Ministry of the Environment, Conservation and Parks

Barrie District

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Ministère de l'Environnement, de la Protection de la nature et des Parcs

District de Barrie

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February 5, 2021

The Corporation of the Village of South River
63 Marie Street
South River, Ontario
P0A 1X0

Attention: **Mr. Don McArthur, Clerk-Administrator**
Re: South River Drinking Water System, 2020 Drinking Water Inspection Report

Please find enclosed the final report for the December 9, 2020 focused inspection of the South River Drinking Water System, Village of South River (DWS #220013562). This report provides an assessment of compliance with applicable legislation, Municipal Drinking Water Licence and Drinking Water Works Permit, Permits to Take Water and any other authorizing and/or control documents.

The Ministry's Licensing and Approvals personnel have access to the report. This is in keeping with the recommendations of Justice O'Connor arising from the Walkerton Inquiry.

There are no identified non-compliance items. The Owner and Operating Authority are reminded to remain diligent and vigilant going forward.

There are four identified Best Management Practice Recommendations that deal with a variety of non-regulatory issues within this report for your consideration.

In order to measure individual inspection results, the Ministry has established an inspection compliance risk framework based on the principles of the Inspection, Investigation & Enforcement (II&E) Secretariat and advice of internal/external risk experts. The Inspection Summary Rating Record (IRR), included as Appendix A of the inspection report, provides the Ministry, the system owner and the local Public Health Units with a summarized quantitative measure of the drinking water system's annual inspection and regulated water quality testing performance. Please note the attached IRR methodology memo describing how the risk rating model has improved to better reflect the health related and administrative non-compliance found in an inspection report. IRR ratings are published (for the previous inspection year) in the Ministry's Chief Drinking Water Inspector's Annual Report. If you have any questions or concerns regarding the rating and/or this report, please contact the undersigned or Craig Seabrook, Drinking Water Program Supervisor, at (705) 791-9428 or Sheri Broeckel, Drinking Water Program Supervisor, at (705) 716-3712.

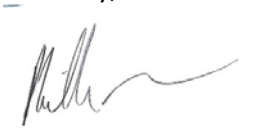
Please be aware that the North Bay-Timmins District Office of the MECP is still your direct contact for any water related issues going forward. Due to issues relating to the COVID pandemic, the Barrie District Office was asked to complete this inspection. The inspection process and protocol was adjusted to allow for limited direct interaction between personnel and no distribution sampling was conducted.

Section 19 of the Safe Drinking Water Act (Standard of Care) creates a number of obligations for individuals who exercise decision-making authority over municipal drinking water systems. Please be aware that the Ministry has encouraged such individuals, particularly municipal councilors, to take steps

to be better informed about the drinking water systems over which they have decision-making authority. These steps could include asking for a copy of this inspection report and a review of its findings. Further information about Section 19 can be found in *"Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils"* found on the Drinking Water Ontario website at www.ontario.ca/drinkingwater.

Please contact the undersigned, should you have any questions or concerns regarding the above.

Sincerely,



Phillip Sauer
Provincial Officer
Drinking Water Inspection Program - Inspector
Ministry of the Environment, Conservation and Parks
Barrie District Office
Phone: (705) 718-1995
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cc: Robert A-Muhong, Medical Officer of Health, North Bay Parry Sound District Health Unit
Clint Main, Chief Public Works Operator, Village of South River
Paul Dydra, Senior Operations Manager, OCWA Near North Cluster
Joshua Gravelle, Process Compliance Technician (South), OCWA Near North Cluster
David Ellingwood, North Bay Mattawa Conservation Authority
MECP Barrie Drinking Water Program Supervisor
MECP Barrie District Office File
MECP North Bay-Timmins Drinking Water Program Supervisor
MECP North Bay-Timmins District Office File

Ontario

Ministry of the Environment, Conservation and Parks

SOUTH RIVER DRINKING WATER SYSTEM

Inspection Report

Site Number:	220013562
Inspection Number:	1-OIRLU
Date of Inspection:	Dec 09, 2020
Inspected By:	Phillip Sauer

OWNER INFORMATION:

Company Name: SOUTH RIVER, THE CORPORATION OF THE VILLAGE OF
Street Number: 63 **Unit Identifier:**
Street Name: MARIE St
City: SOUTH RIVER
Province: ON **Postal Code:** P0A 1X0

CONTACT INFORMATION

Type: Operating Authority **Name:** Darren Aljoe
Phone: (705) 386-0594 **Fax:** (705) 386-0594
Email: daljoe@ocwa.com
Title: Overall Responsible Operator, OCWA North Eastern Ontario Hub

Type: Operating Authority **Name:** Paul Dyrda
Phone: (705) 303-9767 **Fax:** (705) 752-5965
Email: pdyrda@ocwa.com
Title: Senior Operations Manager, Ontario Clean Water Agency (OCWA) North Eastern Ontario Hub

Type: Operating Authority **Name:** Joshua Gravelle
Phone: (705) 568-7000 **Fax:** (705) 567-7974
Email: jgravelle@ocwa.com
Title: Process and Compliance Technician, OCWA, North Eastern Ontario Hub

Type: Owner **Name:** Clint Main
Phone: (705) 386-0245 **Fax:** (705) 386-0702
Email: srpworks@bellnet.ca
Title: Chief Public Works Operator, The Corporation of the Village of South River

Type: Owner **Name:** Don McArthur
Phone: (705) 386-2573 **Fax:** (705) 386-0702
Email: clerk@southriverontario.com
Title: Clerk-Administrator, The Corporation of the Village of South River

INSPECTION DETAILS:

Site Name: SOUTH RIVER DRINKING WATER SYSTEM
Site Address: 28 HOWARD Street SOUTH RIVER ON P0A 1X0
County/District: SOUTH RIVER
MECP District/Area Office: North Bay Area Office
Health Unit: NORTH BAY PARRY SOUND DISTRICT HEALTH UNIT
Conservation Authority: North Bay Mattawa Conservation Authority
MNR Office: Bracebridge Regional Office
Category: Large Municipal Residential
Site Number: 220013562
Inspection Type: Announced
Inspection Number: 1-OIRLU

Date of Inspection: Dec 09, 2020
Date of Previous Inspection: Oct 29, 2019

COMPONENTS DESCRIPTION

Site (Name): MOE DWS Mapping
Type: DWS Mapping Point **Sub Type:**

Site (Name): Forest Lake (South River)
Type: Source **Sub Type:** Surface
Comments:
The intake facilities consist of a 300 mm diameter intake pipe extending 232 m into Forest Lake, with a flared elbow in a wooden and concrete crib located at a depth of 4.5 m. An isolation valve is located in the low lift pumping station (LLPS). Two plastic, 15 mm lines (unused) reportedly run from the LLPS to the intake, one for pre-chlorination for zebra muscle control (with diffuser) and the second for raw water sampling.
The LLPS is located approximately 170 m south of the eastern end of Howard Street, at the south end of Tom Thomson Lane. The locked, entry alarmed building contains a 4.2 m deep raw water well, dual manual screens which separate the low lift intake well and the low lift pump well. There are continuous level monitors trended to the Sensory Control and Data Acquisition (SCADA) system at the water treatment plant (WTP) on either side of the screens. There are three submersible electric-driven low lift pumps (LLPs), each rated at 10 L/s, which typically operate automatically (manual control is possible) and sequentially in response to clearwell level sensors. Each LLP discharge is equipped with backflow prevention and manual valves. A low lift pressure control valve will return water to the intake pipe if there is too much pressure in the raw water main to the WTP. The LLPs will lock-out on a low level alarm from the low lift pump well level switch.
The raw watermain to the WTP is 200 mm diameter stainless steel with an isolation valve at the LLPS discharge point. It runs approximately 400 m subsurface to the WTP. At the WTP inlet, there is a continuously monitored magnetic flow meter, a mechanical control valve, a raw water sample tap, and a supply line feeding the raw water turbidity analyser and pH meter, both continuously monitored through SCADA.
Chemical addition begins immediately after the analyser supply line.
Analyser discharge is directed to the roadside ditch.

Site (Name): TREATED WATER
Type: Plant Classification **Sub Type:** Class III
Comments:
Treatment consists of chemical addition, coagulation, flocculation, sedimentation, filtration and disinfection by chlorination with contact time. The WTP has a rated capacity of 1680 m3/day. All of the processes are completed within the approximately 26 m long, 21 m wide enclosed WTP building located at 28 Howard Street, the Village of South River, District of Parry Sound, Ontario.
As above, raw water passes the raw water analysers and is injected with liquid potassium permanganate (iron and manganese control by oxidation/precipitation), sodium carbonate (soda ash – for elevation of pH (powder batched on-site)) and liquid potassium chloride (coagulant). These chemical feeds are triggered by raw water flows and are flow paced. After chemical injection and prior to entering the package plants the water passes through an in-line mixer.
A coagulant feed failure will lock-out the LLPs and effectively stop treatment.
Water is then typically directed equally into two Napier Reid package treatment plants via individual headers and automated valves (plants can operate individually).
Within the separate package plants, water flows into flocculation tanks, each equipped with a flash mixer (0.38 kW variable speed motor), a vertical flocculator (0.56 kW variable speed motor) and a floc recirculator (0.56 kW variable speed motor). The flocculation tanks provide a 30 minute detention time.
A polymer is injected into the flocculator chambers (at the recirculator) as a coagulant aid.
Continuous pH monitoring is completed within the mixing/flocculation chamber. An unused pH analyser is also

