Ontario

Ministry of the Environment

CHESTERVILLE WELL SUPPLY

Drinking Water System Inspection Report

DWS Number:	210000728
Inspection Number:	1-47WVD
Date of Inspection:	Aug 24, 2005
Inspected By:	Jan Franssen

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OWNER INFORMATION:

Company Name:	NORTH DUNDAS, THE TOWNSHIP OF		
Street Number:	636	**Unit Identifier:**	
Street Name:	ST. LAWRENCE St		
County/District:			
District/Area Office:			
City:	WINCHESTER		
Province:	ON	**Postal Code:**	K0C 2K0

CONTACT INFORMATION

Type:	Operating Authority	**Name:**	Blair Henderson
Phone:	(613) 448-3098	**Fax:**	(613) 448-1616
Email:	bhenderson@ocwa.com		
Title:	Operations Manager		

Type:	Owner	**Name:**	Howard Smith
Phone:	(613) 774-2105 x231	**Fax:**	(613) 774-5699
Email:	hsmith@northdundas.com		
Title:	Chief Administrative Officer		

INSPECTION DETAILS:

DWS Name:	CHESTERVILLE WELL SUPPLY
DWS Address:	1 Brannen Road
DWS Category:	Large Municipal Residential
DWS Number:	210000728
Inspection Type:	Announced
Inspection Number:	1-47WVD
Date of Inspection:	Aug 24, 2005
Date of Previous Inspection:	Nov 23, 2004

DRINKING WATER SYSTEM COMPONENTS DESCRIPTION

Site (Name): WELL 5
Type: Source **Sub Type:** Ground
Comments:
The Chesterville waterworks draws water from a single groundwater supply well, Well No. 5, located on Lot 12, Concession V, approximately 3.8 km west of the Village of Chesterville and 200 m north of Highway 43. Following a review of the May 15, 2002 hydrogeological study report the Ministry concurred with the conclusion that this source is groundwater not under the influence of surface water. Well No. 5 is situated inside a dedicated well house. A second well, Well No. 5 Standby, is situated adjacent to the well house approximately 6 m north of Well No. 5. It is situated within a protective concrete casing. The pump has been removed from the Well 5 Standby Well and the operating authority has indicated that this well will no longer be used as a potential source but instead will be used as a groundwater monitoring well.

A review of the Water Well Record indicates that Well No. 5 was drilled on January 23, 1989 to a depth of 40 feet below ground surface (bgs) into sand and gravel. The well record indicates that a 30 inch diameter concrete casing was installed to a depth of 20 feet bgs, and that a 10 inch diameter steel casing was installed to the base of the well. A submersible turbine pump is installed in the well.

GPS coordinates: NAD 83, Zone 18, 0477866 E / 4994078 N.

Site (Name): WELL 6
Type: Other **Sub Type:** Other
Comments:

In September 2003 an additional well (Well 6) was drilled approximately 100 m north of the Well 5 pumphouse. The Townships hydrogeological consultant has indicated that Well 6 is drilled into the same aquifer as Well 5.

The Township's engineering consultant (Stantec Consulting Ltd. of Ottawa, Ontario) is preparing a GUDI study report for Well 6 based on the results of the 30-day pumping test that was conducted in July 2005. Water from Well 6 will not be directed into the distribution system until after an amended CofA is issued by the MOE.

Site (Name): WATER TREATMENT PLANT
Type: Treated Water POE **Sub Type:** Reservoir
Comments:

Raw water from Well No. 5 is pumped into a pump house situated above the well. A feed line injects sodium hypochlorite from two solution tanks (one duty and one standby) via two chemical metering pumps (one duty and one standby). The water flows via a transmission main to the water treatment plant located at 1 Brannen Road, Chesterville. There are no service connections along the length of the transmission. Instrumentation at the water treatment plant consists of: raw water flow meter, chlorine analyzer, and water tower level recorder.

The Water Treatment Plant is equipped with the following components: i) two underground reservoir cells with a total effective capacity of 407 m3; ii) an underground suction well with an effective storage capacity of 122 m3 located directly underneath the high-lift pumps; iii) four high lift vertical turbine pumps (2 duty, 2 stand-by) pumping to the distribution system; iv) a sodium hypochlorite disinfection system consisting of a sodium hypochlorite solution storage tank and two chemical metering pumps (1 duty, 1 stand-by) with a feed line discharging into the raw water line flowing to the clearwell; v) a diesel stand-by power generator set located within the building; vi) a continuous chlorine analyzer and turbidity meter; and all associated piping, electrical and mechanical equipment, ventilation, monitoring, control, metering and alarm systems and instrumentation.

GPS coordinates: NAD 83, Zone 18, 0481161 E / 4994552 N.

Site (Name): WATER TOWER
Type: Treated Water POE **Sub Type:** Reservoir
Comments:

A water tower with a capacity of 570 cubic meters is connected to the distribution system at 225 Main Street North. There are no disinfection systems at the water tower or at any other point in the distribution system. A chart recorder located at the water treatment plant records the level of water in the water tower. When the water level in the tank drops to a preset limit, the highlift pumps at the reservoir are activated.

GPS coordinates: NAD 83, Zone 18, 0481561 E / 4995040 N.

Site (Name): DISTRIBUTION (WATER INSPECTION)
Type: Other **Sub Type:** Other

Comments:

The distribution system consists of an elevated tower and approximately 10.6 km of distribution piping. The operating authority stated that the distribution lines are constructed of cement asbestos pipes that were installed in the 1960's. There are no metering devices in place within the distribution system.

INSPECTION SUMMARY

INTRODUCTION

* **The primary focus of this inspection is to confirm compliance with Ministry of the Environment legislation and control documents, as well as conformance with Ministry drinking water related policies for the inspection period. The Ministry is implementing a rigorous and comprehensive approach in the inspection of water systems that focuses on the source, treatment, and distribution components as well as water system management practices.**

SOURCE

* **There was adequate separation distance, as defined in Regulation 903, between each well and sources of pollution.**

  The Inspection did not reveal any potential sources of pollution within 30 meters of either Well 5 or Well 6.

* **There was no evidence of the application of nutrients closer than 100 metres to any of the municipal wells.**

* **It appears that the owner was maintaining the well in a manner sufficient to prevent entry of surface water and foreign materials.**

* **The well had a securely affixed well cap.**

  Well 5 Production Well is sealed and secure within the raw water pump house. Well 5 is no longer equipped with a pump and Well 6 is not yet connected to the system. The owner should ensure that both the former Well 5 Standby Well and the new Well 6 are equipped with locking well caps.

* **The well casing extended to the minimum height required by Regulation 903.**

* **The surface drainage around the wellhead was such that water will not collect or pond in the vicinity of the well.**

* **There is evidence that the annular space around the casing of each well was adequately filled with sealing material when the well was constructed.**

  A review of the water well record indicated that the production well was sealed with cement grout to a depth of 21 feet below ground surface.

* **The below ground connection to the well was made with a well seal or pitless adaptor.**

SOURCE

* **A GUDI assessment was performed which confirmed the source as groundwater.**

  Although not a formal GUDI report, a hydrogeological study report completed by Golder Associates was submitted to the MOE's Environmental Assessment and Approvals Branch (EAAB) on May 15, 2002. The report concluded that Well No. 5 Production Well was not under the direct influence of surface water. Following an assessment of the report and supplementary information provided to the MOE, the EAAB concluded that the Well No. 5 should be classified as groundwater not under the direct influence of surface water.

