTING	0.0	.2	.5	1.0	2.0	5.0	m/sec.
RANGE	0	.55	1.39	2.77	5.54	13.86	l/sec
OUTPUT THEO	0	4.56	5.41	6.81	9.63	18.06	mAdc
OUPUT BEFORE CAL.	4	4.5	5.35	6.74	9.55	18.03	mAdc
OUTPUT AFTER CAL.	4	4.5	5.35	6.74	9.55	18.03	mAdc

SECONDARY:

INPUT							mAdc
FLOW THEO							m^3/D
CHART							% F.S.
ELAPSED TIME							min.
FLOW	0	42.34	114.05	233.28	473.47	1,189.73	m^3/D
ERROR %F/S	0	0.38	0.44	0.44	0.38	0.57	% F.S.

TECHNICIANS NAME	SIGNATURE	DATE
[illegible]	[signature]	00/08/16

Ontario Clean Water Agency / Agence Ontarienne Des Eaux

PROJECT: Winchester WTP NO.: ORG.: ID.: Well #6

PRIMARY

MAKE: ABB Kent
MODEL: Mag Master
INT. DIA: 50.0 mm
LINING:
TYPE: Magnetic
SERIAL: V/31312/2/3
V CONST: 1.3998
PROBE MAT:

CONVERTER

MAKE: ABB Kent
MODEL: M-Master
VEL. SET. 8.03 m/sec
OUTPUT: 4-20 mA
TYPE: Digital
SERIAL: 640 663/8
RANGE: 15.77 l/sec

RECORDER

MAKE:
MODEL:
INPUT:
TYPE:
SERIAL:
RANGE:

TOTALIZER

MAKE:
MODEL:
INPUT:
TYPE:
SERIAL:
RANGE:

CALIBRATION

PRIMARY ZERO ADJUST TEST I INITIAL I

VELOCITY SETTING	0.0	.2	.5	1.0	2.0	5.0	m/sec.
RANGE	0	.55	1.38	2.74	5.50	13.74	l/sec
OUTPUT THEO	0	4.56	5.39	6.79	9.57	17.95	mAdc
OUPUT BEFORE CAL.	4	4.62	5.39	6.78	9.57	17.95	mAdc
OUTPUT AFTER CAL.	4	4.62	5.39	6.78	9.57	17.95	mAdc

SECONDARY:

INPUT							mAdc
FLOW THEO							m^3/D
CHART							% F.S.
ELAPSED TIME							min.
FLOW	0	52.7	118.37	237.6	475.2	1,188	m^3/D
ERROR %F/S	0	0.38	0.06	0.06	0	0.06	% F.S.

TECHNICIANS NAME	SIGNATURE	DATE
[signature]	[signature]	00/08/16

Ontario Clean Water Agency / Agence Ontarienne Des Eaux

PROJECT: Winchester WTP NO.: ORG.: ID.: Well #7

PRIMARY

MAKE: ABB Kent
TYPE: Magnetic
MODEL: Mag Master
SERIAL: V/31312/1/1
INT. DIA: 100.0 mm
V CONST: 1.0600
LINING:
PROBE MAT:

CONVERTER

MAKE: ABB Kent
TYPE: Digital
MODEL: M-Master
SERIAL: A971527/1/11
VEL. SET. 6.43
RANGE: 50.47 l/sec
OUTPUT: 4-20 mA

RECORDER

MAKE:
TYPE:
MODEL:
SERIAL:
INPUT:
RANGE:

TOTALIZER

MAKE:
TYPE:
MODEL:
SERIAL:
INPUT:
RANGE:

CALIBRATION

PRIMARY ZERO ADJUST TEST I INITIAL I

VELOCITY SETTING	0.0	.2	.5	1.0	2.0	5.0	m/sec.
RANGE	0	1.66	4.16	8.32	16.64	41.6	l/sec
OUTPUT THEO	0	4.53	5.32	6.63	9.28	17.18	mAdc
OUPUT BEFORE CAL.	4	4.52	5.62	6.62	9.26	17.23	mAdc
OUTPUT AFTER CAL.	4	4.52	5.62	6.62	9.26	17.23	mAdc

SECONDARY:

INPUT							mAdc
FLOW THEO							m^3/D
CHART							% F.S.
ELAPSED TIME							min.
FLOW	0	141.7	358.6	717.12	1,435.1	3,603.74	m^3/D
ERROR %F/S	0	0.04	0.02	0.04	0.06	0.22	% F.S.

