

Ministry of the Environment,
Conservation and Parks

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

Barrie District

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September 4, 2020

Attention: John Pinsent Chief Administrative Officer

**Re: 2020 Drinking Water Inspection Report
Park Lane Subdivision Drinking Water System**

Please find enclosed the Ministry of the Environment, Conservation and Parks Inspection Report for Park Lane Subdivision Water System (Water Works # 220007132). The physical inspection process took place on July 14, 2020.

The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks legislation and authorizing documents, as well as evaluating conformance with Ministry drinking water-related policies and guidelines during the inspection review period.

No issues of non-compliance were identified in the inspection. No Provincial Officer's Orders were issued in conjunction with this inspection.

In order to measure individual inspection results, the Ministry has established an inspection compliance risk framework based on the principles of the Inspection, Investigation and Enforcement Secretariat and advice of internal/external risk experts. The Inspection Summary Rating Record (IRR), included as Appendix A of this 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. If you have any questions or concerns regarding the rating, please contact Sheri Broeckel, Drinking Water Supervisor at (705) 739-6386.

If you have any questions regarding the inspection report please feel free to contact the undersigned at (705) 716-5655.

Sincerely,



Laura Kent
Water Inspector
Provincial Officer
Barrie District Office, Ministry of the Environment Conservation and Parks

CC Medical Officer of Health, Simcoe Muskoka District Health Unit
Resources Technician/ Risk Management Official, Township of Ramara
Barrie District Office File, Ministry of the Environment, Conservation and Parks



Ministry of the Environment, Conservation and Parks

**PARK LANE SUBDIVISION DRINKING WATER SYSTEM
Inspection Report**

Site Number:	220007132
Inspection Number:	1-O72VP
Date of Inspection:	Jul 14, 2020
Inspected By:	Laura Kent

OWNER INFORMATION:

Company Name:	RAMARA, THE CORPORATION OF THE TOWNSHIP OF		
Street Number:	2297	Unit Identifier:	
Street Name:	HIGHWAY 12 Hwy		
City:	BRECHIN		
Province:	ON	Postal Code:	L0K 1B0

CONTACT INFORMATION

Type:	Operating Authority	Name:	Nick Leroux
Phone:	(705) 484-5374 x248	Fax:	(705) 484-0441
Email:	nleroux@ramara.ca		
Title:	Overall Responsible Operator		

Type:	Owner	Name:	John Pinsent
Phone:	(705) 484-5374 x222	Fax:	(705) 484-0441
Email:	jpinsent@ramara.ca		
Title:	Chief Administrative Officer		

INSPECTION DETAILS:

Site Name:	PARK LANE SUBDIVISION DRINKING WATER SYSTEM
Site Address:	7992 PARK LANE Crescent RAMARA ON L0K 2B0
County/District:	RAMARA
MECP District/Area Office:	Barrie District
Health Unit:	SIMCOE MUSKOKA DISTRICT HEALTH UNIT
Conservation Authority:	
MNR Office:	
Category:	Small Municipal Residential
Site Number:	220007132
Inspection Type:	Announced
Inspection Number:	1-O72VP
Date of Inspection:	Jul 14, 2020
Date of Previous Inspection:	Apr 25, 2019

COMPONENTS DESCRIPTION

Site (Name):	MOE DWS Mapping	Sub Type:	
Type:	DWS Mapping Point		
Site (Name):	RAW WATER WELL 1	Sub Type:	Ground Water
Type:	Source		

Comments:
Park Lane Production Well #1 is located within the former pumphouse at 7992 Park Lane Crescent, and is equipped with a submersible deep well pump with a rated capacity of 68 L/min. The well and former pumphouse are situated within a residential subdivision approximately 230 metres from the Black River. The well is located in an area which is

unlikely to be susceptible to flooding, and the contour of the immediately adjacent properties is such that surface water would be directed away from the pumphouse.
 According to the First Engineer's Report, Well #1 was constructed in 1973 by Snider Drilling of Craighurst (License No. 4816). The well is 61 metres deep and is constructed in a crystalline bedrock aquifer which is under confined artesian conditions. The well is constructed with 3.1 metres of 178 millimetre diameter casing grouted into the rock. Although Water Well Records for Well #1 do not identify where water bearing fractures are in the bedrock, water could not be heard trickling into the well bore at the time of the First Engineer's Report, indicating the upper portion of the bedrock does not contribute water to the well.
 The above grade connection is made by a pitless adapter, making the well more accessible for inspection. The well cap is aluminum, bolted and locked to the casing, screened, sealed and vermin proof. The casing extends approximately 50 cm above the floor of the pumphouse.