  A GUDI assessment report for Well 6 is currently being prepared by the Township's hydrogeological consultant. The operating authority has indicated that the well will likely be classified as not GUDI.

* **The Engineer's Report made note of potential sources of microbiological contamination.**

  The Engineer's Report referenced the Well 5 hydrogeological report described above.

* **Trends in source water quality were being monitored by the owner/operating authority.**

  Weekly raw water samples are being collected from both the production and standby wells and submitted for microbiological testing. These results are monitored and tabulated by the operating authority.

* **Trends in water quantity/takings were being monitored by the owner/operating authority.**

  Raw water flow rates are being recorded. These results are tabulated and evaluated by the operating authority.

* **There was no evidence of significant historical fluctuations in water quality and quantity.**

* **Hydrogeological reports existed that contained reviewable raw water characterization data.**

PERMIT TO TAKE WATER

* **A Permit to Take Water (PTTW) was required.**

  The terms and conditions of the pumping of the wells are described in the MOE Permit To Take Water (PTTW) 89-P-4052. The Well 5 PTTW is valid until July 31, 2009 and permits the taking of up to 1,950 cubic meters per day from each of the wells.

  On February 14, 2005 PTTW 0045-68USZA was issued to the Township to permit pumping tests at Well 5 and 6. This permit expires December 31, 2005. The pump test was successfully completed and a report on the findings of the test is currently being prepared by the Townships hydrogeological consultant.

* **All of the production sources were identified on the PTTW.**

* **There were no PTTWs which were beyond their expiry date.**

PERMIT TO TAKE WATER

* **The maximum water takings were in accordance with those allowed under the PTTW.**

  The PTTW authorizes the taking of no more than 1,950,000 L/day from each of the Well 5 Production Well and the Well 5 Standby Well. A review of the records provided by the operating authority indicated that over the course of the inspection period the maximum recorded taking from the Well 5 Production Well was 1,243,000 L/day. The Operating Authority indicated that the Standby Well has not be used to supply water to the distribution system.

* **Aquifer levels were being monitored in accordance with the PTTW or other directions.**

  The Well 5 PTTW includes three Special Conditions to ensure that the water taking does not interfere with established uses or users of the groundwater resource.

  Special Condition 15 of the PTTW requires that the owner monitor the water levels in neighboring wells in accordance with the monitoring program proposed by Water and Earth Science Associates in their letter of July 24, 1997. The letter proposes that the owner monitor water levels in TW4, TW5 and P7 every 3 months concurrently with a water level reading at the production well. The letter also proposes that a yearly report summarizing the data should be submitted to the Ministry and the report include an interpretation of the data and any possible changes to the monitoring program that may be warranted.

  Special Condition 16 of the PTTW requires that the owner monitor water levels in the production well continuously. A water level recorded is installed in the production well.

  Special Condition 17 requires this water level monitoring information be reviewed on an annual basis to determine the occurrence, or the potential for occurrence, of significant interference with other existing wells. The operating authority submitted an annual report for the monitoring program discussed above. The results indicated that the water well draw down on the production well has not changed significantly and that the monitoring program will be continued as per the conditions outlined in the PTTW.

* **The owner complied with the special conditions in the PTTW during the inspection review period.**

  As descibed above, the owner has complied with these conditions.

* **Records of actions required of the Permit Holder as a result of conditions on the PTTW were maintained in accordance with the requirements of the PTTW.**

* **No complaints of interference due to the water taking were received by the owner/operating authority.**

CAPACITY ASSESSMENT

* **There were a sufficient number of flow measuring devices installed.**

  Condition 5.1 of the CofA requires that flow measuring devices are installed to permit the continuous measurement and recording of the flow rate and daily volume of water conveyed into the treatment system. An electromagnetic flow meter is installed on the treated water discharge line at the water treatment plant.

* **The flow measuring devices were calibrated at the appropriate intervals.**

  The raw water flow meter installed at the Well 5 pumphouse was calibrated by the Operating Authority on April 15, 2005. The treated water flow meter installed at the water treatment plant was calibrated by the operating authority on June 23, 2005.

CAPACITY ASSESSMENT

* **Flow rates were maintained below the maximum flow rates or the rated capacity identified in the Certificate of Approval.**

  Condition 4.1 of the CofA specifies that the Well 5 pumphouse shall not operate to exceed the maximum flow rate of 23 L/s. A review of the operating authority's record of water taking indicates that maximum flow rate over the course of the inspection period was 20 L/s.

* **The annual average daily flow was less than 80% of the capacity of the plant.**

  The 2004 average daily flow was approximately 30% of the capacity of the plant.

* **The owner was monitoring demand and population trends in order to monitor the need to upgrade or expand the system.**

  The Township indicated that they have experienced very limited growth in recent years, however they are in the process of upgrading the capacity of the system through the installation of Well 6 which will provide for capacity lost with the abandonment of Well 1.

TREATMENT PROCESSES

* **Records reviewed during the inspection indicated that the drinking-water system provides the required minimum level of treatment at all times.**

  A review of the data provided by the operating authority indicated that the required minimum level of treatment was provided. The upgrades listed in Part 8 of the CofA have been completed. The Ministry's Environmental Assessment and Approvals Branch indicated in their letter to the Township dated October 8, 2004 that the upgrade requirements listed in Part 8 will not be removed until after a Second Engineer's Report has been submitted and reviewed by the Ministry.

* **The drinking-water system was in compliance with the requirement to provide adequate primary disinfection for ground water sources.**

  A chlorination system was installed at the Well 5 pumphouse on December 22, 2003 to ensure that the waterworks provides adequate primary disinfection. A review of the CT calculation sheets provided by the Operating Authority indicated that at the maximum flow rate (23 L/s) and free chlorine concentrations of 0.2 mg/L the required contact times are exceeded.

* **The operator was aware of the required CT value and the CT value was used in process calculations and process control.**

* **A valid Certificate of Approval existed for the facility.**

  The waterworks operates under CofA 9888-655NVM issued October 8, 2004.

* **The owner ensured that equipment was installed in accordance with the Certificate of Approval.**

* **The owner complied with the requirement to seek changes to the Certificate of Approval where required, when changes were made.**

* **The owner had evidence that indicated that all chemicals used in the treatment process and all materials contacting the water met the AWWA and ANSI standards in accordance with the Certificate of Approval.**

  The operating authority provided documentation indicating that the sodium hypochlorite supplied by Brenntag Canada Inc. conforms to ANSI / NSF standard 60. There are no other process chemicals utilized at this facility.

TREATMENT PROCESSES

* **The owner had up-to-date plans for the drinking-water system in accordance with the Certificate of Approval.**

* **The facility and equipment appeared to be maintained and in a fit state of repair.**

* **It was not possible for raw water or partially treated water to bypass key treatment units.**

  The previous compliance inspection report recommended that the operating authority arrange for the routine inspection of the check valve and backflow preventer on the potential cross connection that exists between the raw water feeder main and the treated water discharge line. This routine inspection was recommended to ensure that these devices are functioning to prevent raw water from bypassing the disinfection process. The Operating Authority confirmed that the check valve and backflow preventer were inspected by Claude Bourck Backflow Preventers and Plumbing in the Spring of 2005.

* **Based on information provided by the owner/operator, it was not likely that contaminants entering the floor drains would have come in contact with the source water or treated water.**

* **Pesticides were not applied, stored, or mixed in the immediate vicinity of water intakes and treatment facilities.**

  The operating authority confirmed that they do not use, store, or mix pesticides near any component of the drinking water system.