located at each package plant inlet.
Following flocculation, the water flows into two semi-circular settling/clarification chambers. Each chamber has level monitoring, inclined tube settlers, 150 mm inlet piping and 150 mm sludge collection and recirculation headers. Each tank is designed for an overflow rate of 2.4 m/hour. Settled sludge is drawn down via an automated valve to the backwash clarification tank.
The clarified water overflows from the tube settlers in the clarifiers into gravity fed, individual multi-media filters consisting of garnet, silica sand and granulated activated carbon (GAC) with gravel underlayers. There is continuous level monitoring on the surface of each filter. Continuous turbidity monitoring is completed on each filter effluent line with programmable LLP lock-outs on high/high alarm set point for the affected plant(s) to effectively stop water production. Continuous flow monitoring is also completed on each filter effluent line.
Filter backwashes are triggered on programmed pass through volume (typical), time, filtered water turbidity and/or head-loss pressure monitoring. Backwashes are completed using chlorinated water from the clearwells via two submersible, 15 HP pumps. Each backwash line has continuous flow monitoring, automated valving and backflow prevention.
Filter-to-waste is completed during filter ripening. Backwash water is directed to the backwash effluent handling system (backwash clarification tank).
Filtered water is directed into a common header and injected with a 12% sodium hypochlorite solution for primary and secondary disinfection. Continuous, pre-contact free chlorine residual monitoring (operational purposes) is completed on this water. The header splits and chlorinated water is directed equally (typical, but manual valving exists to isolate individual cells) into a two celled (each with an approximate capacity of 573 m3), subsurface, concrete walled, baffled clear well reservoir beneath the WTP. Each cell is equipped with continuous level monitoring (controls LLPs), low level lock-outs for emergency low levels and valved lines feeding the high lift pump well (HLPW) by gravity and high lift pump (HLP) draw down. Overflows are directed to the roadside ditch.
The HLPW has an estimated capacity of 140 m3. Six (6) vertical turbine HLPs (two rated at 7 L/s at 45 m total dynamic head (TDH) with 5.6 kW motors; two rated at 14 L/s at 45 m TDH with 11.2 kW motors; and two fire pumps (one duty, one standby) rated at 56 L/s at 38 m TDH with 22 kW motors) are situated above and draw from this tank (sequential starts on system pressure monitoring set points). These pumps direct treated water to the common discharge header which is equipped with a post-contact sodium hypochlorite injection point, a sodium carbonate injection point (post treatment pH adjustment), a continuously monitored treated water turbidity analyser, a treated water/distributed water continuously monitored magnetic flow meter, continuous distribution system /treated water discharge pressure monitoring, continuous treated water pH monitoring, a plant supply line with flow monitoring and backflow prevention, and, a continuously monitored treated water free chlorine residual analyser.
Treated water leaves the WTP is directed underground into the South River Distribution System.

The SCADA system continuously collects and monitors information from instruments and sensor throughout the works and automatically controls plant processes and generates alarms.
There is an on-site septic system.
Emergency backup power is provided by a 135 kW radiator cooled diesel generator housed in a separate building located approximately 20 m to the east of the WTP. The fuel is contained in double walled storage tank outside and to the rear of the generator building. The generator is programmed for automatic starts on stops on power interruptions and restoration. It is monitored and alarmed for operational parameters.

Site (Name): Chemical Addition Systems
Type: Other **Sub Type:** Treatment Facility
Comments:
Chemical Addition Systems –

All of the solution chemical tanks are situated on or in secondary containment vessels.
All of the pumps are variable speed and chemical addition is flow paced.

Coagulant System – Currently feeding potassium chloride into the raw water header prior to the in-line mixer. There are two metering pumps (one duty and one standby) each rated at approximately 5 L/hour. There is a polyethylene

bulk storage tank (approximately 15000 L capacity) which is filled from the exterior of the plant by tanker and which is vented to the exterior of the WTP. A transfer pump, drawing from the bulk tank and controlled by a float switch in the adjacent, approximately 450 L day tank, maintains solution level in the day tank.
Coagulant is fed continuously while the SCADA system registers raw water flows. A failure of this system will shut-down water production at the WTP.

pH Adjustment System – Currently feeding sodium carbonate (soda ash) into the raw water header prior to the in-line mixer and the HLPW discharge. Bagged, dry powdered is batched on site in a mixing tank using distribution water. It is transferred to the day tank/bulk tank and withdrawn by three metering pumps (on pre-package plant, one post HLPW and one standby) each rated at approximately 3 L/hour.
The pre-filtration pumps are triggered by raw water flows and the post HLPW pump is triggered by treated water flows).

Iron and Manganese Control System - Currently feeding potassium permanganate into the raw water header prior to the in-line mixer. There is a single metering pump (converted pre-filter chlorine pump) rated at approximately 3 L/hour. There is a polyethylene storage tank (approximately 1500 L capacity) with an in-tank mixer. Material is received in 220 L drums and transferred to the day tank.
Chemical is fed continuously while the SCADA system registers raw water flows.

Polymer Feed System – Flocculation aid and sludge thickening agent – Currently feeding 'MagnaFloc LT 25' into the recirculation chambers in both package plants and into the sludge holding/thickening tank. There are three metering pumps (one for each package plant and one for the sludge thickening tank) each rated at approximately 6 L/hour. There is a polyethylene mixing, aging and storage tank (approximately 450 L capacity). Chemical is batched on-site and transferred to the storage tank.
Chemical is feed continuously while the SCADA registers raw water flows for the package plants and when backwashing occurs. Additional application may occur during sludge thickening practices.

Sodium Hypochlorite Feed System – Primary and Secondary Disinfection – Feeding liquid sodium hypochlorite into the common filter effluent line prior to the clearwells and into the treated water header prior to the final free chlorine residual analyser (if needed). There are three metering pumps (two duty, one standby) each rated at approximately 3 L/hour. Material is received in 220 L drums and transferred to the approximately 350 L day tank.
Chemical is fed continuously to the filter effluent line while the SCADA system registers raw water flows and manually to the HLP discharge line as desired.
A failure of both pumps will lock-out the LLPs and effectively stop water production.

Site (Name): Generator
Type: Stand-by Power Generation **Sub Type:**
Comments:
Emergency backup power is provided by a 135 kW radiator cooled diesel generator housed in a separate building located approximately 20 m to the east of the WTP. The fuel is contained in a double walled storage tank outside and to the rear of the generator building. The generator is programmed for automatic starts and stops on power interruptions and restoration. It is monitored and alarmed for operational parameters.

Site (Name): Wastewater Treatment System
Type: Other **Sub Type:** Dewatered
Comments:
The South River Water Treatment Plant Process generates wastewater through;
i) filter backwashing, and
ii) clarifier blow-down to remove sludge.

i) FILTER BACKWASH WATER
Filter backwash water is directed to the CLARIFICATION TANK. The supernatant from the clarification tank is decanted and discharged to a storm sewer which discharges to the lake. The settled solids from the CLARIFICATION TANK are pumped to the SLUDGE HOLDING TANK.

ii) CLARIFIER BLOW-DOWN
Clarifier blow-down is directed to the WASTEWATER SURGE TANK. Supernatant from the WASTEWATER SURGE TANK is directed to the CLARIFICATION TANK, while the settled solids are directed to the SLUDGE HOLDING TANK

SLUDGE HOLDING TANK
The sludge holding tank receives settled solids from both the CLARIFICATION TANK and the WASTE SURGE TANK. Supernatant from the SLUDGE HOLDING TANK is directed to the CLARIFICATION TANK. The settled solids from the SLUDGE HOLDING TANK are pumped to the sludge bagging system 3-5 times/week for disposal at Machar Township Landfill.

POLYMER SYSTEMS
There are two process wastewater polymer systems;
- one system consists of a storage tank, mechanical mixer, and a single metering pump that injects polymer into the package plant waste effluent line (common pipe for both clarifier blowdown and filter backwash water)
- The second system forms part of the twelve (12) bag sludge dewatering system.

A description of process wastewater equipment is available in Section 1 of Drinking Water Works Permit No.200-201.

Site (Name): DISTRIBUTION SYSTEM
Type: Other **Sub Type:** Class I
Comments:
The South River distribution system supplies approximately 1110 people according to the 2016 census. It is classified as a Class I Water Distribution Subsystem (#1497).
As of December 2020, there were 505 total service connections: 451 residential and multi-residential services; 38 commercial connections (mix of commercial, industrial and institutional); and 16 separate residential services in Machar Township fed from a watermain in South River Village.
Two service additions are planned in 2021 (one residential and one commercial).
There are 30 customers who do not receive water, but who are billed for fire protection.
The distribution system infrastructure consists of a mixture of cast iron, ductile iron, asbestos and PVC piping. Pipes range in diameter from 300 mm down to 100 mm. The installed length of pipe in the entire distribution system is not currently known.
Fire protection is provided.
There are 11 dead end locations, approximately 60 main valves and 66 fire hydrants. There are no water storage facilities, no rechlorination facilities, pressure boosting facilities, flow monitoring or residual monitoring facilities.
There are no known pressure sustaining or regulating valves.
There are no DWSs which receive water from this distribution system and there other DWSs supplying water to this DWS.

INSPECTION SUMMARY:

Introduction

- **The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water related policies and guidelines during the inspection period. The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment and distribution components as well as management practices.**

  This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O.Reg. 170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.

  This report is based on a "focused" inspection of the system. Although the inspection involved fewer activities than those normally undertaken in a detailed inspection, it contained critical elements required to assess key compliance issues. This system was chosen for a focused inspection because the system's performance met the ministry's criteria, most importantly that there were no deficiencies as identified in O.Reg. 172/03 over the past 3 years. The undertaking of a focused inspection at this drinking water system does not ensure that a similar type of inspection will be conducted at any point in the future.