Site (Name): RAW WATER WELL 2
Type: Source **Sub Type:** Ground Water

Comments:
 Park Lane Production Well #2 was added to the system to provide a back-up water supply for the existing residential development and satisfies a recommendation put forth in the First Engineer's Report.
 Park Lane Production Well #2 is located approximately five metres north of the new pumphouse at 7995 Park Lane Crescent, and is equipped with a 3/4 horsepower submersible deep well pump with a rated capacity of 66 Litres/minute installed at a depth of 20 metres. The well is situated within a residential subdivision approximately 230 metres from the Black River. The well is located in an area which is unlikely to be susceptible to flooding, and the contour of the immediately adjacent properties is such that surface water would be directed away from the well casing.
 According to the 'Construction and Testing of Well #2 Report' prepared by Dixon Hydrogeology dated September 2003, Well #2 was constructed in a crystalline bedrock aquifer which is under confined artesian conditions, in 2002 by Baldwin Well Drilling of Kirkfield. The well was drilled to a depth of 27 metres below ground level. During testing, cascading of water was not noticed, indicating the upper portion of the bedrock does not contribute water to the well. The 152 millimetre casing is set to 12 metres depth and the annulus was reportedly sealed with benseal grout to a similar depth.
 The below grade connection is made by a pitless adapter. The well cap is secure and locked to the casing, screened, sealed and vermin proof. The casing extends approximately 55 centimeters above grade.

Site (Name): PUMPHOUSE TREATED
Type: Treated Water POE **Sub Type:** Pumphouse

Comments:
 Raw water from Wells #1 and #2 enter the pumphouse through two separate 50 millimetre raw water headers. Each raw water header is equipped with an ABB magnetic flow meter used for measuring raw water flows and a smooth-bore raw water sample tap. A pre-chlorination system is connected to each raw water header, assisting with iron and manganese oxidation prior to filtration. After passing through the flow meters, the water then combines into a single header where it passes through another flow meter that controls the sodium hypochlorite injection system. Two 453 litre hydropneumatic pressure tanks maintain pressure in the piping when the well pumps are off.
 In order to improve treatability of the raw water, an iron and manganese removal system has been installed. The system consists of a 60 litre solution tank in a secondary containment basin, two potassium permanganate metering pumps (one duty, one stand-by) complete with 4-20 mA control, automatic switchover and contact outputs for alarm notification of duty pump failure, and two feed lines discharging into the combined pre-treated water header upstream of an in-line mixer.

After being dosed with potassium permanganate and sodium hypochlorite, the water enters two automatic green sand filters, each capable of treating the entire design flow, each complete with diaphragm control/isolation valves, check valves, and inspection portals. The filter system is equipped with one backwash pump and a 13,500 litre concrete backwash waste holding tank that discharges supernatant to a ditch east of the pumphouse by a 1/4 horsepower pump set 0.3 metres above the tank floor. Settled solids are removed as required. Wastewater is held for 12 hours

to settle out the solids prior to discharge.

The sodium hypochlorite disinfection system consists of one 60 litre chemical storage tank with secondary containment and two chemical metering pumps (one duty, one stand-by) complete with 4-20 mA control, automatic switchover and contact outputs for alarm notification of duty pump failure, and two feed lines discharging into the filtered water line. After being dosed with sodium hypochlorite the water enters a 63 m3 standpipe, which provides contact time prior to the first customer.

Before discharging to the distribution system by two 1.5 HP high lift pumps rated at 1.0 L/s at 50 m (70 psi) TDH, the treated water passes through an ABB magnetic flow meter. The pumphouse is equipped with continuous chlorine residual and turbidity analysers powered by an uninterruptible power supply, as well as a smooth bore treated water sampling tap which are fed water from a point after the contact time and prior to leaving the pumphouse. The pumphouse is wired with a 24 hour alarm system which continuously monitors treated water quality for turbidity and free available chlorine residuals, illegal entry, chlorine duty pump and system fail, potassium duty pump and system fail, high and low reservoir levels, fire and each well for high raw flow.