* **The Operator-in-Charge ensured that all equipment used in the processes was monitored, inspected, tested and evaluated.**

  The operating authority regularly performs inspection and maintenance of system components. Component maintenance is tracked using a computerized maintenance tracking system.

* **The works profile information in the Ministry's Drinking Water Information System (DWIS) compared favourably to known information.**

PROCESS WASTEWATER

* **The facility generated process wastewater.**

  Waste water from the floor drains and sinks in the water treatment plant are discharged to the sanitary sewer. Treated water fed to the online analyzers is discharged to a soak-a-way pit at the pumphouse and to the sanitary sewer at the water treatment plant. There are no reagents added to the water by either of the analyzers. No other process wastewater is generated at the pumphouse or at the reservoir.

* **Process wastewater was not recycled.**

* **At the time of inspection, there was no evidence of an environmental impact as a result of discharged wastewater.**

DISTRIBUTION SYSTEM

* **The owner had up-to-date plans for the distribution system.**

DISTRIBUTION SYSTEM

* **No cross connections with other water sources such as wells, cisterns or surface water were known to exist at the time of this inspection.**

  The operating authority indicated that they are performing ongoing household inspections to locate potential cross connections. To date no cross connection have been identified.

* **There was a by-law in place to prohibit potential cross connections.**

  Section 1 of Township of North Dundas By-Law 23-2003 states: "no cross connections shall be made or continued to any plumbing that is connected to the municipal water distribution system."

* **A maintenance and repair record system existed for the distribution system.**

* **There was a system for recording maintenance and repairs, leak detection surveys and scheduled inspection/clean-out of water storage structures.**

  The operating authority is responsible for repairs and they confirmed that repairs are performed by certified operators as required by O.Reg 128/04 Section 26. The Inspector noted that the repairs are documented in the logbook.

* **Repairs to the distribution system were overseen by authorized personnel.**

* **The disinfection of new or repaired water mains or facilities was conducted in accordance with procedures equivalent to the applicable AWWA standards.**

* **There was a program for the routine replacement of watermains.**

* **The owner maintained the integrity of the system by using standards or procedures for design and material selection and by using plumbing code requirements.**

  The Township retains the services of a Professional Engineer for distribution system design. Material selection is as per AWWA Standards - C900, C907, C800, C502, C510.

* **There was a program for the flushing and/or swabbing of watermains as per AWWA standards or equivalent.**

* **There was a program for inspecting and exercising valves.**

* **Fire hydrants were regularly inspected and operated.**

* **Hydrants were maintained to prevent entry of backflow contaminants.**

* **A by-law was in place limiting access to hydrants.**

  Township of North Dundas Fire Hydrant Use Policy (01-2003) indicates that no person other than a person authorized by the Chief Administrative Officer shall be permitted to use a fire hydrant, and that any connection to a hydrant, other then for fire fighting, requires the use of a backflow preventer.

DISTRIBUTION SYSTEM

* **There were no private applicators of pesticides using water from the owner's hydrants for the mixing of pesticides.**

* **Consumer water use was fully metered.**

  The Township charges its Chesterville customers a flat rate for water use.

* **More than 90% of the total amount of water distributed by the system was accounted for.**

* **The owner had a proactive leak detection program in place.**

  The operating authority indicated that they routine trend water usage and investigate any anomalies which may be caused by a system leak.

* **The log identified the frequency and location of pressure readings in the system.**

* **Based on information provided, the owner was able to maintain proper pressures in the distribution system.**

OPERATIONS MANUALS

* **Operators and maintenance personnel had ready access to comprehensive operations and maintenance manuals.**

  An up to date operations manual is kept at the water treatment plant.

* **The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.**

* **The operations and maintenance manual contained a sampling plan.**

* **The operations and maintenance manual identified the minimum required chlorine residual in water leaving the treatment plant so that adequate secondary disinfection could be maintained.**

* **The operations and maintenance manuals contained instructions pertaining to the identification of adverse drinking water conditions, as well as prescribed notification and corrective actions.**

* **The operations and maintenance manuals met the requirements of the Certificate of Approval.**

  An Operations and maintenance manual is located in the Operations Binder located at the water treatment plant. The Operations Binder provides all the required elements specified in Section 6.5 of the CofA and contains the following sections: Certificates of Approvals, Engineer's Report, Schedules and Procedures for Monitoring and Reporting, Monitoring Equipment, Contingency Plan, Complaints, Well Inspection and Maintenance, Facility Operations Manual, and the American Water Works Association (AWWA) Standards for Disinfection of Watermains, Disinfection of Water Storage Facilities, and Disinfection of Wells.

LOGBOOKS

* **Logs or other record keeping mechanisms were provided to record information concerning the subsystems.**

  The Operations Log is a bound notebook located at the water treatment plant. A review of the logbook indicated that it provided an excellent summary of operating conditions at the plant.

* **Logbook entries were made in chronological order.**

* **The record system allowed the reader to unambiguously identify the person who made the logbook entry.**

* **Entries in the logbook were made only by appropriate and authorized personnel.**

* **For each operating shift, the log or other record keeping mechanisms identified the names of all operators who were on duty during the shift.**

* **Records were maintained of the amount of time each operator worked as Operator-in-Charge.**

  The Operating Authority keeps a record of the Operator-in-Charge time on each Operator's timesheet.

* **Log books confirm that only certified operators or water quality analysts were conducting operational tests that were not being performed by continuous monitoring equipment.**

* **For every required operational test and for every required sample, a record was made of the date, time location and name of the person who performed the test and the result of the analysis.**

* **Unusual or abnormal conditions observed at the facility were recorded in the logbook along with the action taken.**

* **Departures from normal operating procedures were documented along with the time they occurred.**

* **If equipment was taken out of service or equipment ceased to operate during the shift, the event was recorded in the logbook along with the action taken to maintain or repair the equipment.**

* **Where required, logbooks identify special instructions that were given to depart from normal operating conditions.**

* **The operator-in-charge ensured that records were maintained of all adjustments made to the processes within his or her responsibility.**

* **There was consistency between the information contained in adverse reports, logs, and Annual/Summary Reports.**

LOGBOOKS

* **Logs or other record keeping mechanisms were available for at least five (5) years.**

CONTINGENCY/EMERGENCY PLANNING

* **The owner had developed a written contingency/emergency plan as required by the Certificate of Approval.**

  The Operating Authority has prepared 28 specific contingency plans for a wide variety of potential emergencies including: chemical spills, hydro failure, vandalism, watermain break, contaminated raw water, and fire. These plans are included in Section 5 of the Operations Manual.

* **The contingency/emergency plan was available for reference by all staff as required by the Certificate of Approval.**

* **A system contingency procedure was in place for periods of time when the overall responsible operator was absent or unable to act.**

* **The contingency/emergency plan provided for key equipment to be made available in the event of an emergency or upset condition.**

* **Procedures existed for the periodic testing of the contingency/emergency plan.**

* **The contingency/emergency plan addressed spill scenarios.**

  Section 4 of the Environmental Contingency Plan provides guidance on MOE Spill Reporting Requirements. Section 5 of the Plan provides a detailed contingency for Chemical Spills.

* **Spill containment was provided for process chemicals.**

* **Spill containment was provided for standby power generator fuel.**

  The diesel fuel tank is located within a containment structure.