  This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

  The South River Drinking Water System (DWS) is composed of the South River WTP and South River Water Distribution subsystems. The WTP is classified as a Class III Water Treatment (WT) subsystem and the Distribution System is classified as a Class I Water Distribution (WD) subsystem. These subsystems have been assigned Certificate #2807 (November 15, 2005) and #1497 (July 14, 2005) respectively. For the purposes of this report they will collectively be referred to as the DWS.
  This DWS directly serves an estimated population of 1100 persons (2016 census) through 505 service connections within the Village of South River, Corporation of the Village of South River (geographical District of Parry Sound). There are 16 residences (all individual services) served by the South River DWS in the neighbouring Township of Machar.
  The WTP was commissioned in 2001 but the DWS predates this particular facility.
  The DWS is owned by The Corporation of the Village of South River (Village). It is operated by the Ontario Clean Water Agency (OCWA) under contract to the Owner although the Owner does have responsibility for aspects of the maintenance and operation of the Distribution subsystem.
  It is categorized as a Large Municipal Residential (LMR) DWS, as defined by Ontario Regulation (O. Reg.) 170/03. It is assigned DWS number 220013562.
  The source water for the DWS is surface water drawn from Forest Lake (South River) to one low lift pumphouse at the shoreline and then on to the WTP.
  The North Bay Mattawa Conservation Authority (NBMCA) acts as the Risk Management Official (RMO) for the Village regarding the Safe Drinking Water Act, 2002 and source protection activities.
  The North Bay Parry Sound District Health Unit (NBPSDHU) acts as the Medical Officer of Health (MOH) for this facility and area.
  Treatment consists of coagulation, flocculation, sedimentation/settling, iron and manganese removal, filtration and chlorination with contact time (provided by a dedicated baffled chlorine contact chambers at the WTP) for primary and secondary disinfection. There is also wastewater management at the WTP.
  The distribution system is composed of in-ground piping, fire hydrants and valves. There are no additional out-buildings, water storage facilities or unusual valving appurtenances. A mix of residential and commercial users are supplied.

Introduction

There were no Certificates of Approval (CofAs) in effect for the DWS during the inspection period.
There were no Provincial Officer Orders (POOs) in effect for the DWS during the inspection period.
Municipal Drinking Water Licence (MDWL) Issue 3 (#200-101) was issued on March 7, 2017. (It should be noted that Issue 4 was provided in draft for review the day of this Inspection so will not be incorporated into this Report)
Drinking Water Works Permit (DWWP) Issue 3 (#200-201) for the South River DWS was issued on March 7, 2017.
One Schedule C under DWWP 200-201 was in effect dated December 8, 2017. (It should be noted that Issue 4 was provided in draft for review the day of this Inspection so will not be incorporated into this Report)
One Permit to Take Water (PTTW) was in effect during the inspection period: PTTW 4340-BA6RUQ issued on March 14, 2019 and expiring on March 14, 2029.
This announced, focused inspection was conducted pursuant to section 81 of the SDWA in order to assess compliance with the requirements of O. Reg. 170/03, the SDWA and other regulations issued there under, and applicable portions of the Ontario Water Resources Act (OWRA) and the Environmental Protection Act (EPA) and the regulations issued there under.
The drinking water inspection included: a physical inspection of the treatment equipment and facilities and some distribution components; interviews with operational staff; and, a review of relevant documents from the period of October 29, 2019 to December 9, 2020 (the "inspection period").
Direct, on-site interaction was limited to the on-duty operator with electronic information provisions in order to adhere to COVID-19 safety protocols as much as possible. Samples were not collected from the DWS.
The physical inspection and the main interview were conducted on December 9, 2020.
The previous inspection (unannounced and focused) of the DWS was conducted on October 29, 2019. Inspection Report 1-L0AK2 was issued for that inspection.
There were three identified non-compliance items which appear to have been adequately addressed and there were five provided best management practice recommendations (BMPs) which have been addressed and/or considered.

Source

- **The owner had a harmful algal bloom monitoring plan in place.**

  OCWA has created a Standard Operating Procedure (SOP) entitled 'Responding to a Blue-Green Algae Bloom'. It provides direction regarding algal sampling and potential corrective actions during the warm weather months, some of which is detailed below.
  Raw and treated water samples are collected weekly and sent to an accredited laboratory. The raw water is tested weekly for microcystin-LR during the months of June through October. If the raw water result is greater than 1.0 ug/L (or an algal bloom is identified or suspected), the lab is directed to also analyse the treated water sample. Adverse water quality incident (AWQI) notifications are completed if the treated water microcystin-LR result is equal to or greater than 1.5 ug/L.
  If a resample also produces a result greater than 1.5 ug/L, the bloom is confirmed as cyanobacteria/ a harmful algal bloom and further corrective actions will be taken with consultations with the local medical officer of health (MOH) and the MECP.

  It should be noted that the draft MDWL Issue 4, Conditions 6.1-6.4 of Schedule C, detail the requirements for a Harmful Algal Bloom monitoring, reporting and sampling plan.

Capacity Assessment

- **There was sufficient monitoring of flow as required by the Municipal Drinking Water Licence or Drinking Water Works Permit issued under Part V of the SDWA.**

  The DWWP provides rated capacities for the LLPs, HLPs and the sludge pumps in their descriptions.
  Parts 1.1, 2.1 and 2.3 of Schedule C of the MDWL for this DWS respectively state:
  1.1 For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated

Capacity Assessment

capacity in column 2 of the same row (South River Drinking Water System - 1680 m3/day).
2.1 For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for:
2.1.1 The flow rate and daily volume of treated water that flows from the treatment subsystem to the distribution system.
2.1.2 The flow rate and daily volume of water that flows into the treatment subsystem.
2.2 requires monitoring of any other required flows of which there are none.
2.3 Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:
2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;
2.3.2 The time and date of the measurement;
2.3.3 The reason for the exceedance; and
2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.
At the WTP, continuously monitored magnetic flow meters register raw water flows and treated water distribution point of entry flows in L/sec.
Signals are sent to the SCADA within the WTP and recorded approximately every 15-30 seconds. Records indicate that both meters were operational throughout the inspection period.
These two flow meters appear to be sufficient to meet the monitoring and recording requirements prescribed by the various authorizing documents (i.e. raw water flows from the source lake and volume of water directed to the treatment works and treated flows directed to the distribution system).
Any interruptions and/or exceedances should be captured and recorded.
Additionally, there is flow monitoring for each filter effluent line (two), drawn treated filter backwash water, the sludge pumps, plant service water and wastewater decant flow. None of these flow meters are required by the MDWL.

- **The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Municipal Drinking Water Licence issued under Part V of the SDWA.**

  The total rated capacity for the WTP (treated water discharged to the distribution subsystem) provided by the MDWL is 1680 m3/day. This is the same as the takings allowed by the PTTW (1,680,00 L/day at 1,160 L/min, 24 hours per day, 365 days per year).
  There are no provided maximum instantaneous flow rates within either the MDWL or DWWP except for the LLP and HLP pump capacity descriptions. The LLPs reportedly cannot exceed approximately 20 L/s (1200 L/min) with two pumps running.
  There were no recorded exceedances of the rated capacity during the inspection period. Peak raw water flows of 1097.8 m3 occurred on April 22, 2020 (65% of allowed takings), and peak treated water flows of 822.9 m3 (49% of rated capacity) occurred on January 10, 2020.
  The average day raw water takings during the inspection period were 555.23 m3 (33% of allowed takings) while the average day treated water flows during the inspection period were 462.18 m3 (28% of rated capacity). The difference is service water (backwashes and analysers).

Treatment Processes

- **The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.**

  Applicable authorizing document(s) for the South River DWS during the inspection period:
  MDWL 200-101 and DWWP 200-201 Issues 3 – issued March 7, 2017.
  A Schedule C, incorporating the addition of the potassium permanganate injection system for a six month trial period, was prepared and issued on December 8, 2017.

Treatment Processes

The in-place equipment appeared to correspond to that described in the MDWL and DWWP Issues 3.
The Operator advised that one LLP and one package plant desludge activator were out of service at the time of inspection. Both were scheduled for repair.
There were some changes made to the works that had not been captured in the Process Flow Diagram provided in Schedule D of the DWWP (drawing dated Jan. 1999). OCWA typically uses a process flow chart captured from the SCADA operational screen which has the correct chemicals and addition points.
The observed differences include but are not limited to: the raw water chemical addition points are located after the raw water flow meter, not before; the chemicals in use have been changed (sodium carbonate instead of sodium hydroxide, potassium permanganate has replaced the pre-filter sodium hydroxide injection point); the pre-filtration free chlorine analyser has been moved to post-filtration/pre-contact; and, it appears that there should be a second sludge transfer pump in the wastewater system.
None of these observed differences affect the descriptions provided in the DWWP.
The distribution system description indicates that there is approximately 13 km of watermain which appears to be correct but could not be fully confirmed by the Owner.
There were no Forms 1 or 3 prepared during the inspection period.
No changes were observed which would have required the preparation of these forms within the distribution system or to any fuel burning/emission producing equipment within the works.