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

Comments:

The Park Lane distribution system is designed to service 19 residential lots and the system is categorized as a Small Municipal Residential system as defined by Ontario Regulation 170/03. The distribution system is comprised of approximately 375 metres of 50 millimetre poly-vinyl chloride water main, isolation valves, two blow-offs and three designated sampling stations.

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 Park Lane Subdivision Drinking Water System serves an estimated population of 47 people. At least 17 of the available 19 lots have been developed. The drinking water system is owned and operated by the Corporation of the Township of Ramara. The Park Lane Subdivision Drinking Water System is categorized as a small municipal residential drinking water system, as defined by Ontario Regulation 170/03 and operates under drinking water system (DWS) number 220007132.

The Park Lane Subdivision Drinking Water System consists of 2 wells, treatment equipment, three distribution sample points, one in the old pumphouse and one at each end of the distribution system, along with blow offs. Treatment is provided by chlorination for primary and secondary disinfection. In April 2016 a 63 m3 capacity standpipe was installed to achieve contact time prior to water being directed to the distribution system. Sodium hypochlorite is also used for iron oxidation and potassium permanganate is used for iron and manganese oxidation. Green sand filters remove the oxidized iron and manganese. There are no storage structures within the distribution system. The distribution system consists of approximately 125 m of 50 mm diameter polyethylene watermain. This inspection was conducted pursuant to section 81 of the Safe Drinking Water Act in order to assess compliance with the requirements of Ontario Regulation 170/03 and Ministry control documents. The drinking water inspection included: physical inspection of the treatment equipment and facility; interview with Township of Ramara staff; and a review of relevant documents and data from the period of April 25, 2019 to July 14, 2020 (hereafter referred to as the "inspection review period"). The previous inspection of the Park Lane Subdivision Drinking Water System was conducted on April 25, 2019.

Source

- **The owner was maintaining the production well(s) in a manner sufficient to prevent entry into the well of surface water and other foreign materials.**

Subsection 1-2. (1) 1. of Schedule 1 of Ontario Regulation 170/03 requires that the owner of a drinking water system shall ensure that any well that serves as an entry point of raw water supply is constructed and maintained to prevent surface water and other foreign materials from entering the well.

There are two supply wells for Park Lane Subdivision Drinking Water System. Each of the wells has a secure cap

Source

and screened vent. The original well is located in the former pumphouse. Raw water samples were collected from each of the wells each week during the inspection review period. Two samples from Well 2 had a result of 1 TC CFU/100 ml and one sample from Well 2 had a result of 3 TC CFU/100 ml. Well 2 underwent some rehab work in August 2018 including flushing.

All results were zero from microbiological sampling of Well 1. Operators inspect the wells regularly.

- **Measures were in place to protect the groundwater and/or GUDI source in accordance with any the Municipal Drinking Water Licence and Drinking Water Works Permit issued under Part V of the SDWA.**

Condition 16.2.8 of Schedule B of Municipal Drinking Water Licence 147-102 Issue Number 2 requires an inspection schedule for all wells associated with the drinking water system, including all production wells, standby wells, test wells and monitoring wells.

Condition 16.2.9 of Schedule B of Municipal Drinking Water Licence 147-102 Issue Number 2 requires well inspection and maintenance procedures for the entire well structure of each well including all above and below grade well components.

Condition 16.2.10 of Schedule B of Municipal Drinking Water Licence 147-102 Issue Number 2 requires remedial action plans for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality.

The Operating Authority has developed a Well Inspection, Maintenance and Monitoring Plan. The Plan outlines the schedule for inspection of the two production wells supplying water for the Park Lane Subdivision Drinking Water System. The inspection schedule includes both above and below grade well components, as well as comparison of well level monitoring data and calibration of the flow meters. The Plan includes a list of conditions that may indicate a problem with the well casing or structure. The Plan includes a weekly well inspection checklist, monthly water level monitoring checks, yearly well performance inspection check list and a 5-year checklist of the unexposed well structure.

Operators regularly checked the well caps and above grade structures of the production wells during the inspection review period.

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.**

Condition 2.1 of Schedule C of Municipal Drinking Water Licence 147-102 Issue Number 2 requires that for each treatment subsystem, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of treated water that flows from the treatment subsystem to the distribution system, and the flow rate and daily volume of water that flows into the treatment subsystem.