* **Clean-up equipment and materials were in place for the clean up of spills.**

  The Operating Authority indicated that clean-up equipment and materials for spills are stored at OCWA's Chesterville Office.

* **Standby equipment was available for critical treatment processes where required.**

  Standby chemical metering pumps are available at both the Well 5 pumphouse and at the water treatment plant. The water treatment plant is equipped with two standby highlift pumps.

* **Back-up power was available as required by Certificate of Approval or other direction.**

  A diesel engine stand-by power generator is located at the water treatment plant.

* **Standby power generators were tested under normal load conditions.**

  A review of the operations logbook indicated that the emergency generator is tested monthly. The Operating Authority indicated that the mobile generator is also tested monthly.

SECURITY

SECURITY

* **All storage facilities were completely covered and secure.**

* **Air vents associated with reservoirs and elevated storage structures were equipped with screens.**

* **The system had appropriately spaced signage regarding restrictions on access such as no trespassing signs.**

* **The owner had provided adequate security measures to protect components of the drinking-water system.**

  The pumphouse, water treatment plant, and water tower are located within an area surrounded by security fencing and a locked access gate. Operators access the structures by unlocking a security door and by deactivation of an alarm system with a numeric touch pad. The alarm system is capable of remote notification of the Operator-in-Charge in the event of an alarm condition. If an alarm is triggered the Operator in Charge will receive notification via the on-call pager and/or the operator's cell phone. If the Operator in Charge does not respond to the on-call pager within a specified period of time then backup operators will be notified until one is contacted.

  Alarms at the pump station include: low well level, low chlorine and lockout, power failure, and intrusion. Alarms at the reservoir include: high and low chlorine and lockout, high and low flow, power failure, intrusion, generator activated, reservoir high and low, turbidity high and low, and tower level high and low. Additional alarms at the elevated tower include: power failure, high and low tower level.

CONSUMER RELATIONS

* **Water conservation was being practiced by the owner or operating authority.**

  Township has a by-law used to enforce lawn watering restrictions that are instituted as required. The 2004 average annual flow rate was 30% of the capacity of the plant.

* **A documented system existed to record consumer complaints, steps taken to determine the cause of the issue, and corrective measures taken to alleviate the cause and prevent its reoccurrence.**

  The operating authority manages and responds to customer complaints using the OPEX Incident Reporting System; a database that OCWA uses to record and report a wide range of incidents including community complaints. Over the course of the inspection period, OCWA recorded three consumer complaints. A total of five complaints were received regarding discoloured water. Three of the complaints were received on April 20, 2005 the cause of which was determined to be the swabbing of a watermain in a newly constructed subdivision. One complaint was received on June 20, 2005, and the operating authority attributed this complaint to the hydrological pumping tests that were underway at the time. The final compliant, received on July 7, 2005 was attributed to use of hydrants by the Fire Department to combat a fire that occurred the previous night.

* **Required documents were available free-of-charge during normal business hours at a location accessible to the public.**

  The owner confirmed that the following documents are available to the public during normal business hours at the Township's Offices in Winchester:

  - All of the lab reports on the analysis of water samples required to be taken under O.Reg 170/03;

  - Copies of Annual Reports and Summary Reports for Municipalities required by O.Reg 170/03;

  - All of the approvals, orders, and directions related to system;

CONSUMER RELATIONS

- A Copy of the most recent Engineer's Report;
- Annual Compliance Report;
- A copy of the Drinking Water Systems Regulation (Regulation 170/03; and
- The Ontario Drinking Water Quality Standards (Regulation 169/03).

* **The owner took effective steps to advise users of the water system of the availability of Annual Reports.**

The Township indicated that a notice advising of the availability of the annual report is posted on the bulletin board at the Township office and that the annual reports are also posted on the Township's website.

CERTIFICATION AND TRAINING

* **The overall responsible operator had been designated and he/she possessed a certificate that was of the same class or higher than the class of the subsystem.**

The operator in overall responsibility for the Chesterville Drinking Water System is Mr. Blair Henderson. Mr. Henderson possesses a Class 2 Water Treatment License and a Class 3 Water Distribution License. The Chesterville Drinking Water System is classified as a Class 3 Distribution System.

* **The operator designated as the overall responsible operator was not a grand-parented operator who had failed to obtain a satisfactory mark in an examination by May 14, 2005.**

* **Personnel at the drinking-water system were under the supervision of persons who had the prescribed qualifications.**

* **All operators possessed the required certification.**

All operators working at the treatment facility and the distribution system possess the required certification.

The following is a list of operators, certification details, and license expiry dates:

Dave Markell - Water Treatment Class 3 (Nov. 30, 2007) Water Distribution Class 3 (Sept. 30, 2005)

William Michels - Water Treatment Class 2 (Sept. 30, 2006) Water Distribution Class 2 (Sept. 30, 2006)

Jean Veilleux - Water Treatment Class 3 (May 31, 2006) Water Distribution Class 3 (May 31, 2006)

Andrew Barrie - Water Treatment Class 2 (Jan. 31, 2005) Water Distribution Class 2 (Oct. 31, 2005)

Tony Kelly - Water Treatment Class 3(Nov. 30, 2007) Water Distribution Class 3 (Nov. 30, 2006)

Mark Lauzon - Water Treatment Class 1 (Oct. 31, 2006) Water Distribution OIT (Sept. 30, 2005)

Brian Huskinson - Water Treatment Class 2 (Oct. 31, 2005) Water Distribution Class 2 (Aug. 31, 2005)

David Lee - Water Treatment OIT (June 30, 2006) Water Distribution OIT (June 30, 2006)

Dennis Sullivan - Water Treatment OIT (April 30, 2007) Water Distribution OIT (April 30, 2007)

Jonathan Hartle - Water Treatment OIT (April 30, 2007) Water Distribution OIT (April 30, 2007)

Note: OIT = Operator in Training

CERTIFICATION AND TRAINING

* **Only certified operators made adjustments to the treatment equipment.**

* **Operator certificates were displayed in a conspicuous location at the workplace or at the premises from which the subsystem was managed.**

  The operator licenses were conspicuously displayed at OCWA's office in Chesterville.

* **Water quality analyst certificates were displayed in a conspicuous location at the workplace or at the premises from which the subsystem was managed.**

* **The owner had filed an application for the determination of the type and class of each type of subsystem in the drinking-water system.**

* **The classification certificates of the subsystems were conspicuously displayed at the workplace or at premises from which the subsystem was managed.**

  The plant classification certificate was conspicuously displayed at the water treatment plant.

* **In instances where the overall responsible operator was unable to act, an adequately licenced operator was designated to act in place of the overall responsible operator.**

* **Every operator and water quality analyst employed in the subsystem had received the annual number of hours of training relative to that subsystem.**

  A review of the training records indicated that all operators had received the required amount of training.

* **For that portion of the training consisting of on the job practical training, records were retained for five (5) years.**

* **For that portion of the training consisting of on the job practical training, records included the names of the trainees and instructors, the dates of the training sessions, the method used for training, and the duration of each training session and subjects covered.**

* **Operators were regularly trained with respect to the contents of the operations and maintenance manual and Contingency/Emergency Plan.**

  The operating authority indicated that operators are required to review the Operations Manual for their assigned facilities annually, and that periodically manuals are discussed at regularly scheduled staff meetings.

WATER QUALITY MONITORING

* **Relief from water quality monitoring requirements had not been granted.**

* **Raw water samples were being collected and analyzed at the appropriate frequency.**

  A review of the laboratory analytical reports provided by the operating authority indicated that the required weekly raw water samples are being collected.