- **The owner/operating authority was in compliance with the requirement to prepare Form 1 documents as required by their Drinking Water Works Permit during the inspection period.**

  There were reportedly no distribution works additions, alterations, modifications or changes made during the inspection period which would have required the completion of a Form 1.
  No distribution works were observed to have been undertaken.
  However, this was identified as a non-compliance item during the previous inspection. Planned works were completed prior to the completion of a Form 1 when the Form is required to be completed prior to completion of the works.
  The Form 1 was completed by the Owner in that instance.
  Going forward, where possible, the Owner has advised that a Form 1 will be completed prior to any planned works in the distribution system which would require the completion of such a Form.

- **The owner/operating authority was in compliance with the requirement to prepare Form 2 documents as required by their Drinking Water Works Permit during the inspection period.**

  A Form 2 was completed and signed by the Owner on October 21, 2019 (during previous inspection period) for modifications to the polymer tanks and temporary containment units during a trial.
  It should be noted that Director Notifications were signed by the Owner on April 4, 2019 and September 3, 2020 and provided to the MECP for the flocculant aid and wastewater polymer systems.
  No other changes were observed or recorded which would have required completion of a Form 2.

- **Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Drinking Water Works Permit and/or Municipal Drinking Water Licence issued under Part V of the SDWA at all times that water was being supplied to consumers.**

  Section 1-4 of Schedule 1 of O. Reg. 170/03 requires the Owner of a surface water DWS to ensure the provision of water treatment equipment that is designed to be capable of chemically assisted filtration, and of achieving, at all times, primary disinfection in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario, including at least 99 per cent (2-log) removal or inactivation of Cryptosporidium oocysts, at least 99.9 per cent (3-log) removal or inactivation of Giardia cysts and at least 99.99 per cent (4-log) removal or inactivation of viruses by the time water leaves the point of entry units or water enters the distribution system.
  The MDWL requires the following minimum log removal/inactivation for WTP: 2-log removal or inactivation of Cryptosporidium oocysts, 3-log removal or inactivation of Giardia cysts and 4-log removal or inactivation of viruses.
  The process of conventional filtration is assigned 2-log removal/inactivation of Cryptosporidium oocysts, 2.5-log

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removal/inactivation of Giardia cysts and 2-log removal/inactivation of viruses. The process of chlorination is assigned 0.5 log removal of Giardia cysts and 2-log removal/inactivation of viruses.
Schedule E of the MDWL specifies the following criteria for achievement of assigned log removal/inactivation credits for the process of conventional filtration at South River WTP:
1. A chemical coagulant shall be used at all times when the treatment plant is in operation;
2. Chemical dosages shall be monitored and adjusted in response to variations in raw water quality;
3. Effective backwash procedures shall be maintained including filter-to-waste or an equivalent procedure during filter ripening to ensure that effluent turbidity requirements are met at all times;
4. Filtrate turbidity shall be continuously monitored from each filter; and
5. Performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month shall be met for each filter.
Reviewed records appear to confirm that the process of conventional filtration at the WTP satisfied the required criteria for the prescribed removal/inactivation credits.
SCADA continuously monitors and trends turbidity analysers on both filter effluent lines which appear to have been operational at all times that their respective filters were in operation. Turbidity readings of 0.4 NTU or greater will trigger a backwash of the affected filter and readings of 1.0 NTU or higher will disable the affected filter. The LLPs will lock-out if both filters are affected.
Raw water flow triggered coagulant addition appeared to have been continuous during filter operations. Chemical dosages and pump functionality are monitored daily. Adjustments are made in response to raw water quality variations. A coagulant failure will lock-out the LLPs.
Filter-to-waste occurs during backwashes and filter ripening. Programmed backwash time must elapse and the filtered water turbidity must meet programmed parameters before filtered water is directed to the clearwells.
Operator call-out alarms are generated for any problems with the filters or coagulant systems.
Monthly filter performance was calculated for each filter. The criterion was met in at least 99% of all monthly calculations. The SCADA system only records filter effluent turbidity for the purposes of the criteria while filtered water is being directed to the clearwells.
The MDWL specifies the following criteria for achievement of assigned log removal/inactivation credits for the process of chlorination at the WTP:
1. Sampling and testing for free chlorine residual shall be carried out by continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario; and
2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned.
A SCADA trended continuous treated water free chlorine residual analyser is provided treated water from the HLP discharge header. Intended contact time has been completed prior to this point. The SCADA will initiate alarms and operator call-outs at programmed high and low free chlorine residuals.
The SCADA system continuously calculates and trends CT based on water temperature, pH, free chlorine residual at the HLP discharge header, HLP flow rate, clearwell level and baffle factor. A CT failure (64 mg/L-min during a worst case scenario event is required for 0.5 log removal/inactivation of Giardia oocysts) will trigger an alarm.
A manual computer CT calculation can be performed by staff by entering monitored, required values for various parameters. Staff calculate CT if provision of adequate CT is in doubt.
OCWA provided an expected worst case scenario CT calculation for the WTP (water temperature of 0.5°C; pH at 8.50; treated water free chlorine residual of 1.00 mg/L; HLP flow rate of 85 L/s; clearwells 1 and 2 both at 2.5 m depth; and, baffle factor of 0.5) of 70.29 mg/L-min.
Various parameters necessary for the calculation of CT are monitored and alarmed at programmed set points through SCADA including: clearwell depths; post-contact free chlorine residuals; raw and treated water pH; raw water temperature; and, HLP flows.
Some of these parameters are also interlocked to lock-outs of the LLPs.
Reviewed records appear to confirm that the process of chlorination at the WTP satisfied the required disinfection criteria for the achievement of the prescribed removal/inactivation credits.
There were no recorded or observed incidents where effective treatment was compromised or was likely to have

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been compromised during the inspection period.

- **Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.**

  Subsection 1-2(2) of Schedule 1 or O. Reg. 170/03 states:
  The owner of a drinking water system and the operating authority for the system shall ensure the following:
  4. If the drinking water system's water treatment equipment provides chlorination or chloramination for secondary disinfection, the equipment is operated so that, at all times and at all locations within the distribution system,
  i. the free chlorine residual is never less than 0.05 milligrams per litre, if the drinking water system provides chlorination and does not provide chloramination.
  Continuous addition of sodium hypochlorite while water is directed from the filters to the clearwells provides free chlorine residual for both primary and secondary disinfection. There are no rechlorination facilities within the distribution system.
  Secondary free chlorine residual tests were conducted within the distribution system at the same time that microbiological samples were collected; for weekly regulatory testing; for observational purposes; and, during maintenance practices and repairs.
  There were no recorded secondary free chlorine residuals below 0.05 mg/L during the inspection period (lowest recorded distribution free chlorine residual was 0.06 mg/L (June 2, 2020)).
  During regular operations, the lowest recorded free chlorine residual in the treated water discharged from the WTP during the inspection period was approximately 1.50 mg/L.
  The distribution free chlorine residual tests were generally variously conducted at seven different locations.
  The Operator advised that there are continuously running bleeders at the dead-ends and extremities within the distribution system. These flowing points are operated to help ensure fresh water is continuously being drawn to all points within the distribution system.

- **Where an activity has occurred that could introduce contamination, all parts of the drinking water system were disinfected in accordance with Schedule B, Condition 2.3 of the Drinking Water Works Permit.**

  When necessary, repairs and installations are reportedly completed in accordance with applicable AWWA Standards and/or the MECP Watermain Disinfection Procedure (June 1, 2016 version).
  The Owner advised that new materials and appurtenances installed within the distribution system are disinfected prior to installation and/or prior to using them to provide water to users.
  There were a number of watermain breaks recorded which were likely to introduce contaminants to the DWS. The Owner provided documentation indicating disinfection was completed on the new installed materials. Any repairs are conducted on charged watermains when possible.
  The Operator advised that any new equipment is swabbed with 12% sodium hypochlorite prior to installation.

Treatment Process Monitoring

- **Primary disinfection chlorine monitoring was conducted at a location approved by Municipal Drinking Water Licence and/or Drinking Water Works Permit issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved.**

  At the WTP, treated water is drawn from the HLP discharge header, which is the point of entry (POE) to the distribution system, and directed through a continuous free chlorine residual analyser (described in the DWWP as POE on-line chlorine residual analyser).
  This location is representative of the point at which CT has been achieved and is the approved monitoring location. CT has been achieved at the discharge from the two clearwells and the entry to the HLP well.

  Additionally, there is a DWWP described on-line chlorine residual analyser for 'preliminary Clearwell 1 monitoring'. This analyser draws water from the common filter effluent line prior to the clearwell inlets and after the initial sodium hypochlorite injection point. It is used for operational process monitoring purposes.

Treatment Process Monitoring

- **Continuous monitoring of each filter effluent line was being performed for turbidity.**

  There are two SCADA trended, monitored and alarmed turbidity analysers installed, one on each of the two filter effluent lines. These analysers draw water from locations prior to the clearwell inlets. These analysers operate at all a times, including during filter backwashes.

- **The secondary disinfectant residual was measured as required for the distribution system.**

  Subsections 7-2(3) and (4) of Schedule 7 of O. Reg. 170/03 prescribe that at least seven free chlorine residuals must be collected each week from the distribution system of a LMR DWS. Sampling must either be done continuously, once daily or four tests must be conducted on one day of the week and three tests must be conducted on another day of the week at least 48 hours before the next and after the last tests are/were conducted and each test done on one day must be from a different location.
  Records provided indicate that the Operator conducted at least the minimum required number of tests for free chlorine residual each week. The correct numbers of secondary disinfectant residual tests were conducted at the prescribed frequencies (twice per week, (four one day and three on another day at least 48 hours apart), and at appropriate locations during each week of the inspection period.
  Samples were regularly collected from at least four representative locations in each week. Seven sample locations were regularly used.