TECHNICIANS NAME	SIGNATURE	DATE
[signature]	[signature]	00/08/16

APPENDIX E

LETTER TO MEDICAL OFFICER OF HEALTH

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Chesterville Hub
5 Industrial Drive
Chesterville, Ontario
K0C 1H0

tel (613) 448-3098
fax (613) 448-1616

October 10, 2001

Eastern Ontario Health Unit
1000 Pitt Street
Cornwall, Ontario
K6J 5T1

Attention: Dr. Raymond Bourdeau, Medical Officer of Health

Dear Dr. Bourdeau;

SUBJECT: **Sodium Levels in Drinking Water**

The Ontario Clean Water Agency, Chesterville Hub, is the operating authority for the Chesterville Water Treatment Plant and Distribution System and the Winchester Water Treatment and Distribution System. It is our duty to advise you that these facilities have exceeded the sodium levels of 20 mg/Litre as specified in the Ontario Drinking Water Standards. The Chesterville Water Distribution System sample result is 33 mg/L. The Winchester Water Distribution System sample result is averaged at 30.6 mg/L.

Should you require any further information, please do not hesitate to contact myself.

Yours truly,

Blair Henderson
Acting Operations Manager
Chesterville Hub
Eastern Area

c.c. Cindy Spencer, Compliance & Process Support Advisor, O.C.W.A., Eastern Area
c.c. Howard Smith, Clerk-Administrator, Township of North Dundas

APPENDIX F

MINISTRY SAMPLE RESULTS

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 28, 2001 10:09 pm
Login: C88668

LOGIN DESCRIPTION: 210000586 WINCHESTER WS

Program Code: 130072201

Program : MOEE OPERATIONS DIVISION
Study : WATER, COMMUNAL
Project : EASTERN REGION - KINGSTON DIST
Activity : INSPECTION OF MUNIC WTP (SWIP)

Organization: 132010014615

Mail this copy to:

HAMILTON-BROWNE, SHANNON
MOE - CORNWALL AREA OFFICE
113 AMELIA STREET
CORNWALL, ONT
K6H 3P1

Final reports to: HAMILTON-BROWNE, SHANNON

Inquires to: LORNA GREY Telephone: 416-235-5894
PAUL YANG Telephone: 416-235-6004

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 28, 2001 10:09 pm
Login: C88668

Field ID	Station ID	Sample Location Description	Sampling Date	Zone	Sampler Information
SHB2-10-30-01	2100005867404	WELL 1 TREATED	2001-OCT-30	5	

Sample ID	Sample Comment Description
C88668-0001	MICROBIOLOGY SAMPLE BROKEN IN TRANSIT

MOEE*LIMS Products Requested:

WD	E3051A	MET3051	WD	E3060B	HG3060	WD	E3144B	VOL3144	WD	E3172A	F3172	WD	E3196A	IBC3196			
WD	E3274A	LIC3274	WD	E3311A	TURB3311	WD	E3364A	DISNUT3364									

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 28, 2001 10:09 pm
Login: C88668

FINAL ANALYTICAL RESULTS

Field ID:	SHB2-10-30-01
Sample ID:	C88668-0001
MOEE*LIMS ID:	2001WD44-00088
Station ID:	2100005867404
Collect Date:	2001-OCT-30
Sample Location Description:	WELL 1 TREATED
Sample Comments Description:	MICROBIOLOGY SAMPLE BROKEN IN TRANSIT

Listid	Parameter	Value	Units	Qual	Rmks
3051L1	Copper	44.6	ug/L	+/-3.8	
	Nickel	10	ug/L	+/-1.2	
	Zinc	1.1	ug/L	+/-0.5	
	Cadmium	0	ug/L	+/-0.06	
	Chromium	4.3	ug/L	+/-1.4	
	Lead	.16	ug/L	+/-0.06	
	Iron	69	ug/L	+/-8	
	Manganese	13.3	ug/L	+/-1.27	
	Aluminum	.6	ug/L	+/-0.5	
	Vanadium	.71	ug/L	+/-0.24	
	Molybdenum	.36	ug/L	+/-0.4	
	Silver	.01	ug/L	+/-0.05	
	Barium	29.9	ug/L	+/-2.63	
	Beryllium	-.04	ug/L	+/-0.15	
	Strontium	3680	ug/L	+/-184	RRV
	Titanium	3.7	ug/L	+/-2.6	
	Thallium	0	ug/L	+/-0.05	
	Uranium	.15	ug/L	+/-0.07	
	Boron	992	ug/L	+/-81	
	Arsenic	.2	ug/L	+/-0.1	
	Selenium	1	ug/L	+/-2	
	Antimony	.5	ug/L	+/-0.25	
	Cobalt	.14	ug/L	+/-0.09	
3060L1	Mercury	.02	ug/L	<=W	
3144L1	Chloroethene	.05	ug/L	<=W	
	1,1-dichloroethene	.05	ug/L	<=W	
	Dichloromethane	.5	ug/L	<=W	
	Tert-butyl methyl ether	.05	ug/L	<=W	
	trans-1,2-dichloroethene	.05	ug/L	<=W	