* **Raw water samples were not collected from an acceptable tap that had a smooth nozzle.**

  A smooth nozzle raw water sample tap is not located at the well house for the collection of a sample prior to injection of disinfectant.

WATER QUALITY MONITORING

* **All microbiological water quality monitoring required by the legislation was being conducted.**

  A review of the owner's laboratory analytical reports indicated that weekly raw water samples were collected from the Well 5 Production Well and submitted for microbiological analysis. The results indicated that both E.Coli and Total Coliforms were not detected in the raw water.

  The owner's laboratory analytical reports indicated that the required weekly treated water and distribution system samples were collected and submitted from microbiological analysis. The results indicated that both E.Coli and Total Coliforms were not detected in any of the treated water or distribution systems samples.

* **All physical/chemical water quality monitoring required by the legislation was being conducted.**

  On January 20, 2003 the operating authority collected samples for analysis of all the required inorganic parameters (O.Reg. 170/03 Schedule 23) with the exception of Antimony which was not included as an inorganic parameter in the legislation that was applicable (Regulation 459/00) at the time of sampling. On December 9, 2003 the operating authority collected a sample that was submitted for the analysis of Antimony. The results indicated that the parameters were either not detected or detected at concentrations less then half the Maximum Acceptable Concentration.

  On December 9, 2003 the operating authority collected a treated water sample for analysis of all of the required organic parameters (O.Reg. 170/03 Schedule 24). The results indicated that the parameters were either not detected or detected at concentrations less then half the Maximum Acceptable Concentration.

  Quarterly samples for Nitrate and Nitrite were collected on October 25, 2004 and on January 17, April 11, and August 2, 2005. The results indicated that both nitrite and nitrate were not detected in any of the samples.

  The operating authority collected a treated water sample for the analysis of sodium on January 28, 2002. The results indicated that the concentration of sodium was 23 mg/L.

  The operating authority collected a water sample for the analysis of fluoride in May 2004. The results indicated that the concentration of fluoride was 0.2 mg/L.

* **The owner of the drinking-water system had not been required to increase the frequency of monitoring for one or more chemical parameters as a result of having exceeded half the value of an applicable O. Reg. 169/03 standard.**

* **The owner had not established water quality goals over and above regulatory requirements.**

* **Trihalomethane samples were being taken as required from a location representing the longest residence time.**

  On November 8, 2004 and on January 17, April 11, and August 2, 2005 distribution system samples were collected and submitted for analysis of THMs and the concentrations reported were 8, 6, 7, and 12 ug/L respectively. The four quarter average at the time of the inspection was 8 ug/L. The Ontario Drinking Water Quality Standard for THMs in drinking water is 100 ug/L based on a four quarter moving annual average of test results.

* **Samples for lead analysis were being collected from a point in the distribution system or the connected plumbing system that was likely to have an elevated concentration of lead.**

  Samples are collected from the distribution system on an annual basis. The sample collected on January 17, 2005 indicated that the concentration of lead was 0.002 mg/L. The Ontario Drinking Quality Water Standard for Lead is 0.010 mg/L (O.Reg 169/03).

WATER QUALITY MONITORING

* **There were no additional monitoring requirements beyond those required by O. Reg. 170/03.**

* **Samples for chlorine residual analysis were tested using continuous monitoring equipment, or an acceptable portable device.**

  The analyzers described above are both electronic direct read-out colourimetric analyzers that operate continuously.

* **Continuous water quality analyzers and indicators with alarm systems were installed at the prescribed locations.**

  At the Well 5 pumphouse, chlorinated water is directed to an online continuous chlorine analyzer (Prominent D1C) via a contact time simulation tank. The purpose of the tank is to provide a sample of water to the analyzer after the required contact time has been completed as per the requirements of Schedule 7-2 of O.Reg 170/03. At the water treatment plant, treated water is directed to a continuous chlorine analyzer (Wallace and Tiernan Depolox 3 Plus). Both analyzers are connected to a SCADA system that provides a continuous record of the chlorine residuals at both locations. The operating authority confirmed that the results are checked at least once every 72 hours.

  The disinfection system is equipped with a pump lockout that is activated when the low level alarm is triggered. When the alarms on either of the instruments is activated then the on-call operator is notified electronically.

  The manufacturer's instructions do not provide a recommended calibration schedule, therefore Schedule 6-5 Section 10 of O.Reg 170/03 applies and the analyzer is required to be operated at an accuracy that is within the specified margins of error. The margins of error for a free chlorine analyzer is 0.05 mg/L if the concentrations measured are less than or equal to 1.0 mg/L and proportionally higher if the concentrations usually measured are greater than 1.0 mg/L. The accuracy range for the analyzers is +/- 5% (ie: +/- 0.05 mg/L at 1.0 mg/L).

  A review of the equipment work orders provided by the operating authority indicated that the chlorine analyzer was calibrated monthly. The operating authority indicated that the analyzer is compared with the results from a Hach pocket colorimeter during each site visit. The Operating Authority provided documentation that showed that the manufacturer calibrated the pocket colorimeter in June 2004.

* **Continuous water quality analyzers and indicators with alarm systems were calibrated, maintained and operated in accordance with the manufacturer's instructions or the regulation.**

  The chlorine analyzer at the water treatment plant is equipped with an alarm system that provides electronic notification to the operating authority if the test result indicates that the free chlorine residual is above the maximum alarm setting of 2.9 mg/L free chlorine or below the minimum alarm setting of 0.9 mg/L free chlorine.

* **Monitoring equipment was capable of measuring chlorine residuals with the required accuracy.**

* **Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.**

* **Primary disinfection chlorine monitoring was being conducted at or near a location where the intended CT had just been achieved or at a point which represented that location.**

* **The disinfectant residual was measured and recorded daily for the distribution system.**

WATER QUALITY MONITORING

* **Records indicated that in all cases the chlorine residual levels in the distribution system were above 0.05 mg/L free or 0.25 mg/L combined.**

  A review of the data provided by the operating authority indicated that the minimum concentrations of free chlorine residual were being maintained within the distribution system. Free chlorine concentrations taken during weekly distribution system sampling ranged from 0.48 mg/L to 1.59 mg/L.

* **Records confirmed that the maximum free chlorine residual in the distribution system was less than 4.0 mg/L or that the combined chlorine residual was less than 3.0 mg/L.**

* **Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.**

* **Records confirmed that disinfectant residuals were routinely checked at the extremities and "dead ends" of the distribution system.**

* **The drinking-water system was not required to provide chemically-assisted filtration and monthly turbidity testing was being conducted on the raw water prior to it entering the treatment system.**

  Monthly raw water turbidity measurements are being collected and the results are being recorded in the logbook.

* **Testing for parameters required by legislation, Certificate of Approval or Order was being conducted by laboratories accredited to test for that parameter.**

* **The drinking-water system owner had submitted all written notices to the Director and the notices provided the names of laboratories that were conducting tests for parameters required by legislation, Certificate of Approval or Order.**

  On November 14, 2003 Dave Markell submitted Part I and Part II and Form 6 to the Ministry for the following laboratories: Accutest, Caduceon, and Lakefield Research.