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

  Clause 3 of subsection 6-5(1) of Schedule 6 of O. Reg. 170/03 requires:
  Test results recorded under paragraph 1 or 2 must be examined, within 72 hours after the tests are conducted,
  i. by a certified operator, in the case of,
  A. a large municipal residential system,
  The tests referred to are those conducted by continuous monitoring equipment.
  Logbook records and monitoring records appear to confirm this. If there was a period longer than 72 hours when no one was scheduled to work, the on-call operator attended the site.
  Logs of record reviews are maintained at the PHs.
  Remote electronic record reviews can be completed at any time by staff.
  OCWA has also assigned an operator to complete remote reviews of their facility trending data at least three days a week (72 hours apart). Records are reportedly kept of these reviews.

- **All continuous monitoring equipment utilized for sampling and testing required by O. Reg.170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, were equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.**

  Section 6-5 of Schedule 6 of O. Reg. 170/03 requires that the continuous monitoring equipment causes an alarm to sound when a test result for a parameter is above the maximum alarm standard or below the minimum alarm standard specified in the regulation. The maximum alarm standard for turbidity is 1.0 Nephelometric Turbidity Units (NTU). The minimum alarm standard for free chlorine residual required to achieve primary disinfection is 0.1 mg/L less than the concentration of free chlorine residual that is required to achieve primary disinfection.
  Section 6-5(1)5 of Schedule 6 of O. Reg. 170/03 requires that where an automatic shut-off mechanism is not used on a continuous monitoring equipment, in addition to alarming when the test result for a parameter is outside the range prescribed in the table to Schedule 6-5, the continuous monitoring equipment must cause an alarm to signal if the analyzer loses power or malfunctions so that an operator can be immediately alerted and take appropriate action.
  The SCADA system continuously monitors various analysers, processes and equipment within the WTP. There are many alarms, notifications and shut-offs which can be programmed. Any programmed, designated alarms which are registered by the SCADA are routed to the in-plant auto-dialer which then calls out to a contracted 24 hour monitoring service by phone line. The monitoring service then calls the on-call operator designated for the affected

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facility. If a response is not received within a defined timeframe, the monitoring service then begins to call the various OCWA operational personnel designated in their provided call tree until a live body is reached.
While there are many programmed call-out alarms at the WTP, the two filter effluent turbidity analysers and the treated water/POE free chlorine residual analyser are the required continuous monitoring equipment at this WTP.
The filter effluent turbidity analysers are both continuously monitored and alarmed through SCADA. The set points are operator programmable but, at the time of inspection, a high reading of 0.4 NTU or greater would cause the affected package plant to go into backwash. A high-high reading of 1.0 NTU or greater would cause the affected package plant to be disabled. If both package plants register 1.0 NTU or greater, the LLPs are locked out to disable water production at the WTP. There are no low alarms programmed as low turbidity is desirable.
The POE free chlorine analyser is programmed to generate call-out alarms for both high and low concentrations. OCWA uses 1.00 mg/L in their worst case scenario CT calculation so, the alarm cannot be set below 0.90 mg/L for strict regulatory compliance. The low alarm set point is never less than 1.50 mg/L but is operator adjustable and is typically programmed within the range of 1.50 mg/L to 2.00 mg/L. The high alarm set point is variable and not regulatory.
There are no programmed HLP shut-offs programmed for low free chlorine residual readings. The distribution system is pressurized by the HLPs and a loss of pressure could prove to be catastrophic for system integrity.
The WTP has uninterruptable power supplies (UPSs) to support the analysers during power losses.
A backup diesel generator supplies sufficient power to run the entire WTP during power failures. Operation of the generator and a number of generator monitoring conditions are also alarmed and would result in a call-out if activated.
The coagulant system is alarmed for chemical pump and chemical flow failures. A coagulant failure would trigger a call-out alarm and disable the LLPs.
If the programmable logic controller lost power, the entire WTP would likely shut-down.
Records appear to confirm that all required alarms were functional throughout the inspection period.
The Operator regularly confirms that communications are functional and alarms are checked by way of regular operational upsets and/or SCADA notifications.
It was identified during the previous inspection that alarms were not generated and no lock-outs were triggered if either of the turbidity analysers or the POE free chlorine residual analyser malfunctioned or lost power as required. The Operator immediately corrected this issue when they were made of aware of it. Programming has been initiated such that the SCADA now registers analyser power loss or malfunctions for all three instruments and will activate a call-out alarm for any of the three affected by this issue and will disable the affected package plant(s) for the affected turbidity analyser(s).
This alarm programing for a turbidity analyser was tested at the time of inspection and was found to be operational.

- **Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format.**

  Raw data signals for all monitored parameters at the WTP (including required continuously monitored analysers for filtered water turbidity and POE free chlorine residual, raw and treated water flows and CT) are continuously registered and sent to the SCADA monitoring system.
  The HACH CL17 Chlorine Analyzer in use at the WTP for the POE reading does a test every 2.5 minutes. The value from the previous test is displayed until a new test is completed.
  The SCADA polling and recording frequency for all parameters is approximately every 15 to 30 seconds. The SCADA data is viewable at the WTP and remotely by OCWA staff at any time.
  This data is stored indefinitely at the WTP and is uploaded daily to a centralized computer at the OCWA hub office.
  At minimum, primary disinfectant residual must be tested and recorded every five minutes and filter effluent turbidity readings must be completed at least once every 15 minutes.
  It is suggested that, at minimum, raw water and treated water flows should be recorded at least once every five minutes.

- **All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's**

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instructions or the regulation.

Work orders are generated monthly regarding the calibration/verification checks for the four on-line turbidity analysers (raw water (HACH Surface Scatter), two filtered water (HACH 1720e) and treated water (GLI Model 8220)) and the two free chlorine residual analysers (pre-contact = ProMinent Dulcometer Cl analyser with 0-5 mg/L range and pH stabilization, POE = HACH CL17 Chlorine Analyzer (0-5 mg/L range)).
The work order records confirm that the on-line turbidity analyzers are verified monthly against a bench-top turbidity analyser using purchased secondary standards. The two filter effluent turbidity analysers are calibrated every three months using a prepared stabilized formazin standard. These units have internal logs for calibration and maintenance tracking.
If any of the units are found to be operating outside of acceptable ranges or it is determined that maintenance is required, they are cleaned, maintained and calibration verified and/or calibrated in accordance with manufacturer's directions.
The bench-top turbidity analyzer is calibrated annually by the manufacturer.
Verifications of the two on-line free chlorine analysers are performed monthly by comparing measured values against a hand-held colourimetric chlorine analyser that is calibrated/verified annually by the manufacturer.
If the chlorine analysers are found to be out of the acceptable reading range (typically greater than 5% difference), they are cleaned, maintained and verified in accordance with manufacturer's directions.
The POE free chlorine residual analyser is serviced and calibration verified/calibrated annually by the manufacturer.
The completed maintenance and verification/calibration procedures appeared to meet or exceed manufacturer recommendations.

Operations Manuals

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

  An in depth review of the manuals was not completed or possible during the inspection but, as determined in an overview, the available manuals appeared to provide sufficient information/guidance for the safe and efficient operation of the system as required by section 28 of Ontario Regulation 128/04.
  However, the 'Manuals' are composed of many different documents and the Operator advised that there have been many updates and changes within the DWS since the document was fully reviewed and updated. The manual may not incorporate all of these changes.
  The manuals appeared to contain information related to all components of the system and operational practices.
  The schematic drawings and distribution system drawings appear to be generally up-to-date, with some minor observed differences which aren't likely to impact the operations in any meaningful way.

- **The operations and maintenance manuals met the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA.**

  Section 16.0 inclusive of conditions 16.1 through 16.4 of Schedule B of the MDWL provide the minimum inclusions of the operations and maintenance manual or manuals.
  The Operations Manual, associated documents and SOPs appear to contain all of the required information, procedures and plans. It/they are available at the WTP and portions are also available on OCWA's computer system.
  The CT calculations required by subcondition 16.2.3 are included.

Logbooks

- **Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.**

  Only adequately certified operators were/are employed by the Operating Authority and the Village to operate this

Logbooks

DWS.
Records from the WTP and the distribution system appear to confirm that these operators conducted all of the operational tests, recorded all of the results obtained and that they collected all of the required samples to be sent to an appropriately accredited laboratory (as desired). In-house testing was completed by certified operators.

Security

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

The LLP building (not visited during the inspection), the generator building and the WTP have self locking steel doors and are secured with entry alarms at all times. Additionally, there is a motion sensor in the WTP control room. Bright exterior lightning has been installed outside the WTP.
The DWS is typically visited at least five times per week.
No trespassing signage and chemical hazard notices are posted on the WTP access doors.
The vent screens and louvered access ports at the WTP and generator building appeared to be intact and operational.
All observed access conduits/pipes appeared to be capped, screened or to have some other form of access prevention device.
The generator is contained within locked and alarmed separate building, adjacent to the WTP. There is a double walled external diesel fuel tank. The fill line was capped. There did not appear to be any accessible access points or fuel lines.
The clearwell and HLP well access ports were located within the WTP building and were inaccessible to the public. The accesses are locked, solid metal, and sealed. The observed seals appeared to be intact.
Any overflows from water tanks are directed to the on-site wastewater management system and/or a roadside ditch.
Steel and concrete bollards are strategically placed to protect doors and access points from vehicular collisions.
Chemicals appeared to be contained within adequately sized secondary containment enclosures.
All of the observed hydrants within the distribution system were located away from roadways and vehicular traffic, were capped and painted to be visible.
No other part of the distribution system appeared to be accessible or to be at risk due to inadequate security.