Field ID:	SHB2-10-30-01
Sample ID:	C88668-0001
MOEE*LIMS ID:	2001WD44-00088
Station ID:	2100005867404
Collect Date:	2001-OCT-30
Sample Location Description:	WELL 1 TREATED
Sample Comments Description:	MICROBIOLOGY SAMPLE BROKEN IN TRANSIT

Listid	Parameter	Value	Units	Qual	Rmks
	1,1-dichloroethane	.05	ug/L	<=W	
	cis-1,2-dichloroethene	.05	ug/L	<=W	
	Chloroform	0.2	ug/L	<T	
	1,1,1-trichloroethane	.05	ug/L	<=W	
	1,2-dichloroethane	.1	ug/L	<=W	
	Carbon tetrachloride	.2	ug/L	<=W	
	Benzene	.05	ug/L	<=W	
	1,2-dichloropropane	.05	ug/L	<=W	
	Trichloroethene	.05	ug/L	<=W	
	Bromodichloromethane	.2	ug/L	<=W	
	Toluene	.05	ug/L	<=W	
	1,2-dibromoethane	.1	ug/L	<=W	
	1,1,2-trichloroethane	.1	ug/L	<=W	
	Dibromochloromethane	.2	ug/L	<=W	
	Tetrachloroethene	.05	ug/L	<=W	
	Chlorobenzene	.05	ug/L	<=W	
	Ethylbenzene	.05	ug/L	<=W	
	m-xylene	.05	ug/L	<=W	
	p-xylene	.05	ug/L	<=W	
	Bromoform	.5	ug/L	<=W	
	Styrene	.05	ug/L	<=W	
	o-xylene	.05	ug/L	<=W	
	1,1,2,2-tetrachloroethane	.1	ug/L	<=W	
	1,4-dichlorobenzene	.05	ug/L	<=W	
	1,3-dichlorobenzene	.05	ug/L	<=W	
	1,2-dichlorobenzene	.05	ug/L	<=W	
	Trihalomethanes; total	.5	ug/L	<=W	
3172L3	Fluoride	0.155	mg/L		
3311L1	Turbidity	0.20	FTU	<T	

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 28, 2001 10:09 pm
Login: C88668

Field ID:	SHB2-10-30-01
Sample ID:	C88668-0001
MOEE*LIMS ID:	2001WD44-00088
Station ID:	2100005867404
Collect Date:	2001-OCT-30
Sample Location Description:	WELL 1 TREATED
Sample Comments Description:	MICROBIOLOGY SAMPLE BROKEN IN TRANSIT

Listid	Parameter	Value	Units	Qual	Rmks
3364L1	Nitrogen; ammonia+ammonium	0.462	mg/L		
	Nitrogen; nitrite	0.004	mg/L	<T	
	Nitrogen; nitrate+nitrite	0.033	mg/L		
	Phosphorus; phosphate	0.0015	mg/L	<T	

REMARK CODES

<=W	NO MEASURABLE RESPONSE (ZERO): <REPORTED VALUE	<T	A MEASURABLE TRACE AMOUNT:INTERPRET WITH CAUTION	RRV	REPORTED RESULT VERIFIED BY REPEAT ANALYSIS

** End of Report **

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 08, 2001 07:59 am
Login: C88752

LOGIN DESCRIPTION: 210000586 WINCHESTER WS

Program Code: 130072201

Program : MOEE OPERATIONS DIVISION
Study : WATER, COMMUNAL
Project : EASTERN REGION - KINGSTON DIST
Activity : INSPECTION OF MUNIC WTP (SWIP)

Organization: 132010014615

Mail this copy to:

HAMILTON-BROWNE, SHANNON
MOE - CORNWALL AREA OFFICE
113 AMELIA STREET
CORNWALL, ONT
K6H 3P1

Final reports to: HAMILTON-BROWNE, SHANNON

Inquires to: LORNA GREY Telephone: 416-235-5894
PAUL YANG Telephone: 416-235-6004

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 08, 2001 07:59 am
Login: C88752

Field ID	Station ID	Sample Location Description	Sampling Date	Zone	Sampler Information
SHB-11-01-01	2100005867404	WELL 1 TREATED	2001-NOV-01	5	

Sample ID	Sample Comment Description
C88752-0001	

MOEE*LIMS Products Requested:

WD E3226A PA3226 WD E3408A PC3408

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 08, 2001 07:59 am
Login: C88752

FINAL ANALYTICAL RESULTS

Field ID:	SHB-11-01-01
Sample ID:	C88752-0001
MOEE*LIMS ID:	2001WD44-00156
Station ID:	2100005867404
Collect Date:	2001-NOV-01
Sample Location Description:	WELL 1 TREATED
Sample Comments Description:	

Listid	Parameter	Value	Units	Qual	Rmks
3226L1	NT: Total Coliforms	See Non-Target Textual Result			
	NT: Escherichia coli	See Non-Target Textual Result			
	NT: Deterioration Indicators	See Non-Target Textual Result			
3408L1	Heterotrophic bacteria (HB35)	90.	c/mL	<=>	