There is a magnetic flow meter installed on each of the two raw water lines, as well as on the combined raw water header, and a magnetic flow meter installed on the distribution header. Each of the flow meters provides a 4-20 mA signal. Raw and treated water flows are continuously recorded on the SCADA system. Daily log print outs include the 24 hour flows, flow since midnight, percentage of allowable raw water taken and min, max and average flows from each of the raw water wells, the total raw water flow and the volume entering the distribution system.

- **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.**

Table 1 of Schedule C of Municipal Drinking Water Licence 147-102 Issue Number 2 states that the rated capacity for Park Lane Subdivision Drinking Water System is 50 m3/day. The rated capacity was not exceeded during the inspection review period with the exception of one day in January 2020 when the rated capacity was exceeded due to a leak. 104 m3 of treated water passed through the flow meter on the way to the distribution system. The leak was repaired in a timely manner.

Table 2 of Schedule C of Municipal Drinking Water Licence 147-102 Issue Number 2 states that the maximum flow rate for Well No. 1 is 68 L/min and the maximum flow rate for Well No. 2 is 68 L/min. Well No. 1 and Well No. 2 pumps can operate simultaneously for a period of time, never to exceed 6 hours per day, such that the rated

Capacity Assessment

capacity of 50 m3/d is not exceeded. There was one day in August 2019 when the maximum flow rate of 68 L/min was exceeded for Well 1 for 25 minutes and for Well 2 for seven minutes. On this day the Well 2 well pump was replaced. The only other day with raw water flow rates recorded above 68 L/min was the day in January 2020 when the flow meters were calibrated.

The well pumps regularly ran for more than 6 hours at the same time, however as already stated the rated capacity was not exceeded with the exception of the day when a leak caused an exceedance. The well pumps do not operate at the maximum flow rate of 68 L/min. The daily logsheets indicate the percentage of the total allowable raw water flow that has been drawn in the previous 24 hours.

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.**

At the time of inspection the installed equipment at the Park Lane Subdivision pumphouse appeared to be installed as per the description in Schedule A of Drinking Water Works Permit 147-202 Issue Number 3 and the process flow diagram contained in Schedule D. Issue Number 3 of the Drinking Water Works Permit was issued to include the standpipe in the schematic on July 18, 2019.

There is not a Schedule C contained in Drinking Water Works Permit 147-202 Issue Number 3.

- **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.**

During the inspection review period the Operating Authority completed nine Form 2s as required by the Drinking Water Works Permit.

- **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.**

Primary disinfection for Park Lane Subdivision Drinking Water System is achieved by chlorination and the use of the chlorine contact/concentration time (CT) concept to ensure the provision of effective pathogen inactivation. The effective disinfectant contact time required for the CT concept is attained within the 63 m3 standpipe that was installed in 2016 to replace the five contact tanks that were previously used for storage and contact time. Following completion of the intended contact time, free chlorine residuals are maintained within the distribution system for secondary disinfection purposes.

In efforts to ensure minimum treatment is provided at all times, a series of fail safes have been incorporated into the SCADA system. Fail safes include, the low alarm set point being at a level which affords sufficient time for an Operator to respond, prior to the chlorine residual dropping below the level required for primary disinfection. Operators typically perform CT calculations in the event of a low chlorine alarm to confirm that primary disinfection has been achieved.

In order to determine if primary disinfection was achieved at the Park Lane Subdivision Drinking Water System during the inspection review period, flow rates, free chlorine residuals, turbidity values, reservoir levels and the logsheets were reviewed.

These records indicated that, during the inspection review period, on the occasions where free chlorine residuals measured at the treatment facility fell below the minimum level required to ensure sufficient chlorine contact time under worse case scenarios (i.e. peak flow, low reservoir level, minimum chlorine residual), maintenance activities were being undertaken, such as testing the low chlorine alarm, calibration and changing the chlorine probe. There were four instances of an Operator responding to a low chlorine alarm, and one instance when an Operator responded to a low reservoir alarm. Appropriate actions were taken and primary disinfection was maintained. Operators regularly test the low chlorine alarm as well as the high and low reservoir and pressure alarms.

- **Records confirmed that the water treatment equipment which provides chlorination or chloramination for**

Treatment Processes

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.