* **Based on information provided by the owner/operator, samples were being taken and handled in accordance with instructions provided by the drinking-water system's laboratories.**

* **The owner indicated that the required records have been kept and will be kept for five (5) years.**

* **The owner indicated that the required records will be kept for fifteen (15) years.**

WATER QUALITY ASSESSMENT

WATER QUALITY ASSESSMENT

* **Treated water audit samples were collected during the inspection.**

  The Inspector collected raw, treated and distribution system samples. Each of the samples was analyzed for microbiological parameters. The treated water sample was also analyzed for metals (incl. mercury), volatile organics (incl. THMs), inorganics, pesticides, general chemistry, and for analysis of a selection of non-health related physical and chemical parameters. One of the distribution system samples was also submitted for analysis of volatile organics (incl. THMs), and lead.

  Distribution system samples at the following locations: MacEwan Fuels (20 South Street); D&D Performance (229 Main Street); and the Sewage Pumping Station. The free chlorine residual measurements taken at the time of sampling ranged from 0.90 to 1.50 mg/L.

* **Raw water samples were collected as part of the audit sampling.**

* **The results of Ministry audit sampling showed compliance with Ontario Drinking-Water Quality Standards (O. Reg. 169/03).**

  A review of the analytical results indicates that there were no adverse samples with respect to microbiological parameters and that health related chemical/physical parameters were either not detected or detected at concentrations less then half of the acceptable concentration. A review of the results from the non-health related chemical/physical parameters indicated that there were no exceedances of aesthetic or operational objectives. A copy of the laboratory analytical report is provided in Appendix B.

* **The owner's monitoring results were comparable to the results of the Ministry's audit samples.**

  A review of the owner's laboratory analytical reports indicated that there were no anomalies between the owner's monitoring results and the results attained through the inspector's audit samples.

* **A review of monitoring data provided by the operating authority confirmed that the water provided by the system met the requirements of the prescribed Ontario Drinking-Water Quality Standards.**

  A review of monitoring data provided by the operating authority confirms that the water provided by the system meets the requirements of the prescribed drinking water quality standards.

REPORTING & CORRECTIVE ACTIONS

* **When alarms for continuous monitoring equipment sounded, appropriate actions were taken in a timely manner by a qualified person.**

  A review of the logbook indicated that operators are responding to alarm conditions.

* **When no one was at the location where/when an alarm sounded, a qualified person was promptly dispatched.**

* **When qualified persons were dispatched for alarms, they arrived at the location as soon as possible.**

* **The Engineer's Report was prepared and submitted within required time frames.**

  The most recent Engineer's Report was submitted in March 2001.

* **Annual Reports included the required information.**

REPORTING & CORRECTIVE ACTIONS

* **The Annual Report was prepared and submitted by February 28.**

  A review of the annual reports indicate that they contain the required information. The Township indicated that the reports are available at the Township's office in Winchester and that the annual reports are also posted on the Township's website.

* **Summary Reports were completed on time and distributed in accordance with the regulatory requirements.**

  Presented and reviewed by Township Council on March 14, 2005.

* **All written notices, warning notices and reports were issued by the owner in a form provided by or approved by the Director.**

OTHER INSPECTION FINDINGS

* **The following instances of non-compliances were also noted during the inspection:**

* **The owner/operator implemented those recommendations issued between the date of the previous inspection and the date of this inspection.**

  The Previous Compliance Inspection report contained the following best practice recommendations: i) Although spill containment is provided for the emergency generator and the fuel storage tank the owner should consider relocating to the emergency generator to an ancillary structure; ii) Due to the proximity of surface water in the adjacent gravel pit to the production well and the results of the 'Municipal Groundwater Study – North Dundas' (Eastern Ontario Water Resources Committee, March 2004) that indicated that future mineral extraction will increase the potential for impacts on the production well, the owner should ensure that a Well Head Protection Plan is prepared for the source wells.

  The operating authority submitted a letter dated March 24, 2005 to the Ministry on behalf of the owner indicating the following: i) the relocation of the diesel generator and fuel storage tank has been included in the ten-year projected capital works budget for the water treatment plant; ii) A well head protection plan will be developed based on the results of the Well 6 pumping test and the anticipated MOE terms of reference for well head protection plans.

NON COMPLIANCE WITH REGULATORY REQUIREMENTS

Not Applicable

ACTIONS REQUIRED

This section provides further detail regarding the non compliance items listed on the previous page, as well as actions required to address each issue.

1 There were no non-compliance issues identified as a result of this inspection. The Township of North Dundas and the Ontario Clean Water Agency continue to ensure a safe source of potable water for the residents of the Village of Chesterville.

SUMMARY OF BEST PRACTICE ISSUES

This section provides a summary of all best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. The address of these practices, while not yet mandatory, will lead to safer drinking water for the consumer.

* Raw water samples were not collected from an acceptable tap that had a smooth nozzle.

RECOMMENDED ACTIONS

This section provides a summary of recommended actions to address best practice issues identified on the previous page. Owners and operators should develop an awareness of these practices and take measures to implement them so that all drinking water systems continuously improve their processes. In the interest of continuous improvement, we provide the following suggestions:

1 The inspection revealed that the raw water sampling tap is not equipped with a smooth nozzle. It is recommended that the owner install a smooth nozzle to ensure that representative raw water samples are being collected.

SIGNATURES

Inspected By:

Jan Franssen

Signature: (Provincial Officer):

Reviewed & Approved By:

James Mahoney

Signature: (Supervisor):

(Dan White for James Mahoney)

Review & Approval Date: October 24, 2005

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 operating authority to ensure compliance with all applicable legislative and regulatory requirements.

APPENDIX A

Drinking Water System Components Description

DRINKING WATER SYSTEM COMPONENTS DESCRIPTION

Name: WELL 5
Station Id #: 2100007287001
Type: Source
Sub Type: Ground

Street Number: **Street Name:**

Lot: 1 **Concession:**
Part: **Reference Plan:**

Map Datum: NAD 83
Geo-Referencing Method: GPS
Accuracy Estimate: 1-10 Meters (Good Quality GPS)
Location Reference: Near Object **UTM Zone:** 18
UTM Northing: 4994075 **UTM Easting:** 477866
Latitude: **Longitude:**

Name: WELL 6
Station Id #:
Type: Other
Sub Type: Other

Street Number: **Street Name:**

Lot: 5 **Concession:**
Part: **Reference Plan:**

Map Datum: NAD 83
Geo-Referencing Method: GPS
Accuracy Estimate: 1-10 Meters (Good Quality GPS)
Location Reference: Near Object **UTM Zone:**
UTM Northing: **UTM Easting:**
Latitude: **Longitude:**

Name: WATER TREATMENT PLANT
Station Id #: 2100007287402
Type: Treated Water POE
Sub Type: Reservoir

Street Number: **Street Name:**

Lot: 2 **Concession:**
Part: **Reference Plan:**

Map Datum:	NAD 83		
Geo-Referencing Method:	GPS		
Accuracy Estimate:	1-10 Meters (Good Quality GPS)		
Location Reference:	Near Object	**UTM Zone:**	18
UTM Northing:	4994561	**UTM Easting:**	481165
Latitude:		**Longitude:**	

Name: WATER TOWER
Station Id #: 2100007287403
Type: Treated Water POE
Sub Type: Reservoir

Street Number: **Street Name:**

Lot: 3 **Concession:**
Part: **Reference Plan:**

Map Datum:	NAD 83		
Geo-Referencing Method:	GPS		
Accuracy Estimate:	1-10 Meters (Good Quality GPS)		
Location Reference:	Near Object	**UTM Zone:**	
UTM Northing:		**UTM Easting:**	
Latitude:		**Longitude:**	