REMARK CODES

<=> APPROXIMATE RESULT NDAE NO DATA: ABSENT NT: ESCHERICHIA COLI NDAT NO DATA: ABSENT NT: TOTAL COLIFORMS
NDDN NO DATA: NOT DETECTED NT: DETERIORATION INDICATORS

NON-TARGET TEXTUAL RESULT

Sample ID: C88752-0001 Listid: 3226L1 Units: c/100mL Parmname: NT: Total Coliforms Value: Qual: NDAT Remarks:
Absent

Sample ID: C88752-0001 Listid: 3226L1 Units: c/100mL Parmname: NT: Escherichia coli Value: Qual: NDAE Remarks:
Absent

Sample ID: C88752-0001 Listid: 3226L1 Units: c/100mL Parmname: NT: Deterioration Indicators Value: Qual: NDDN Remarks:
Not Detected

** End of Report **

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 28, 2001 10:09 pm
Login: C88669

LOGIN DESCRIPTION: 210000586 WINCHESTER WS

Program Code: 130072201

Program : MOEE OPERATIONS DIVISION
Study : WATER, COMMUNAL
Project : EASTERN REGION - KINGSTON DIST
Activity : INSPECTION OF MUNIC WTP (SWIP)

Organization: 132010014615

Mail this copy to: HAMILTON-BROWNE, SHANNON
HOE - CORNWALL AREA OFFICE
113 AMELIA STREET
CORNWALL, ONT
K6H 3P1

Final reports to: HAMILTON-BROWNE, SHANNON

Inquires to: LORNA GREY Telephone: 416-235-5894
PAUL YANG Telephone: 416-235-6004

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 28, 2001 10:09 pm
Login: C88669

Field ID	Station ID	Sample Location Description	Sampling Date	Zone	Sampler Information
SHB4-10-30-01	2100005867405	WELL 5 TREATED	2001-OCT-30	5	

Sample ID
C88669-0001

Sample Comment Description

MOEE*LIMS Products Requested:

WD	E3051A	MET3051	WD	E3060B	HG3060	WD	E31448	VOL3144	WD	E3172A	F3172	WD	E3196A	IBC3196
WD	E3226A	PA3226	WD	E3274A	LIC3274	WD	E3311A	TURB3311	WD	E3364A	DISNUT3364	WD	E3408A	PC3408

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 28, 2001 10:09 pm
Login: C88669

FINAL ANALYTICAL RESULTS

Field ID:	SHB4-10-30-01
Sample ID:	C88669-0001
MOEE*LIMS ID:	2001WD44-00089
Station ID:	2100005867405
Collect Date:	2001-OCT-30
Sample Location Description:	WELL 5 TREATED
Sample Comments Description:	

Listid	Parameter	Value	Units	Qual	Rmks
3051L1	Copper	147	ug/L	+/-9.2	
	Nickel	5.8	ug/L	+/-1.1	
	Zinc	3.3	ug/L	+/-1.6	
	Cadmium	.01	ug/L	+/-0.07	
	Chromium	4.7	ug/L	+/-0.8	
	Lead	.29	ug/L	+/-0.07	
	Iron	41	ug/L	+/-9	
	Manganese	29.5	ug/L	+/-2.92	
	Aluminum	.7	ug/L	+/-0.3	
	Vanadium	.79	ug/L	+/-0.58	
	Molybdenum	.3	ug/L	+/-0.29	
	Silver	.02	ug/L	+/-0.05	
	Barium	118	ug/L	+/-7.35	
	Beryllium	.07	ug/L	+/-0.25	
	Strontium	4440	ug/L	+/-223	RRV
	Titanium	4.6	ug/L	+/-0.8	
	Thallium	0	ug/L	+/-0.05	
	Uranium	.06	ug/L	+/-0.05	
	Boron	760	ug/L	+/-47	
	Arsenic	.4	ug/L	+/-0.3	
	Selenium	2	ug/L	+/-3	AIN
	Antimony	.51	ug/L	+/-0.39	
	Cobalt	.22	ug/L	+/-0.28	
3060L1	Mercury	.02	ug/L	<=W	
3144L1	Chloroethene	.05	ug/L	<=W	
	1,1-dichloroethene	.05	ug/L	<=W	
	Dichloromethane	.5	ug/L	<=W	
	Tert-butyl methyl ether	.05	ug/L	<=W	
	trans-1,2-dichloroethene	.05	ug/L	<=W	

Field ID:	SHB4-10-30-01
Sample ID:	C88669-0001
MOEE*LIMS ID:	2001WD44-00089
Station ID:	2100005867405
Collect Date:	2001-OCT-30
Sample Location Description:	WELL 5 TREATED
Sample Comments Description:	