Section 1-2. (2) 4. of Schedule 1 of Ontario Regulation 170/03 requires that 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, the free chlorine residual is never less than 0.05 mg/L, if the drinking water system provides chlorination and does not provide chloramination.

During the inspection review period there were no free chlorine residual results measured below 0.05 mg/L in the Park Lane Subdivision Drinking Water System. The lowest recorded distribution free chlorine reading during the inspection review period was 0.22 mg/L.

At the time of inspection the inspector measured the free chlorine residual at the sample point in the old pumphouse, Sample Station #2. The free chlorine residual measured 0.99 mg/L.

- **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.**

Condition 2.3 of Schedule B of Drinking Water Works Permit 147-202 Issue Number 3 requires that all parts of the drinking water system in contact with drinking water which are added, modified, replaced, extended or taken out of service for inspection, repair or other activities that may lead to contamination, shall be disinfected before being put into service in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:

- a) The ministry's Watermain Disinfection Procedure, effective January 29, 2017;
- b) AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
- c) AWWA C653 – Standard for Disinfection of Water Treatment Plants; and
- d) AWWA C654 – Standard for Disinfection of Wells.

The Park Lane Subdivision Water Works Contingency and Emergency Plan was updated in January 2019 by the Operating Authority. The Plan includes procedures for watermain leak repairs. The procedures are detailed and meet the requirements. The Ministry's Watermain Disinfection Procedure (effective for the system on January 29, 2017) as well as the most recent version of AWWA C651 are appended in the Plan. The Operations Manual includes direction for disinfecting wells and the AWWA Standard for Disinfection of Water-Storage Facilities.

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.**

The continuous chlorine analyser is fed sample water from the point after the standpipe where the intended CT is achieved, prior to the water entering the distribution system.

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

Subsection 7-2 (5) of Schedule 7 of Ontario Regulation 170/03 requires that the owner of a small municipal residential system that provides secondary disinfection and the operating authority for the system shall ensure that at least two distribution samples are taken each week in accordance with subsection (6) and are tested immediately for free chlorine residual, if the system provides chlorination and does not provide chloramination.

Subsection (6) states that at least one of the distribution samples referred to in subsection (5) must be taken at least 48 hours after, and during the same week as, one of the other distribution samples referred to in subsection (5).

During the inspection review period free chlorine residuals were measured in the Park Lane distribution system at least twice a week. The required timelines were always adhered to.

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

Treatment Process Monitoring

Subsection 6-5. (1) 3. of Schedule 6 of Ontario Regulation 170/03 requires that test results recorded under paragraph 1 or 2 must be examined, within 72 hours after the tests are conducted by a certified operator, in the case of small municipal residential system such as Park Lane Subdivision Drinking Water System.

An Operator typically reviews the data recorded by the continuous monitoring equipment each day. Data is able to be reviewed remotely and comments entered electronically onto the daily log sheets. There was one instance during the inspection review period when there were two consecutive days that the daily log sheets did not indicate that a review of the data had taken place. On the day prior and the day after the two day period of no review notes, the time of the reviews were not indicated. The logsheets before and after the two days of no recorded notes did indicate the times that chlorine residuals were measured in the pumphouse. The chlorine residuals were measured 72 hours and three minutes apart.

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

Subsection 6-5 (1) 8 of Schedule 6 of Ontario Regulation 170/03 states that the continuous monitoring equipment must be checked and calibrated in accordance with the manufacturer's instructions. Subsection 6-5(1)10 states that if the manufacturer's instructions do not indicate how often to check and calibrate the continuous monitoring equipment and paragraph 9 does not apply, the equipment must be checked and calibrated as often as necessary to ensure that test results are within the following margins of error: i. In the case of free chlorine residual, 0.05 milligrams per litre, if the concentrations usually measured by the equipment are less than or equal to 1.0 milligrams per litre, and proportionally higher if the concentrations usually measured are greater than 1.0 milligrams per litre, ii. In the case of free chlorine residual and total chlorine residual measured for the purpose of determining combined chlorine residual, 0.05 milligrams per litre, if the concentrations usually measured by the equipment are less than or equal to 1.0 milligrams per litre, and proportionally higher if the concentrations usually measured are greater than 1.0 milligrams per litre, iii. 0.1 Nephelometric Turbidity Units (NTU), in the case of turbidity.