Name: DISTRIBUTION (WATER INSPECTION)
Station Id #: 2100007288001
Type: Other
Sub Type: Other

Street Number: **Street Name:**

Lot: 4 **Concession:**
Part: **Reference Plan:**

Map Datum:	NAD 83		
Geo-Referencing Method:	GPS		
Accuracy Estimate:	1-10 Meters (Good Quality GPS)		
Location Reference:	Near Object	**UTM Zone:**	
UTM Northing:		**UTM Easting:**	
Latitude:		**Longitude:**	

APPENDIX B

Laboratory Analytical Report (Ministry Audit Samples)

APPENDIX
Table 1
CHESTERVILLE WELL SUPPLY
AUDIT SAMPLE RESULTS - 24-AUG-2005
CHEMICAL / PHYSICAL PARAMETERS - HEALTH RELATED

Sample # 1 - TREATED WATER

Parameter	Units	MAC [1]	IMAC [2]	AO [3]	SAMPLE # 1
ANTIMONY, UNFILTERED TOTAL	UG/L		6		1.24 +/-0.27
ARSENIC, UNFILTERED TOTAL	UG/L		25		.2 +/-0.10
BARIUM, UNFILTERED TOTAL	UG/L	1000			109 +/-9.00
BENZENE C6H6	UG/L	5			.05 <=W
BORON, UNFILTERED TOTAL	UG/L		5000		13 +/-3.00
BROMODICHLOROMETHANE	UG/L				2
BROMOFORM	UG/L				.5 <=W
CADMIUM, UNFILTERED TOTAL	UG/L	5			.01 +/-0.05
CARBON TETRACHLORIDE	UG/L	5			.2 <=W
CHLOROBENZENE	UG/L	80			.05 <=W
CHLORODIBROMOMETHANE	UG/L				1 <T
CHLOROFORM CHCL3	UG/L				2.7
CHROMIUM, UNFILTERED TOTAL	UG/L	50			1.3 +/-0.50
DICHLOROBENZENE 1,2	UG/L	200			.05 <=W
DICHLOROBENZENE 1,4	UG/L	5			.05 <=W
DICHLOROETHANE 1,2	UG/L		5		.05 <=W
DICHLOROETHYLENE 1,1	UG/L	14			.05 <=W
FLUORIDE, UNFILTERED REACTIVE	MG/L	1.5 b			.07
LEAD, UNFILTERED TOTAL	UG/L	10 c			1.62 +/-0.37
MERCURY, UNFILTERED TOTAL	UG/L	1			.02 <=W
METHYLENE CHLORIDE	UG/L	50			.2 <=W
NITRATES TOTAL, UNFIL.REAC	MG/L	10 d			.005 <=W
NITRITE, UNFILTERED REACTIVE	MG/L	1 d			.001 <=W
SELENIUM, UNFILTERED TOTAL	UG/L	10			0 +/-1.00
TETRACHLOROETHYLENE	UG/L	30			.05 <=W
TRICHLOROETHYLENE C2HCL3	UG/L	50			.05 <=W
TRIHALOMETHANES, TOTAL	UG/L	100 e			5.5
URANIUM, UNFILTERED TOTAL	UG/L	20			.81 +/-0.07
VINYL CHLORIDE C2H3CL	UG/L	2			.05 <=W

Shortforms:

<T	-	A measurable trace amount; interpret with caution	NA	-	Result not available
<W	-	No measurable response (zero) : < Reported value	NS	-	Not sampled
<=W	-	No measurable response (zero) : < Reported value	NG/L	-	Nanograms per litre
<	-	Actual result is less than reported value	UG/L	-	Micrograms per litre
ND	-	Not detected	MG/L	-	Milligrams per litre
!NP	-	No appropriate procedure available			

Footnotes:

1 Maximum Acceptable Concentration

2 Interim Maximum Acceptable Concentration

3 Aesthetic Objective

4 Includes *alpha*-chlordane, *gamma*-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 fluoride is added to drinking water, it is recommended that the concentration be adjusted to 0.5 - 0.8 mg/L, the optimum level for control of tooth decay. Where supplies contain naturally occurring fluoride at levels higher than 1.5 mg/L but less than 2.4 mg/L the Ministry of Health and Long Term Care recommends an approach through local boards of health to raise public and professional awareness to control excessive exposure to fluoride from other sources. Levels above the MAC must be reported to the local Medical Officer of Health.

c) This standard 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.

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

e) The standard is expressed as a running annual average of quarterly samples measured at a point reflecting the maximum residence time in the distribution system.

APPENDIX
Table 2
CHESTERVILLE WELL SUPPLY
AUDIT SAMPLE RESULTS - 24-AUG-2005
MICROBIOLOGICAL PARAMETERS - HEALTH RELATED

Sample # 1 - WELL 5 RAW
Sample # 2 - TREATED WATER
Sample # 3 - MACEWAN FUELS 20 SOUTH ST. DISTRIBUTION
Sample # 4 - CHESTERVILLE SPS 1804 WATER ST. DISTRIBUTION
Sample # 5 - D & D PERFORMANCE DISTRIBUTION

Parameter	Units	MAC[1]	AO[1]	SAMPLE # 1	SAMPLE # 2
COLIFORM, TOTAL M/F BCKGRD	C/100ML	200		0	
COLIFORM, TOTAL MF	C/100ML	0		0	
ESCHERICHIA COLI MF	C/100ML	0		0	
HETEROTROPH MF 35 C	C/ML	500			10 <
NT: DETERIORATION INDICATORS	C/100ML		0		NOT DETECTED
NT: ESCHERICHIA COLI	C/100ML	0			ABSENT
NT: TOTAL COLIFORMS	C/100ML	0			ABSENT

APPENDIX
Table 2
CHESTERVILLE WELL SUPPLY
AUDIT SAMPLE RESULTS - 24-AUG-2005
MICROBIOLOGICAL PARAMETERS - HEALTH RELATED

Sample # 1 - WELL 5 RAW
Sample # 2 - TREATED WATER
Sample # 3 - MACEWAN FUELS 20 SOUTH ST. DISTRIBUTION
Sample # 4 - CHESTERVILLE SPS 1804 WATER ST. DISTRIBUTION
Sample # 5 - D & D PERFORMANCE DISTRIBUTION

Parameter	Units	MAC [1]	AO [2]	SAMPLE # 3	SAMPLE # 4
COLIFORM, TOTAL M/F BCKGRD	C/100ML	200			
COLIFORM, TOTAL MF	C/100ML	0			
ESCHERICHIA COLI MF	C/100ML	0			
HETEROTROPH MF 35 C	C/ML	500		10 <	10 <
NT: DETERIORATION INDICATORS	C/100ML		0	NOT DETECTED	NOT DETECTED
NT: ESCHERICHIA COLI	C/100ML	0		ABSENT	ABSENT
NT: TOTAL COLIFORMS	C/100ML	0		ABSENT	ABSENT

APPENDIX
Table 2
CHESTERVILLE WELL SUPPLY
AUDIT SAMPLE RESULTS - 24-AUG-2005
MICROBIOLOGICAL PARAMETERS - HEALTH RELATED

Sample # 1 - WELL 5 RAW
Sample # 2 - TREATED WATER
Sample # 3 - MACEWAN FUELS 20 SOUTH ST. DISTRIBUTION
Sample # 4 - CHESTERVILLE SPS 1804 WATER ST. DISTRIBUTION
Sample # 5 - D & D PERFORMANCE DISTRIBUTION

Parameter	Units	MAC [1]	AO [2]	SAMPLE # 5
COLIFORM, TOTAL M/F BCKGRD	C/100ML	200		
COLIFORM, TOTAL MF	C/100ML	0		
ESCHERICHIA COLI MF	C/100ML	0		
HETEROTROPH MF 35 C	C/ML	500		10 <
NT: DETERIORATION INDICATORS	C/100ML		0	NOT DETECTED
NT: ESCHERICHIA COLI	C/100ML	0		ABSENT
NT: TOTAL COLIFORMS	C/100ML	0		ABSENT

Notes:

- Escherichia coli is a more definitive indicator of fecal contamination than 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).