Listid	Parameter	Value	Units	Qual	Rmks
	1,1-dichloroethane	.05	ug/L	<=W	
	cis-1,2-dichloroethene	.05	ug/L	<=W	
	Chloroform	0.6	ug/L	<T	
	1,1,1-trichloroethane	.05	ug/L	<=W	
	1,2-dichloroethane	.1	ug/L	<=W	
	Carbon tetrachloride	.2	ug/L	<=W	
	Benzene	.05	ug/L	<=W	
	1,2-dichloropropane	.05	ug/L	<=W	
	Trichloroethene	.05	ug/L	<=W	
	Bromodichloromethane	0.6	ug/L	<T	
	Toluene	.05	ug/L	<=W	
	1,2-dibromoethane	.1	ug/L	<=W	
	1,1,2-trichloroethane	.1	ug/L	<=W	
	Dibromochloromethane	0.4	ug/L	<T	
	Tetrachloroethene	.05	ug/L	<=W	
	Chlorobenzene	.05	ug/L	<=W	
	Ethylbenzene	.05	ug/L	<=W	
	m-xylene	.05	ug/L	<=W	
	p-xylene	.05	ug/L	<=W	
	Bromoform	.5	ug/L	<=W	
	Styrene	.05	ug/L	<=W	
	o-xylene	.05	ug/L	<=W	
	1,1,2,2-tetrachloroethane	.1	ug/L	<=W	
	1,4-dichlorobenzene	.05	ug/L	<=W	
	1,3-dichlorobenzene	.05	ug/L	<=W	
	1,2-dichlorobenzene	.05	ug/L	<=W	
	Trihalomethanes; total	1.5	ug/L	<T	
3172L3	Fluoride	0.243	mg/L		
3226L1	NT: Total Coliforms	See Non-Target Textual Result			

Field ID:	SHB4-10-30-01
Sample ID:	C88669-0001
MOEE*LIMS ID:	2001WD44-00089
Station ID:	2100005867405
Collect Date:	2001-OCT-30
Sample Location Description:	WELL 5 TREATED
Sample Comments Description:	

Listid	Parameter	Value	Units	Qual	Rmks
	NT: Escherichia coli	See Non-Target Textual Result			
	NT: Deterioration Indicators	See Non-Target Textual Result			
3311L1	Turbidity	0.23	FTU	<T	
3364L1	Nitrogen; ammonia+ammonium	0.004	mg/L	<T	
	Nitrogen; nitrite	.001	mg/L	<=W	
	Nitrogen; nitrate+nitrite	0.014	mg/L	<T	
	Phosphorus; phosphate	0.0050	mg/L		
3408L1	Heterotrophic bacteria (HB35)	10.	c/mL	<	

REMARK CODES					
<	ACTUAL RESULT IS LESS THAN THE REPORTED VALUE	<=W	NO MEASURABLE RESPONSE (ZERO): <REPORTED VALUE	<T	A MEASURABLE TRACE AMOUNT:INTERPRET WITH CAUTION
AIN	APPROX.RESULT: INTERFERENCE SUSPECTED	NDAE	NO DATA: ABSENT NT: ESCHERICHIA COLI	NDAT	NO DATA: ABSENT NT: TOTAL COLIFORMS
NDDN	NO DATA: NOT DETECTED NT: DETERIORATION INDICATORS	RRV	REPORTED RESULT VERIFIED BY REPEAT ANALYSIS		

NON-TARGET TEXTUAL RESULT

Sample ID:	Listid:	Units:	Parmname:	Value:	Qual:	Remarks:
C88669-0001	3226L1	c/100mL	NT: Total Coliforms		NDAT	
Absent						

Sample ID:	Listid:	Units:	Parmname:	Value:	Qual:	Remarks:
C88669-0001	3226L1	c/100mL	NT: Escherichia coli		NDAE	
Absent						

Sample ID:	Listid:	Units:	Parmname:	Value:	Qual:	Remarks:
C88669-0001	3226L1	c/100mL	NT: Deterioration Indicators		NDDN	
Not Detected						

** End of Report **

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 28, 2001 10:09 pm
Login: C88670

LOGIN DESCRIPTION: 210000586 WINCHESTER WS

Program Code: 130072201

Program : MOEE OPERATIONS DIVISION
Study : WATER, COMMUNAL
Project : EASTERN REGION - KINGSTON DIST
Activity : INSPECTION OF MUNIC WTP (SWIP)

Organization: 132010014615

Mail this copy to:

HAMILTON-BROWNE, SHANNON
MOE - CORNWALL AREA OFFICE
113 AMELIA STREET
CORNWALL, ONT
K6H 3P1

Final reports to: HAMILTON-BROWNE, SHANNON

Inquires to: LORNA GREY Telephone: 416-235-5894
PAUL YANG Telephone: 416-235-6004