Most days that Operators attend the pumphouse they compare the hand held colorimeter value for free chlorine residual with the continuous analyser. In the event that the discrepancy is greater than approximately 0.2 mg/L, the span of the continuous analyser is changed. The hand held units undergo a verification with secondary standards periodically, and are serviced by the manufacturer if the secondary verification is not within the required range. The hand held colorimeter was calibrated and verified in November 2019. The continuous analyser probe and electrolyte are changed as required and calibrated annually by a service technician. The electrolyte was changed in September 2019 and February 2020 and the analysers serviced by a technician in January 2020.

Operations Manuals

- **The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.**
- **The operations and maintenance manuals met the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA.**

Section 16.2 of Schedule B of Municipal Drinking Water Licence 147-102 issue number 2 requires that the operations and maintenance manual or manuals, shall include at a minimum:

16.2.1 The requirements of this licence and associated procedures;

Operations Manuals

- 16.2.2 The requirements of the drinking water works permit for the drinking water system;
- 16.2.3 A description of the processes used to achieve primary and secondary disinfection within the drinking water system, including where applicable:
 - a) A copy of the CT calculations that were used as the basis for primary disinfection under worst case operating conditions; and
 - b) The validated operating conditions for UV disinfection equipment, including a copy of the validation certificate;
- 16.2.4 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;
- 16.2.5 Procedures for the operation and maintenance of monitoring equipment;
- 16.2.6 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;
- 16.2.7 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;
- 16.2.8 An inspection schedule for all wells associated with the drinking water system, including all production wells, standby wells, test wells and monitoring wells;
- 16.2.9 Well inspection and maintenance procedures for the entire well structure of each well including all above and below grade well components; and
- 16.2.10 Remedial action plans for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality.

The Park Lane Water Works Operations and Maintenance manual meets the requirements of the Municipal Drinking Water Licence. The Operating Authority updated the Operations Manual in January 2019 to ensure that the descriptions contained and procedures outlined were accurate. In March 2020 the Operators and Classification section was updated to reflect changes to Operator certification.

The name of the former Overall Responsible Operator (ORO) is still indicated in the Operations Manual. The Operating Authority has updated the name to the current ORO with the Director. The Drinking Water Works Permit referenced in the Manual is Issue Number 2. On July 18, 2019 Drinking Water Works Permit 147-202 Issue Number 3 was issued for the Park Lane Subdivision Drinking Water System. Issue Number 3 reflects the standpipe installed at the pumphouse in the schematic. The Operating Authority will be changing in the near future, and at that time is anticipated that the updates to the Manual will be completed.

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.**

Security

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

The outside well, the sample stations, standpipe and the old pumphouse where the original well is located are locked, as well as the pumphouse which is also alarmed for forced entry. There are no other storage structures within the distribution system.

Certification and Training

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

The Park Lane Village Subdivision Drinking Water System is comprised of a Water Distribution Class 1 and Water Treatment Class 1 subsystem. The Overall Responsible Operator is designated for both of the subsystems.

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

Certification and Training

The Park Lane Subdivision Drinking Water System is comprised of a Water Distribution Class 1 and Water Treatment Class 1 subsystem. The Operators In Charge are designated for both of the subsystems.

- **All operators possessed the required certification.**
- **Only certified operators made adjustments to the treatment equipment.**

Water Quality Monitoring

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

Subsection 11-2 of Schedule 11 of Ontario Regulation 170/03 requires that the owner of a drinking water system and the operating authority for the system shall ensure that at least one distribution sample is taken every two weeks, if the system provides treatment equipment in accordance with Schedule 1 or 2 and the equipment is operated in accordance with that Schedule. The owner of the drinking water system and the operating authority for the system shall ensure that each of the samples taken is tested for Escherichia coli, total coliforms and general bacteria population expressed as colony counts on a heterotrophic plate count (HPC) if secondary disinfection is provided.

During the inspection review period two distribution samples were taken each week, except for one week when one distribution sample was taken. All samples were tested for the required parameters.

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

Subsection 13-2 (3) of Schedule 13 of Ontario Regulation 170/03 requires that the owner of a small municipal residential system and the operating authority for the system shall ensure that, at least one water sample is taken every 60 months and tested for every parameter set out in Schedule 23.

During the inspection review period treated water samples were collected and tested for all Schedule 23 parameters on August 21, 2019. Previously samples were tested for Schedule 23 parameters on August 16, 2016.