Shortforms:

C/100mL - Count per 100 millilitre

C/mL - Count per millilitre

Footnotes:

1. Maximum Acceptable Concentration
2. Aesthetic Objective

According to section 16-3 of O.Reg. 170/03,the following are prescribed as adverse results of a drinking-water test for the purpose of section 18 of the Safe Drinking Water Act 2002:

1. A result that exceeds any of the standards prescribed by Schedule 1, 2 or 3 to the Ontario Drinking-Water Quality Standards, other than the standard for fluoride, if the result is from a sample of drinking water.

2. A result indicating the presence of Aeromonas spp., Pseudomonas aeruginosa, Staphylococcus aureus, Clostridium spp. or fecal streptococci (Group D streptococci) in a sample of drinking water.

3. A result indicating the presence of a pesticide not listed in Schedule 2 to the Ontario Drinking-Water Quality Standards in a sample of drinking water, at any concentration.

4. A result indicating that the concentration of free chlorine residual is less than 0.05 milligrams per litre in a distribution sample, if the drinking-water system provides chlorination and does not provide chloramination.

5. A result indicating that the concentration of combined chlorine residual is less than 0.25 milligrams per litre in a distribution sample, if the drinking-water system provides chloramination.

6. If the drinking-water system is required to provide filtration and a report under subsection 18 (1) of the Act has not been made in respect of turbidity in the preceding 24 hours, a result indicating that turbidity exceeds 1.0 Nephelometric Turbidity Units (NTU) in,

i. a grab sample of water taken from a filter effluent line, or

ii. two samples of water from a filter effluent line that are tested by continuous monitoring equipment, if the two samples were taken 15 minutes or more apart and the later of the two samples was the first sample that was taken 15 minutes or more after the earlier sample.

7. If an approval or order, including an OWRA order, identifies a parameter as a health-related parameter and establishes a maximum concentration for the parameter, a result indicating that the parameter exceeds the maximum concentration in a sample of drinking water.

8. A result indicating that the concentration of sodium exceeds 20 milligrams per litre in a sample of drinking water, if a report under subsection 18 (1) of the Act has not been made in respect of sodium in the preceding 60 months.

9. A result indicating that the concentration of fluoride exceeds 1.5 milligrams per litre in a sample of drinking water, if,

i. the drinking-water system provides fluoridation and a report under subsection 18 (1) of the Act has not been made in respect of fluoride in the preceding 24 hours, or

ii. the drinking-water system does not provide fluoridation and a report under subsection 18 (1) of the Act has not been made in respect of fluoride in the preceding 60 months.

APPENDIX
Table 3
CHESTERVILLE WELL SUPPLY
AUDIT SAMPLE RESULTS - 24-AUG-2005
CHEMICAL / PHYSICAL PARAMETERS - NOT HEALTH RELATED

Sample # 1 - TREATED WATER

Parameter	Units	OBJECTIVE	TYPE OF OBJECTIVE	SAMPLE # 1	
ALUMINIUM, UNFILTERED TOTAL	UG/L	100	OG	1.2	+/-0.60
AMMONIUM, TOTAL UNFIL.REAC	MG/L	a	a	.002	<=W
COPPER, UNFILTERED TOTAL	UG/L	1000	AO	16	+/-1.30
ETHYLBENZENE C8H10	UG/L	2.4	AO	.05	<=W
IRON, UNFILTERED TOTAL	UG/L	300	AO	144	+/-26.00
MANGANESE,UNFILTERED TOTAL	UG/L	50	AO	19.5	+/-1.60
TOLUENE C7H8	UG/L	24	AO	.05	<=W
XYLENE-M AND P	UG/L	300	AO	.05	<=W
XYLENE-O C8H10	UG/L	300	AO	.05	<=W
ZINC, UNFILTERED TOTAL	UG/L	5000	AO	5.5	+/-0.90

Shortforms:

<T - A measurable trace amount; interpret with caution
<W - No measurable response (zero) : < Reported value
<=W - No measurable response (zero) : < Reported value
< - Actual result is less than reported value
ND - Not detected
NA - Result not available
NS - Not sampled
DEG - Degree celsius

AO - Aesthetic Objective
OG - Operational Guideline
FTU = NTU - Nephelometric Turbidity Unit
TCU - True Colour Units
NG/L - Nanograms per litre
UG/L - Micrograms per litre
MG/L - Milligrams per litre

Footnotes:

a) No limit has been established for this parameter.

b) Organic Nitrogen = (Total Kjeldahl Nitrogen - Ammonia)

c) The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

d) When sulphate levels exceed 500 mg/L, water may have a laxative effect on some people.

e) Applicable for all water at the point of consumption.

Ministry of the Environment

Safe Drinking Water Branch

Cornwall Area Office
113 Amelia Street, 1st floor
Cornwall ON K6H 3P1

Ministère de l'Environnement

Direction du contrôle de la qualité de l'eau potable

Bureau du secteur de Cornwall
113, rue Amelia, rez-de-chaussée
Cornwall (Ontario) K6H 3P1

Ontario

October 25, 2005

Township of North Dundas
PO Box 489
547 St. Lawrence Street
Winchester, ON, K0C 2K0

Attention: Mr. Howard Smith, Administrator/Clerk

Dear Mr. Smith:

Re: Compliance Inspection - 2005/2006
Chesterville Well Supply

The Chesterville Well Supply was inspected on August 24, 2005, by Jan Franssen, Inspector, Drinking Water Inspection Program, Eastern Region. Enclosed is a copy of the inspection report.

A copy of the Compliance Inspection Report will be sent to Mr. Blair Henderson, who is designated as the Operations Manager for the waterworks. Copies will also be sent to Dr. Robert Bourdeau, Medical Officer of Health for the Eastern Ontario Health Unit, Mr. Mirek Tybinkowski, MOE Safe Drinking Water Branch, and Mr. Richard Pilon of the South Nation Conservation Authority

There were no compliance issues or required actions identified as a result of this inspection. Your attention is directed to the "Recommended Actions" section of this report.

Should you have any questions pertaining to the Compliance Inspection Report please do not hesitate to contact me at (613) 933-7402 extension 234.

Yours truly,

Jan Franssen
Inspector
Safe Drinking Water Branch
JF/cd

Enclosure

c: Mr. Blair Henderson, Operations Manager, OCWA Chesterville Hub
Dr. Robert Bourdeau, Medical Officer of Health, Eastern Ontario Health Unit
Mr. Mirek Tybinkowski, Water and Wastewater Specialist, Safe Drinking Water Branch
Mr. Richard Pilon, Director of Planning and Engineering, South Nation Conservation Authority

bc: Cornwall District File - SI ST DU CH 540