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 28, 2001 10:09 pm
Login: C88670

Field ID	Station ID	Sample Location Description	Sampling Date	Zone	Sampler Information
SHB5-10-30-01	2100005867406	WELL 6 TREATED	2001-OCT-30	5	

Sample ID	Sample Comment Description
C88670-0001	

MOEE*LIMS Products Requested:

WD	E3051A	MET3051	WD	E3060B	HG3060	WD	E3144B	VOL3144	WD	E3172A	F3172	WD	E3196A	IBC3196
WD	E3226A	PA3226	WD	E3274A	LIC3274	WD	E3311A	TURB3311	WD	E3364A	DISNUT3364	WD	E3408A	PC3408

Ontario Ministry of Environment
Central Laboratory - 125 Resources Road
FINAL REPORT (manager)
Nov 28, 2001 10:09 pm
Login: C88670

FINAL ANALYTICAL RESULTS

Field ID:	SHB5-10-30-01
Sample ID:	C88670-0001
MOEE*LIMS ID:	2001WD44-00090
Station ID:	2100005867406
Collect Date:	2001-OCT-30
Sample Location Description:	WELL 6 TREATED
Sample Comments Description:	

Listid	Parameter	Value	Units	Qual	Rmks
3051L1	Copper	109	ug/L	+/-7.1	
	Nickel	14.4	ug/L	+/-3.2	
	Zinc	8.9	ug/L	+/-2.5	
	Cadmium	.02	ug/L	+/-0.05	
	Chromium	2.9	ug/L	+/-2.1	
	Lead	1.23	ug/L	+/-0.25	
	Iron	134	ug/L	+/-13	
	Manganese	13.2	ug/L	+/-1.02	
	Aluminum	.6	ug/L	+/-0.2	
	Vanadium	.33	ug/L	+/-0.29	
	Molybdenum	1.78	ug/L	+/-0.57	
	Silver	.01	ug/L	+/-0.05	
	Barium	70.4	ug/L	+/-5.07	
	Beryllium	.02	ug/L	+/-0.07	
	Strontium	4050	ug/L	+/-204	RRV
	Titanium	5.2	ug/L	+/-2.7	
	Thallium	0	ug/L	+/-0.05	
	Uranium	.74	ug/L	+/-0.07	
	Boron	178	ug/L	+/-13	
	Arsenic	.2	ug/L	+/-0.1	
	Selenium	2	ug/L	+/-1	
	Antimony	.42	ug/L	+/-0.22	
	Cobalt	.3	ug/L	+/-0.2	
3060L1	Mercury	.02	ug/L	<=W	
3144L1	Chloroethene	.05	ug/L	<=W	
	1,1-dichloroethene	.05	ug/L	<=W	
	Dichloromethane	.5	ug/L	<=W	
	Tert-butyl methyl ether	.05	ug/L	<=W	
	trans-1,2-dichloroethene	.05	ug/L	<=W	

Field ID:	SHB5-10-30-01
Sample ID:	C88670-0001
MOEE*LIMS ID:	2001WD44-00090
Station ID:	2100005867406
Collect Date:	2001-OCT-30
Sample Location Description:	WELL 6 TREATED
Sample Comments Description:	

Listid	Parameter	Value	Units	Qual	Rmks
	1,1-dichloroethane	.05	ug/L	<=W	
	cis-1,2-dichloroethene	.05	ug/L	<=W	
	Chloroform	0.1	ug/L	<T	
	1,1,1-trichloroethane	.05	ug/L	<=W	
	1,2-dichloroethane	.1	ug/L	<=W	
	Carbon tetrachloride	.2	ug/L	<=W	
	Benzene	.05	ug/L	<=W	
	1,2-dichloropropane	.05	ug/L	<=W	
	Trichloroethene	.05	ug/L	<=W	
	Bromodichloromethane	.2	ug/L	<=W	
	Toluene	.05	ug/L	<=W	
	1,2-dibromoethane	.1	ug/L	<=W	
	1,1,2-trichloroethane	.1	ug/L	<=W	
	Dibromochloromethane	0.2	ug/L	<T	
	Tetrachloroethene	.05	ug/L	<=W	
	Chlorobenzene	.05	ug/L	<=W	
	Ethylbenzene	.05	ug/L	<=W	
	m-xylene	.05	ug/L	<=W	
	p-xylene	.05	ug/L	<=W	
	Bromoform	.5	ug/L	<=W	
	Styrene	.05	ug/L	<=W	
	o-xylene	.05	ug/L	<=W	
	1,1,2,2-tetrachloroethane	.1	ug/L	<=W	
	1,4-dichlorobenzene	.05	ug/L	<=W	
	1,3-dichlorobenzene	.05	ug/L	<=W	
	1,2-dichlorobenzene	.05	ug/L	<=W	
	Trihalomethanes; total	.5	ug/L	<=W	
3172L3	Fluoride	0.0760	mg/L		
3226L1	NT: Total Coliforms	See Non-Target Textual Result			