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

Subsection 13-4 (3) of Schedule 13 of Ontario Regulation 170/03 requires that the owner of a small municipal residential system and the operating authority for the system shall ensure that, at least one water sample is taken every 60 months and tested for every parameter set out in Schedule 24.

During the inspection review period treated water samples were collected and tested for all Schedule 24 parameters on August 21, 2019. Previously samples were tested for Schedule 24 parameters on August 16, 2016.

- **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 Ontario Regulation 170/03 requires that the owner of a drinking water system that provides chlorination or chloramination and the operating authority for the system shall ensure that at least one distribution 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 (HAA), and have the samples tested for haloacetic acids.

The requirement to sample for HAA came into effect on January 1, 2017. The standard for HAA as a reportable limit came into effect on January 1, 2020.

During the inspection review period a sample was collected from the Park Lane Subdivision distribution system in May 2019, August 2019, November 2019, February 2020 and May 2020 and tested for HAA as required. The average of the HAA samples taken during the inspection review period was 56.6 ug/L.

Water Quality Monitoring

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

Section 13-6 of Schedule 13 of Ontario Regulation 170/03 requires that the owner of a drinking water system that provides chlorination or chloramination and the operating authority for the system shall ensure that at least one distribution sample is taken every three months, 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 trihalomethanes (THMs). The samples are to be tested for THMs.

During the inspection review period samples were collected and tested for THMs in the Park Lane distribution system in May 2019, August 2019, November 2019, February 2020 and May 2020. The average for THMs during the inspection review period was 69.8 ug/L.

- **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 Ontario Regulation 170/03 requires that the owner of a drinking water system and the operating authority for the system shall ensure that at least one water sample is taken every three months and tested for nitrate and nitrite.

During the inspection review period samples tested for nitrate and nitrite were collected from the treated water point of entry for Park Lane Subdivision Drinking Water System in May 2019, August 2019, November 2019, February 2020 and May 2020 as required.

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

Section 13-8 of Schedule 13 of Ontario Regulation 170/03 requires that the owner of a drinking water system and the operating authority for the system shall ensure that at least one water sample is taken every 60 months and tested for sodium.

Section 6-1.1 (7) of Schedule 6 of Ontario Regulation 170/03 states that if this Regulation requires at least one water sample to be taken every 60 months and tested for a parameter, the owner of the drinking water system and the operating authority for the system shall ensure that at least one sample that is taken during a 60-month period for the purpose of being tested for that parameter is taken not more than 90 days before or after the fifth anniversary of the day a sample was taken for that purpose in the previous 60-month period.

The most recent treated water sample tested for sodium prior to the inspection was collected on August 25, 2015 from the Park Lane treated water sample point. A resample was collected and tested for sodium on September 2, 2015.

Since the inspection a treated water sample was collected on August 12, 2020 and had a sodium result of 60.9 mg/L. The sodium result was reported as required by Schedule 16 of Ontario Regulation 170/03 and the required corrective actions taken.

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

Section 13-9 of Schedule 13 of Ontario Regulation 170/03 requires that if a drinking water system does not provide fluoridation, the owner of the system and the operating authority for the system shall ensure that a water sample is taken at least once every 60 months and tested for fluoride.

Section 6-1.1 (7) of Schedule 6 of Ontario Regulation 170/03 states that if this Regulation requires at least one water sample to be taken every 60 months and tested for a parameter, the owner of the drinking water system and the operating authority for the system shall ensure that at least one sample that is taken during a 60-month period for the purpose of being tested for that parameter is taken not more than 90 days before or after the fifth anniversary of the day a sample was taken for that purpose in the previous 60-month period.

A treated water sample was collected on August 15, 2017 from Park Lane and tested for fluoride. Prior to that a fluoride sample was collected on August 22, 2012.

Water Quality Monitoring

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

Condition 4.2 of Schedule C of Municipal Drinking Water Licence 147-102 Issue Number 2 states that for each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.

Table 7 of Schedule C of Municipal Drinking Water Licence 147-102 Issue Number 2 requires that the backwash waste holding tank supernatant be tested for total suspended solids in a manual composite sample quarterly at the point of discharge.