Certification and Training

- **The overall responsible operator had been designated for each subsystem.**

For the South River Water Treatment (WT) subsystem and Distribution System (WD) subsystem, OCWA is the Operating Authority. They are responsible for the provision of adequately qualified personnel to act as, and to be designated as, overall responsible operator(s) (OROs).
The WTP is categorized as a Class III WT subsystem. Any ORO must hold at least a Class III WT certificate to be permanently designated as ORO of this facility. On a temporary basis, someone with a Class II WT certificate may be designated (not more than 150 days in a year).
The distribution system is categorized as a Class I WD subsystem. Any fully certified operator who holds any of at least a Class I WT certificate, Class I Water Distribution and Supply certificate and/or a Class I WD certificate may be designated as ORO of the distribution subsystem.
OCWA has designated two primary OROs for the South River subsystems. Whomever of the two is the on-call operator, is the designated ORO for that week. They typically alternate ORO/on-call duties weekly. Both hold at least Class III WT certificates and Class III WD certificates.
If either is unable to act for any reason, OCWA has also identified two further fully qualified operators to act as ORO in their absence.
Operators-in-training (OITs) of any classification cannot be designated as ORO under any circumstances, nor can Limited Subsystem certified operators (Limited Subsystem certificates are not valid within this DWS as it is a LMR DWS). The Village has operators who performed operations within the distribution system during the inspection period. They all hold/held OIT WT certificates. They operated under the authority of, and report to, the designated ORO assigned by OCWA.

Certification and Training

There are currently no OITs employed by OCWA within this operational hub.

- **Operators-in-charge had been designated for all subsystems which comprised the drinking water system.**

  OCWA designates any fully qualified operator who acts within either of the South River subsystems as operator-in-charge (OIC).
  An operator must hold at least a Class I WT certificate to be designated OIC of the WTP. To be designated OIC of the distribution system, an operator must hold any of at least a Class I WT, WD and/or a WDS certificate.
  Records indicate that only OCWA operators who held/hold at least a Class I WT and at least a Class I WD certificate have been designated OIC of the DWS while they were working within it or on-call for it.
  Records are maintained of the individual operators who act within the DWS.
  During the inspection period, there were operators with OIT WD certificates who conducted operational duties within the WD subsystem. OITs cannot be designated operator-in-charge (OIC). The OITs acting within this DWS consulted fully qualified OCWA operators regarding operational adjustments and were not designated as OICs.

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

  As required by O. Reg. 128/04, records appear to confirm that only operators who held WT certificates acted within the WTP and only operators who held any or all of WT, WD and/or Water Distribution and Supply certificates acted within the South River Water Distribution subsystem.

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

  Records appear to confirm that only WT certified operators made adjustments to the treatment equipment within the WTP during the inspection period.
  There is no treatment equipment within the water distribution system. The OITs employed by the Village typically consulted fully certified OCWA operators during their activities within the water distribution subsystem.

Water Quality Monitoring

- **All microbiological water quality monitoring requirements for distribution samples were being met.**

  Section 10-2 of Schedule 10 of O. Reg. 170/03 requires that the owner of a drinking-water system and the operating authority for the system must ensure that at least eight distribution water samples are taken every month, with at least one of the samples being taken in each week. One additional sample per month is required for every additional 1000 persons supplied by the DWS. The owner of the drinking-water system and the operating authority for the system must ensure that each of the samples is tested for Escherichia coli and total coliforms and that at least 25 per cent of the samples required to be taken are tested for general bacteria population expressed as colony counts on a heterotrophic plate count (HPC).
  Since the South River DWS is an LMR system supplying an estimated 1100 persons, at least nine samples must be collected in each month and at least one per week.
  A review of sampling records confirmed that at least 12 distribution water samples were collected (three per week) in each month of the inspection period. All of these samples were tested for Escherichia coli and total coliforms. At least one of the weekly samples has also been analysed for HPC which exceeds the 25 percent requirement.

- **All microbiological water quality monitoring requirements for treated samples were being met.**

  Section 10-3 of Schedule 10 of O. Reg. 170/03 requires the owner of a drinking-water system and the operating authority for the system must ensure that a treated water sample is taken at least once every week and tested for Escherichia coli, total coliforms and general bacteria population expressed as colony counts on a heterotrophic plate count (HPC).
  During the inspection period, samples of treated water were collected once every week and tested for Escherichia coli, total coliforms and HPC.

- **All inorganic water quality monitoring requirements prescribed by legislation were conducted within the**

Water Quality Monitoring

required frequency.

Subsection 13-2 of Schedule 13 of O. Reg. 170/03 requires that owner of a large municipal residential system and the operating authority for the system must ensure that at least one treated water sample is taken every 12 months, if the system obtains water from a raw water supply that is surface water and that each of the samples is tested for every parameter set out in Schedule 23.
Subsection 6-1.1(5) additionally allows for samples to be collected up to 30 days before or 30 days after the anniversary date of the collection of the previous sample.
Treated water samples were collected and analysed for every parameter set out in Schedule 23 on January 22, 2019 and January 20, 2020.
None of the results exceeded the prescribed standards (or maximum allowable concentrations (MACs)) or half of the MACs.
The next samples are due to be collected by January of 2021.

- **All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Subsection 13-4 of Schedule 13 of O. Reg. 170/03 requires that owner of a large municipal residential system and the operating authority for the system shall ensure that at least one treated water sample is taken every 12 months, if the system obtains water from a raw water supply that is surface water and tested for every parameter set out in Schedule 24.
  Subsection 6-1.1(5) additionally allows for samples to be collected up to 30 days before or 30 days after the anniversary date of the collection of the previous sample.
  Treated water samples were collected and analysed for every parameter set out in Schedule 24 on January 22, 2019 and January 20, 2020.
  None of the results exceeded the prescribed standards (or maximum allowable concentrations (MACs)) or half of the MACs. All of the parameters provided results below their respective minimum detection limits (MDLs).
  The next samples are due to be collected by January of 2021.

- **All haloacetic acid water quality monitoring requirements prescribed by legislation are being conducted within the required frequency and at the required location.**

  Section 13-6.1 of Schedule 13 of O. Reg. 170/03 requires that the owner of a drinking water system that provides chlorination and the operating authority for the system must ensure that at least one distribution water sample is taken in each calendar quarter, from a point in the drinking water system's distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of haloacetic acids and tested for haloacetic acids (HAAs). O. Reg. 170/03 defines the "calendar quarter" as the three-month period that begins on January 1, April 1, July 1 or October 1.
  A standard of 80 ug/L came into effect for this parameter on January 1, 2020 which will be expressed as a running annual average (RAA) of quarterly results.
  Samples were collected and tested for total haloacetic acids from the distribution system on the following dates and with following results: October 21, 2019 (30.2 ug/L), January 20, 2020 (21.8 ug/L), April 20, 2020 (39.2 u/L), July 20, 2020 (58.0 u/L) and October 13, 2020 (54.9 ug/L). The RAA for HAAs at the time of the inspection was 43 ug/L.
  All of the samples collected in 2020 were collected from one location with a likely potential for formation of HAAs.
  It should be noted that various sample locations have been tried since sampling began in 2017 in accordance with Ministry guidance, in order to find a location with a likely potential for formation of these compounds. These compounds reportedly form at different locations than trihalomethanes (THMs) as they tend to form early after application of chlorine or may reform later in the distribution system whereas THM concentrations tend to increase with longer residence time.
  It appears that sampling is being conducted at the location which produced the highest historical result.

- **All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.**

Water Quality Monitoring

Subsection 13-6 of Schedule 13 of O. Reg. 170/03 requires the owner of a drinking water system that provides chlorination and the operating authority for the system must ensure that at least one distribution water sample is taken in each calendar quarter, from a point in the drinking water system's distribution system that is likely to have an elevated potential for the formation of trihalomethanes and tested for trihalomethanes (THMs).
O. Reg.169/03 sets the standard for THMs as 0.100 mg/L (100 ug/L) which is expressed as the RAA of the quarterly results.
O. Reg. 170/03 defines the "calendar quarter" as the three-month period that begins on January 1, April 1, July 1 or October 1.
The correct numbers of samples for THMs have been collected at the correct frequency from the South River distribution system since the date of the last inspection.
Distribution water samples were collected and tested for THMs on the following dates and with following results: October 21, 2019 (28 ug/L), January 20, 2020 (25 ug/L), April 20, 2020 (34 u/L), July 20, 2020 (62 u/L) and October 13, 2020 (58 ug/L). The RAA for THMs at the time of the inspection was 45 ug/L.
All of the samples collected in 2020 were collected from one location with a likely potential for formation of THMs. However, it should be noted that various sample locations have been tried in order to find a location with a likely potential for formation of these compounds. THMs typically develop with longer residence times so the farthest point in the distribution system is typically the location with the highest formation potential.
The location used for all sample collection within the inspection period is located in close proximity to the treatment works.
Historical sampling data appears to indicate that other locations within the distribution system may have greater THM formation potential than the selected sample location. The locations that provided the results with the highest concentrations of THMs (1 Fitz Avenue and locations on Kilpper Drive) have not been sampled since 2016 and/or 2017.
It should be noted that the Fitz Avenue location is a private home and the home owner does not want further sampling to be completed at that location.