Field ID:	SHB5-10-30-01
Sample ID:	C88670-0001
MOEE*LIMS ID:	2001WD44-00090
Station ID:	2100005867406
Collect Date:	2001-OCT-30
Sample Location Description:	WELL 6 TREATED
Sample Comments Description:	

Listid	Parameter	Value	Units	Qual	Rmks
	NT: Escherichia coli	See Non-Target Textual Result			
	NT: Deterioration Indicators	See Non-Target Textual Result			
3311L1	Turbidity	0.17	FTU	<T	
3364L1	Nitrogen; ammonia+ammonium	0.004	mg/L	<T	
	Nitrogen; nitrite	.001	mg/L	<=W	
	Nitrogen; nitrate+nitrite	0.011	mg/L	<T	
	Phosphorus; phosphate	0.0035	mg/L		
3408L1	Heterotrophic bacteria (HB35)	10.	c/mL	<	

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REMARK CODES					
<	ACTUAL RESULT IS LESS THAN THE REPORTED VALUE	<=W	NO MEASURABLE RESPONSE (ZERO): <REPORTED VALUE	<T	A MEASURABLE TRACE AMOUNT:INTERPRET WITH CAUTIO
BG	BACTERIAL GROWTH DETECTED AT 72 HR. NO ACID/GAS	NDAE	NO DATA: ABSENT NT: ESCHERICHIA COLI	NDAT	NO DATA: ABSENT NT: TOTAL COLIFORMS
NDDN	NO DATA: NOT DETECTED NT: DETERIORATION INDICATORS	RRV	REPORTED RESULT VERIFIED BY REPEAT ANALYSIS		

NON-TARGET TEXTUAL RESULT

Sample ID:	Listid:	Units:	Parmname:	Value:	Qual:	Remarks:
C88670-0001	3226L1	c/100mL	NT: Total Coliforms		NDAT	
Absent						
C88670-0001	3226L1	c/100mL	NT: Escherichia coli		NDAE	
Absent						
C88670-0001	3226L1	c/100mL	NT: Deterioration Indicators		NDDN	BG
Not Detected						

** End of Report **

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LOGIN DESCRIPTION: 210000586 WINCHESTER WS

Program Code: 130072201

Program : MOEE OPERATIONS DIVISION
Study : WATER, COMMUNAL
Project : EASTERN REGION - KINGSTON DIST
Activity : INSPECTION OF MUNIC WTP (SWIP)

Organization: 132010014615

Mail this copy to:

HAMILTON-BROWNE, SHANNON
MOE - CORNWALL AREA OFFICE
113 AMELIA STREET
CORNWALL, ONT
K6H 3P1

Final reports to: HAMILTON-BROWNE, SHANNON

Inquires to: LORNA GREY Telephone: 416-235-5894
PAUL YANG Telephone: 416-235-6004

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Field ID	Station ID	Sample Location Description	Sampling Date	Zone	Sampler Information
SHB6-10-30-01	2100005867403	WELL 7 TREATED	2001-OCT-30	5	

Sample ID	Sample Comment Description
C88671-0001	

MOEE*LIMS Products Requested:

WD	E3051A	MET3051	WD	E3060B	HG3060	WD	E3144B	VOL3144	WD	E3172A	F3172	WD	E3196A	IBC3196
WD	E3226A	PA3226	WD	E3274A	LIC3274	WD	E3311A	TURB3311	WD	E3364A	DISNUT3364	WD	E3408A	PC3408

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FINAL ANALYTICAL RESULTS

Field ID:	SHB6-10-30-01
Sample ID:	C88671-0001
MOEE*LIMS ID:	2001WD44-00091
Station ID:	2100005867403
Collect Date:	2001-OCT-30
Sample Location Description:	WELL 7 TREATED
Sample Comments Description:	

Listid	Parameter	Value	Units	Qual	Rmks
3051L1	Copper	7.6	ug/L	+/-1.7	
	Nickel	15.1	ug/L	+/-1.9	
	Zinc	4.9	ug/L	+/-1.9	
	Cadmium	.02	ug/L	+/-0.05	
	Chromium	1.5	ug/L	+/-1.3	
	Lead	.34	ug/L	+/-0.05	
	Iron	11	ug/L	+/-6	
	Manganese	27.6	ug/L	+/-2.32	
	Aluminum	.7	ug/L	+/-0.3	
	Vanadium	.13	ug/L	+/-0.36	
	Molybdenum	.56	ug/L	+/-0.22	
	Silver	.01	ug/L	+/-0.05	
	Barium	187	ug/L	+/-13.6	
	Beryllium	-.01	ug/L	+/-0.09	
	Strontium	351	ug/L	+/-22.3	
	Titanium	3.8	ug/L	+/-3	
	Thallium	.01	ug/L	+/-0.05	
	Uranium	.75	ug/L	+/-0.08	
	Boron	38	ug/L	+/-7	
	Arsenic	.2	ug/L	+/-0.1	
	Selenium	1	ug/L	+/-2	
	Antimony	.43	ug/L	+/-0.3	
	Cobalt	.1	ug/L	+/-0.23	
3060L1	Mercury	.02	ug/L	<=W	
3144L1	Chloroethene	.05	ug/L	<=W	
	1,1-dichloroethene	.05	ug/L	<=W	
	Dichloromethane	.5	ug/L	<=W	
	Tert-butyl methyl ether	.05	ug/L	<=W	
	trans-1,2-dichloroethene	.05	ug/L	<=W	