There is a 13,500 L precast concrete tank with float controls and 0.25 HP effluent pump set at 0.3 metres above the tank bottom located to the south of the pumphouse where backwash water is directed. Backwash water is held for 12 hours to allow time for the solids to settle. The effluent is pumped through four metres of 100 mm diameter pipe to the ditch in front of the pumphouse. Solids are removed from the tank as required by vac truck.

During the inspection review period a backwash sample was collected in May 2019, August 2019, November 2019, February 2020 and May 2020 as required.

The samples submitted are reportedly composite samples. The Park Lane Operations Manual states that wastewater samples must be composite samples and consist of the mean of three samples taken during discharge, one at the commencement, one at the mid-point and one immediately before the discharge ceases.

Table 6 of Schedule C of Municipal Drinking Water Licence 147-102 Issue Number 2 states that the annual average concentration of total suspended solids from the backwash waste holding tank supernatant is to be no more than 15 mg/L.

The average concentration of suspended solids in backwash samples collected during the inspection review period was approximately 6 mg/L. Two of the sample results were below the method detection limit. The method detection limit of 2 mg/L was used in calculating the average.

Condition 4.4 of Schedule C of Municipal Drinking Water Licence 147-102 Issue Number 2 requires that any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication "Standard Methods for the Examination of Water and Wastewater", 21st Edition, 2005, or as amended from time to time by more recently published editions.

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

Section 6-3 of Schedule 6 of Ontario Regulation 170/03 requires that if this Regulation requires a water sample to be taken and tested for a microbiological parameter, the owner of the drinking water system and the operating authority for the system shall ensure that another sample is taken at the same time from the same location and is tested immediately for free chlorine residual, if the system provides chlorination and does not provide chloramination.

During the inspection review period records indicate that free chlorine residuals were measured at the same time and from the same location that all distribution and treated water microbiological samples were collected as required.

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).**

All treated water and distribution microbiological samples and results of Schedule 23 and Schedule 24 parameters collected during the inspection review period and the most recent result for fluoride met the Ontario Drinking Water Quality Standards.

Reporting & Corrective Actions

Reporting & Corrective Actions

- **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.**

During the inspection review period Operators responded to four low chlorine alarms. One of the low chlorine alarms was able to be dealt with remotely. One low reservoir alarm, one high turbidity alarm, one computer issue response and one response for a broken curb stop were also undertaken. Primary disinfection was achieved during each occurrence.

Operators regularly test the alarm functions to ensure they are working properly.

Other Inspection Findings

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

The Owner is in the process of switching the Operating Authority for the Township of Ramara to the Ontario Clean Water Agency (OCWA).

Since the inspection the date has been set for September 1, 2020 for OCWA to take over as the Operating Authority.

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.

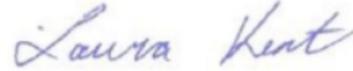
Not Applicable

SIGNATURES

Inspected By:

Laura Kent

Signature: (Provincial Officer)



Reviewed & Approved By:

Sheri Broeckel

Signature: (Supervisor)



Review & Approval Date:

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: PARK LANE SUBDIVISION DRINKING WATER SYSTEM
DWS Number: 220007132
DWS Owner: Ramara, The Corporation Of The Township Of
Municipal Location: Ramara

Regulation: O.REG 170/03
Category: Small Municipal Residential System
Type Of Inspection: Focused
Inspection Date: July 14, 2020
Ministry Office: Barrie District

Maximum Question Rating: 433

Inspection Module	Non-Compliance Rating
Source	0 / 14
Capacity Assessment	0 / 30
Treatment Processes	0 / 81
Operations Manuals	0 / 28
Logbooks	0 / 14
Certification and Training	0 / 42
Water Quality Monitoring	0 / 91
Reporting & Corrective Actions	0 / 21
Treatment Process Monitoring	0 / 112
TOTAL	0 / 433

Inspection Risk Rating	0.00%
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FINAL INSPECTION RATING:	100.00%
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Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2020-2021)

DWS Name: PARK LANE SUBDIVISION DRINKING WATER SYSTEM
DWS Number: 220007132
DWS Owner: Ramara, The Corporation Of The Township Of
Municipal Location: Ramara

Regulation: O.REG 170/03
Category: Small Municipal Residential System
Type Of Inspection: Focused
Inspection Date: July 14, 2020
Ministry Office: Barrie District

Maximum Question Rating: 433

Inspection Risk Rating | 0.00%

FINAL INSPECTION RATING: | 100.00%