- **All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.**

  Section 13-7 of Schedule 13 of O. Reg. 170/03 requires that the owner of a drinking water system and the operating authority for the system must ensure that at least one treated water sample is taken every three months and tested for nitrate and nitrite.
  A month is defined as a calendar month by O. Reg. 170/03.
  The correct numbers of samples for nitrates and nitrites have been collected at the correct frequency from the HLP discharge at the WTP and analysed by an accredited laboratory since the date of the last inspection.
  During the inspection period, treated water samples were collected and tested for nitrate and nitrite on October 21, 2019, January 20, 2020, April 20, 2020, July 20, 2020 and October 13, 2020.
  The sample results ranged from 0.058 mg/L to 0.135 mg/L (standard is 10.0 mg/L).

- **All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  A test for sodium on treated water must be conducted at least once every 60 months as prescribed by section 13-8 of Schedule 13 of O. Reg. 170/03.
  A sodium sample was last collected from the HLP discharge at the WTP on January 20, 2020 (result of 50.3 mg/L). The sample was analysed by SGS Environmental Laboratories.
  The reportable limit for this parameter is 20 mg/L and the aesthetic limit is 200 mg/L where the average person can taste salt.
  A sample was previously collected on January 22, 2018 (result of 24.6 mg/L). This reportable limit exceedance was reported and assigned adverse water quality incident (AWQI) #138657. A resample was completed for this sample on January 30, 2018 (result 24.0 mg/L).
  Samples were also previously completed in January of 2016, 2014 and 2013 (previous 60 month sample). All exceeded the reportable limit.

Water Quality Monitoring

In order to adhere to the reporting timeframe of not more than 60 months from the previously reported sample, a sample is due to be collected by January of 2023.

- **All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  A test for fluoride on treated water must be conducted at least once every 60 months as prescribed by section 13-9 of Schedule 13 of O. Reg. 170/03.
  A sample for fluoride was last collected from the HLP discharge at the WTP on January 19, 2016 (result of <0.06 mg/L (<MDL)). The sample was analysed by SGS Environmental Laboratories.
  The standard is 1.5 mg/L.
  A sample was previously collected in January of 2011.
  A sample is next due to be collected in January of 2021.

- **All water quality monitoring requirements imposed by the MDWL or DWWP issued under Part V of the SDWA were being met.**

  Condition 1.5 of Schedule C, Table 3 of MDWL sets the limit for annual average concentration for suspended solids in the effluent discharged from the WTP Backwash Wastewater Facilities into the natural environment at 25 mg/L.
  Condition 4.2 - Environmental Discharge Parameters - related to Table(s) 7 of Schedule C of MDWL requires that monthly composite samples of treated backwash wastewater be taken and tested for suspended solids at the point of discharge to storm sewer (point of discharge from the WTP) that discharges to Forest Lake.
  Composite samples can be collected manually (three grab samples collected and mixed from and event – one at beginning of discharge event, one in the middle of the event and one at the approximate end of the event) or by automated means during a discharge event with at least one composite sample collected per hour of the event. An autosampler is present at the WTP but, the Operator prefers to collect manual composite samples.
  Composite samples of backwash wastewater were collected monthly and tested for suspended solids. The 2019 and 2020 (11 months) annual average concentrations of suspended solids in the discharged effluent from the WTP were 6.67 mg/L and 5.27 mg/L respectively. Both were (or were expected to be) lower than the limit prescribed by the MDWL.

  It should be noted that raw and treated water microcystin-LR sampling requirements are being included within the next version of the MDWL. The Operator began weekly raw water microcystin sampling in 2019. Samples were collected weekly in 2020 from June through October. Treated water samples are also submitted weekly but will only be analysed if microcystin-LR is found in the raw water above 1.0 ug/L.

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

  Free chlorine residuals were recorded at the same times that all distribution and treated water microbiological samples were collected.

Water Quality Assessment

- **Records showed that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O.Reg. 169/03).**

  There were no exceedances of the Standards.
  The test for sodium on a sample of treated water collected on January 20, 2020 from the WTP provided a result of 50.3 mg/L. A resample was not collected as this was an additional sample and not the prescribed 60 month sample.
  A sample collected for sodium on January 22, 2018 (60 month prescribed sample) provided a result of 24.6 mg/L.
  A resample collected on January 30, 2018 provided a result of 24.0 mg/L.
  The reportable limit for this test parameter is 20.0 mg/L (Subsection 1, paragraph 8 of Section 16-3 of Schedule 16 of O. Reg. 170/03). The aesthetic limit for this parameter is 200 mg/L where a typical person can taste saltiness in

Water Quality Assessment

the water.
These results do not exceed any of the Standards prescribed by O. Reg. 169/03.
The results were reported as required and were assigned Adverse Water Quality Incident (AWQI) number 138657.
The NBPSDHU had previously provided a notification letter advising residents of the elevated sodium concentration in the water and that those on sodium reduced diets should be aware. This letter was posted and provided by the Owner and Operator as directed.
These results are mentioned because the Owner/Operator is only required to sample for sodium once in every 60 month period and is only required to notify for an elevated result once in every 60 month period. While these results were not related to samples collected within the inspection period, they impact actions taken regarding any future sodium samples collected until the 60 month sampling frequency and any potential required reporting is completed.

Reporting & Corrective Actions

- **Corrective actions (as per Schedule 17) had been taken to address adverse conditions, including any other steps that were directed by the Medical Officer of Health.**

  The following adverse conditions were reported to Spills Action Centre (SAC) and NBPSDHU as AWQIs during the inspection period: six watermain breaks and resulting loss of pressure to anywhere from two to thirty services (December 1, 2020 (AWQI 153118); August 25, 2020 (AWQI 151555); July 7, 2020 (AWQI 150534); April 2, 2020 (AWQI 149814); March 27, 2020 (AWQI 149799); and January 29, 2020 (AWQI 149502)); and, one system wide loss of pressure due to a generator failure at the WTP during a power outage (November 16, 2020 (AWQI 152969)).
  There are no prescribed corrective actions for loss of pressure within O. Reg. 170/03. However, as the losses of pressure resulted from watermain breaks, the Owner/Operating Authority must identify the type of watermain break (Category 1 or 2) as per the MECP's Watermain Disinfection Procedure (2016 version during the inspection period) and take action according to that document and their determination.
  The procedure prescribes, repair, flushing, restoration of adequate free chlorine residual and sampling /testing for microbiological parameters and free chlorine residual on two separate days, 24-48 hours apart for a Category 2 break (loss of pressure and suspected or confirmed introduction of contamination).
  Loss of pressure may be, and watermain breaks which introduce contamination are, reportable under section 16-4 of Schedule 16 of O. Reg. 170/03 – other observations indicating that improperly disinfected water is being directed to users.
  Corrective actions within a LMR DWS for 16-4 notifications are prescribed by section 17-2 of Schedule 17 of O. Reg. 170/03. They include immediate restoration of the proper disinfection; and, taking other steps as directed by the MOH.
  All of the breaks/pressure loss events were determined to be Category 2 breaks and/or likely to provide users with potentially improperly disinfected water.
  For each of the incidents, the NBPSDHU issued Boil Water Advisories (BWAs) for the affected areas/users and requested repairs, flushing of mains in the affected areas, restoring/increasing disinfection and resampling upstream, at the locations and downstream of the locations of the incidents.
  During each event, the watermains were repaired/repressurized, flushed, disinfectant residual was restored and tested and negative microbiological samples were collected as soon as possible. The NBPSDHU subsequently rescinded the issued BWAs upon receipt of satisfactory microbiological sample results and disinfectant residuals.

- **All required notifications of adverse water quality incidents were immediately provided as per O. Reg. 170/03 16-6.**

  Immediate verbal notifications for all AWQIs must be made to the SAC and the local MOH.
  Written notifications for all AWQIs to the SAC and the local MOH must be completed within 24 hours of the verbal notification/identification of the adverse condition.
  Written notices of issue resolution for all AWQIs must be provided to the SAC and the local MOH within seven days of the adverse condition being resolved.

Reporting & Corrective Actions

Records confirm that all of the required verbal and written notifications for the AWQIs which were reported from the DWS during the inspection period were completed within the prescribed timeframes and were made to the appropriate organisations.

- **Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.**

  Based on a review of monitoring data, logbook entries and other records, it appears that all alarms initiated within the South River DWS during the inspection period were responded to in an appropriate and timely manner by qualified personnel.

Other Inspection Findings

- **The following issues were also noted during the inspection:**

  The following issues were identified during the previous inspection:
  1. It is recommended that a formal program for the flushing of watermains is initiated.
  - Appears complete. The Operator advised that full flushing is completed twice per year (spring and fall) by the municipality (observed by OCWA) and spot flushing is completed as necessary for complaints or repairs. Directional flushing is reportedly completed throughout the distribution system with scouring velocities, use of dechlorination and other industry standard practices being implemented.
  2. It is recommended that a formal program for inspecting and exercising valves is initiated.
  - Appears complete. The Operator advised that all known main valves and hydrant valves are typically operated during full flushing practices twice per year (spring and fall) by the municipality (observed by OCWA). Records of the functionality of each valve are made and repairs are completed as possible when needed. The program has reportedly been created based on industry standard practices and has been reviewed by OCWA.
  3. It is recommended as a best management practice that the owner initiates a formal program which requires that all hydrants be revisited for inspection / operation with any regularity.
  - Appears complete. The Operator advised that all known hydrants are typically operated during full flushing practices twice per year (spring and fall) by the municipality (observed by OCWA). Records of the functionality of each hydrant are made and repairs are completed as possible when needed. The program has reportedly been created based on industry standard practices and has been reviewed by OCWA.
  4. It is recommended that the operating authority keeps detailed records of the production of sludge through the waste system that could be used for efficiency analyses and troubleshooting.
  - Considered complete. The Operator advised that they have considered this suggestion.
  5. It is recommended that secondary containment and labels of duty-tanks are provided for the polymer in use as soon as the trial of polymer is completed.
  - Complete. Labels have been applied to the polymer tanks and the tanks are all situated within or on secondary containment vessels.