Field ID:	SHB6-10-30-01
Sample ID:	C88671-0001
MOEE*LIMS ID:	2001WD44-00091
Station ID:	2100005867403
Collect Date:	2001-OCT-30
Sample Location Description:	WELL 7 TREATED
Sample Comments Description:	

Listid	Parameter	Value	Units	Qual	Rmks
	1,1-dichloroethane	.05	ug/L	<=W	
	cis-1,2-dichloroethene	.05	ug/L	<=W	
	Chloroform	0.4	ug/L	<T	
	1,1,1-trichloroethane	.05	ug/L	<=W	
	1,2-dichloroethane	.1	ug/L	<=W	
	Carbon tetrachloride	.2	ug/L	<=W	
	Benzene	.05	ug/L	<=W	
	1,2-dichloropropane	.05	ug/L	<=W	
	Trichloroethene	.05	ug/L	<=W	
	Bromodichloromethane	.2	ug/L	<=W	
	Toluene	.05	ug/L	<=W	
	1,2-dibromoethane	.1	ug/L	<=W	
	1,1,2-trichloroethane	.1	ug/L	<=W	
	Dibromochloromethane	.2	ug/L	<=W	
	Tetrachloroethene	.05	ug/L	<=W	
	Chlorobenzene	.05	ug/L	<=W	
	Ethylbenzene	.05	ug/L	<=W	
	m-xylene	.05	ug/L	<=W	
	p-xylene	.05	ug/L	<=W	
	Bromoform	.5	ug/L	<=W	
	Styrene	.05	ug/L	<=W	
	o-xylene	.05	ug/L	<=W	
	1,1,2,2-tetrachloroethane	.1	ug/L	<=W	
	1,4-dichlorobenzene	.05	ug/L	<=W	
	1,3-dichlorobenzene	.05	ug/L	<=W	
	1,2-dichlorobenzene	.05	ug/L	<=W	
	Trihalomethanes; total	.5	ug/L	<=W	
3172L3	Fluoride	0.0650	mg/L		
3226L1	NT: Total Coliforms	See Non-Target Textual Result			

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Nov 28, 2001 10:09 pm
Login: C88671

Field ID:	SHB6-10-30-01
Sample ID:	C88671-0001
MOEE*LIMS ID:	2001WD44-00091
Station ID:	2100005867403
Collect Date:	2001-OCT-30
Sample Location Description:	WELL 7 TREATED
Sample Comments Description:	

Listid	Parameter	Value	Units	Qual	Rmks
	NT: Escherichia coli	See Non-Target Textual Result			
	NT: Deterioration Indicators	See Non-Target Textual Result			
3311L1	Turbidity	0.15	FTU	<T	
3364L1	Nitrogen; ammonia+ammonium	0.006	mg/L	<T	
	Nitrogen; nitrite	.001	mg/L	<=W	
	Nitrogen; nitrate+nitrite	0.503	mg/L		
	Phosphorus; phosphate	0.0020	mg/L	<T	
3408L1	Heterotrophic bacteria (HB35)	10.	c/mL	<	

REMARK CODES

<	ACTUAL RESULT IS LESS THAN THE REPORTED VALUE	<=W	NO MEASURABLE RESPONSE (ZERO): <REPORTED VALUE	<T	A MEASURABLE TRACE AMOUNT:INTERPRET WITH CAUTIC
NDAE	NO DATA: ABSENT NT: ESCHERICHIA COLI	NDAT	NO DATA: ABSENT NT: TOTAL COLIFORMS	NDDN	NO DATA: NOT DETECTED NT: DETERIORATION INDICAT

NON-TARGET TEXTUAL RESULT

Sample ID:	Listid:	Units:	Parmname:	Value:	Qual:	Remarks:
C88671-0001	3226L1	c/100mL	NT: Total Coliforms		NDAT	
Absent						
C88671-0001	3226L1	c/100mL	NT: Escherichia coli		NDAE	
Absent						
C88671-0001	3226L1	c/100mL	NT: Deterioration Indicators		NDDN	
Not Detected						

** End of Report **