  The following items were identified during the inspection:
  A) There were some inaccuracies in the process flow diagram incorporated into Schedule D of the WTP DWWP. Forward as #1.
  B) While there is a thorough accounting of most other equipment and materials installed within the WTP and distribution system, it did not appear that the Owner has an accurate accounting of the sizes, lengths and/or the composition of the watermains installed within the distribution system. Forward as #2.
  C) There are no free chlorine residual readings for the bleeder valve locations which are reportedly operated within the distribution system. Forward as #3.
  D) The selected/used THM sample locations may not be representative of the locations with the greatest potential for formation of disinfection by-products. Forward as #4.

- **The following items are noted as being relevant to the Drinking Water System:**

Other Inspection Findings

Draft Issues 4 of the South River MDWL and DWWP were provided for review just after the physical site inspection. The documents include microcystin sampling requirements and a new Watermain Disinfection Procedure reference in addition to other changes.

NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED

This section provides a summary of all non-compliance with regulatory requirements identified during the inspection period, as well as actions required to address these issues. Further details pertaining to these items can be found in the body of the inspection report.

Not Applicable

SUMMARY OF RECOMMENDATIONS AND BEST PRACTICE ISSUES

This section provides a summary of all recommendations and best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. In the interest of continuous improvement in the interim, it is recommended that owners and operators develop an awareness of the following issues and consider measures to address them.

1. The following issues were also noted during the inspection:

1. The process flow diagram incorporated into Schedule D of the WTP DWWP (drawing dated Jan. 1999, from the Operational Plan, Revision 5, December 30, 2014) has the following observed inaccuracies: the raw water chemical addition points are shown before the raw water flow meter, not after as installed; the chemicals in use have been changed (sodium carbonate instead of sodium hydroxide, potassium permanganate has replaced the pre-filter sodium hydroxide injection point); the pre-filtration free chlorine analyser has been moved to post-filtration/pre-contact; and, it appears that there should be a second sludge transfer pump in the wastewater system.
2. There does not appear to be an accurate record of what types, sizes or lengths of watermain have been installed within the distribution system. There has reportedly been no standard material or sizes installed in the past but standard practice is now to install PVC pipe for replacements or additions.
3. Flowing bleeder valves are reportedly continuously operated at the dead ends and extremities within the distribution to help ensure fresh water is delivered to all locations. There were no free chlorine residual readings provided from these locations confirming the effectiveness of this operational process or the provision of effective secondary disinfection residual to all parts of the distribution system.
4) Formation potential for THMs increases with longer residence time while HAA formation potential may be variable. DBP sample locations should be determined by review of sampling data from various locations and choosing the locations providing the highest concentrations.
The THM sample location used during the inspection period is not that which has historically provided results with the greatest concentrations. Since 2012 (THMs), Fitz Avenue samples have provided the single highest result for this parameters.
The COVID pandemic has made access to sample locations challenging.

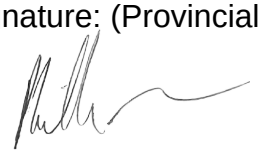
Recommendation:

1. The Operator should consider updating the process flow diagram included in the DWWP to include accurate equipment and chemicals.
Please note: The Owner and Operator have advised that they will make efforts to update and keep up-to-date a version of the 1999 WTP schematic drawing.
2. The Owner should attempt to compile an accurate inventory of locations, sizes, lengths and material types of installed watermains and should keep accurate records for any new or replacement watermains which they install going forward.
3. The Owner and/or Operator should consider completing and recording results for regular free chlorine residual tests at the dead ends and extremities of the distribution system to ensure the provision of adequate secondary disinfectant residual to all parts of the distribution system.
4. The Operator should evaluate their historical THM sampling results and choose the locations with the greatest disinfection by-product formation potential for future sampling locations.
Please note: The Operator has advised that they will consider undertaking THM sampling at various locations, previously untested, within the distribution system to evaluate THM formation potentials. This sampling may involve extra sampling along with their regular routine samples.

SIGNATURES

Inspected By: Signature: (Provincial Officer)

Phillip Sauer



Reviewed & Approved By: Signature: (Supervisor)

Craig Seabrook

Review & Approval Date: 05/02/2021

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.

Inspection Rating Record

Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2020-2021)

DWS Name:	SOUTH RIVER DRINKING WATER SYSTEM
DWS Number:	220013562
DWS Owner:	South River, The Corporation Of The Village Of
Municipal Location:	South River
Regulation:	O.REG 170/03
Category:	Large Municipal Residential System
Type Of Inspection:	Focused
Inspection Date:	December 9, 2020
Ministry Office:	North Bay Area Office

Maximum Question Rating: 510

Inspection Module	Non-Compliance Rating
Capacity Assessment	0 / 30
Treatment Processes	0 / 85
Operations Manuals	0 / 28
Logbooks	0 / 14
Certification and Training	0 / 42
Water Quality Monitoring	0 / 112
Reporting & Corrective Actions	0 / 66
Treatment Process Monitoring	0 / 133
TOTAL	**0 / 510**

Inspection Risk Rating	**0.00%**

FINAL INSPECTION RATING:	**100.00%**

Inspection Rating Record Generated On 05-FEB-21 (Inspection ID: 1-OIRLU).

Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2020-2021)

DWS Name:	SOUTH RIVER DRINKING WATER SYSTEM
DWS Number:	220013562
DWS Owner:	South River, The Corporation Of The Village Of
Municipal Location:	South River
Regulation:	O.REG 170/03
Category:	Large Municipal Residential System
Type Of Inspection:	Focused
Inspection Date:	December 9, 2020
Ministry Office:	North Bay Area Office

Maximum Question Rating: 510

Inspection Risk Rating	**0.00%**

FINAL INSPECTION RATING:	**100.00%**

Inspection Rating Record Generated On 05-FEB-21 (Inspection ID: 1-OIRLU).

Stakeholder Appendix

Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

Many useful materials are available to help you operate your drinking water system. Below is a list of key materials owners and operators of municipal residential drinking water systems frequently use.

To access these materials online click on their titles in the table below or use your web browser to search for their titles. Contact the Ministry if you need assistance or have questions at 1-866-793-2588 or waterforms@ontario.ca.

For more information on Ontario's drinking water visit www.ontario.ca/drinkingwater

PUBLICATION TITLE	PUBLICATION NUMBER
FORMS: Drinking Water System Profile Information Laboratory Services Notification Adverse Test Result Notification	 012-2149E 012-2148E 012-4444E
Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils	Website
Procedure for Disinfection of Drinking Water in Ontario	Website
Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids	Website
Filtration Processes Technical Bulletin	Website
Ultraviolet Disinfection Technical Bulletin	Website
Guide for Applying for Drinking Water Works Permit Amendments, & License Amendments	Website
Certification Guide for Operators and Water Quality Analysts	Website
Guide to Drinking Water Operator Training Requirements	9802E
Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption	Website
Drinking Water System Contact List	7128E01
Ontario's Drinking Water Quality Management Standard - Pocket Guide	Website
Watermain Disinfection Procedure	Website
List of Licensed Laboratories	Website

Ontario

Principaux guides et documents de référence sur les réseaux résidentiels municipaux d'eau potable

De nombreux documents utiles peuvent vous aider à exploiter votre réseau d'eau potable. Vous trouverez ci-après une liste de documents que les propriétaires et exploitants de réseaux résidentiels municipaux d'eau potable utilisent fréquemment. Pour accéder à ces documents en ligne, cliquez sur leur titre dans le tableau ci-dessous ou faites une recherche à l'aide de votre navigateur Web. Communiquez avec le ministère au 1-866-793-2588, ou encore à waterforms@ontario.ca si vous avez des questions ou besoin d'aide.

Pour plus de renseignements sur l'eau potable en Ontario, consultez le site www.ontario.ca/eaupotable

TITRE DE LA PUBLICATION	NUMÉRO DE PUBLICATION
Renseignements sur le profil du réseau d'eau potable Avis de demande de services de laboratoire Avis de résultats d'analyse insatisfaisants et de règlement des problèmes	012-2149F 012-2148F 012-4444F
Prendre soin de votre eau potable - Un guide destiné aux membres des conseils municipaux	Site Web
Marche à suivre pour désinfecter l'eau portable en Ontario	Site Web
Stratégies pour minimiser les trihalométhanes et les acides haloacétiques de sous-produits de désinfection	Site Web
Filtration Processes Technical Bulletin (en anglais seulement)	Site Web
Ultraviolet Disinfection Technical Bulletin (en anglais seulement)	Site Web
Guide de présentation d'une demande de modification du permis d'aménagement de station de production d'eau potable	Site Web
Guide sur l'accréditation des exploitants de réseaux d'eau potable et des analystes de la qualité de l'eau de réseaux d'eau potable	Site Web
Guide sur les exigences relatives à la formation des exploitants de réseaux d'eau potable	9802F
Échantillonnage et analyse du plomb dans les collectivités : échantillonnage normalisé ou réduit et admissibilité à l'exemption	Site Web
Liste des personnes-ressources du réseau d'eau potable	Site Web
L'eau potable en Ontario - Norme de gestion de la qualité - Guide de poche	Site Web
Procédure de désinfection des conduites principales	Site Web
Laboratoires autorisés	Site Web

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