

**Ministry of the Environment,
Conservation and Parks**

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

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January 10th, 2022

Belinda Ketchabaw
CAO/ Clerk/ Treasure
The Corporation of the Township of Nairn and Hyman
64 McIntyre Street
Nairn Centre ON
P0M 2L0

Dear Mrs., Ketchaba:

Re: 2020- 2021 Inspection Report for the Nairn Centre Drinking Water System

Please find attached the Nairn Centre Drinking Water 2021 inspection report.

The components of the system that were reviewed at the time of the inspection, and the documentation provided were found to be in proper order.

Please note that the Inspection Rating Record (IRR) for the Nairn Centre Drinking Water System is not included as part of the new format but will be provided at a later date; No issues were identified.

Also please note that 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. As such, the Ministry has encouraged such individuals, particularly municipal councillors, to take steps to be better informed about the drinking water system 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.

A copy of this inspection report has been provided to the Public Health Sudbury and District, as per the Ministry's Drinking Water Inspection Protocol.

I would like to thank the Ontario Clean Water Agency for their cooperation during the inspection, as it was much appreciated.

Should you have any questions regarding the attached document, please feel free to call me.

Thank you.

Parise Drolet

Water Inspector Ministry of the Environment, Conservation and Parks Drinking Water and Environmental Compliance Division

Sudbury District Office

(705) 618-1262 parise.drolet@ontario.ca

Cc: Keith Stringer Manager OCWA
Burgess Hawkins, Public Health Sudbury and District



NAIRN CENTRE DRINKING WATER SYSTEM
26 FERRY ST, NAIRN AND HYMAN, ON,

Inspection Report

System Number:	210002138
Inspection Start Date:	10/27/2021
Inspection End Date:	01/10/2022
Inspected By:	Parise Drolet
Badge #:	1312

Paule Drolet

(signature)

NON-COMPLIANCE/NON-CONFORMANCE ITEMS

The following item(s) have been identified as non-compliance/non-conformance, based on a "No" response captured for a legislative or best management practice (BMP) question (s), respectively.

Question Group: Certification and Training

Question ID	MRDW1075000	
Question	Question Type	Legislative Requirement
Do all operators possess the required certification?	Legislative	SDWA O. Reg. 128/04 22
Observation/Corrective Action(s)		
<p>All operators did not possess the required certification.</p> <p>P.Drolet (DWI) notes; An operator attended the site and acted as an Operator in Training (OIT) on July 21, 2021 but did not have the required licence.</p> <p>The Operating Authority notified the MECP of this situation on September 10, 2021. The operator's OIT licence expired on May 31, 2021 and was not renewed until August 11, 2021.</p>		

Question ID	MRDW1076000	
Question	Question Type	Legislative Requirement
Do only certified operators make adjustments to the treatment equipment?	Legislative	SDWA O. Reg. 170/03 1-2 (2)
Observation/Corrective Action(s)		
<p>Adjustments to the treatment equipment were not made only by certified operators.</p> <p>P.Drolet (DWI) notes; An operator attended the site and acted as an Operator in Training (OIT) on July 21, 2021 but did not have the required licence.</p> <p>The Operating Authority notified the MECP of this situation on September 10, 2021. The operators OIT licence expired on May 31, 2021 and was not renewed until August 11, 2021. Being that the operator normally held an OIT licence, they did not perform any process changes without the supervision of the attending OIC.</p> <p>The application for the renewal was submitted to the Ontario Water Wastewater Certification Office (OWWCO) on June 15, 2021 and on June 23, 2021 the operator was informed that the application was incomplete. Another completed application was then resubmitted to the OWWCO.</p> <p>OCWA indicated that new procedures are in place and training and licencing will be a regular topic at all cluster meetings. Training reports are being prepared and presented quarterly to management detailing staffs current licencing and training needs. In addition OCWA has begun providing monthly updates to Management and Compliance based on OWWCO's valid licenced operator reports. Furthermore, management will take a more direct approach when dealing with operators who have let their licence lapse. Direction will be given to staff detailing their responsibilities while on operator awaits renewal of their licence.</p>		

INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

Ministry Program: Regulated Activity: DRINKING WATER : DW Municipal Residential

Question ID	MRDW1001000	
Question	Question Type	Legislative Requirement
What was the scope of this inspection?	Information	Not Applicable
Observation		
<p>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 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.</p> <p>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.</p> <p>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.</p> <p>The Ministry of the Environment, Conservation and Parks (MECP) Drinking Water Inspector Parise Drolet (P.Drolet (DWI)) conducted an inspection of the Nairn Centre Drinking Water System (DWS) on Thursday October 28, 2021. The review and inspection of the Water Treatment Plant (WTP) and the associated Distribution System was conducted with the assistance of Bill Hansson, Overall Responsible Operator (ORO) for the DWS and Sarah Beaulieu, Process and Compliance Technician, Ontario Clean Water Agency (OCWA).</p> <p>The inspection included a tour and physical review of the components of the drinking water system and a review of the system documents from November 1, 2020 to October 31, 2021.</p>		

Question ID	MRDW1000000	
Question	Question Type	Legislative Requirement
Does this drinking water system provide primary disinfection?	Information	Not Applicable
Observation		
This Drinking Water System provides for both primary and secondary disinfection and distribution of water.		

Question ID	MRDW1011000	
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Question	Question Type	Legislative Requirement
Does the owner have a harmful algal bloom monitoring plan in place?	BMP	Not Applicable
Observation		
The owner had a harmful algal bloom monitoring plan in place.		

Question ID	MRDW1012000		
Question	Question Type	Legislative Requirement	
Does the owner have a harmful algal bloom monitoring plan in place that meets the requirements of the MDWL?	Legislative	SDWA 31 (1)	
Observation			
The owner had a harmful algal bloom monitoring plan in place.			
P.Drolet (DWI) notes; As of October 29th, 2020 OCWA has an SOP titled Monitoring for Harmful Algae Bloom (Nairn Centre) and another one title Operations During a Harmful Algae Bloom (Nairn Centre). The SOPs meet all the requirements listed in Schedule C Condition 6 of the Municipal Drinking Water Licence 281-101.			

Question ID	MRDW1014000		
Question	Question Type	Legislative Requirement	
Is there sufficient monitoring of flow as required by the MDWL or DWWP issued under Part V of the SDWA?	Legislative	SDWA 31 (1)	
Observation			
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.			
P.Drolet (DWI) notes; Schedule C Condition 2.1 of the Municipal Drinking Water Licence #281-101 for Nairn Centre Drinking Water System (DWS) requires a sufficient number of flow measuring devices throughout the system to ensure continuous monitoring and recording of flow rates and daily volumes of water transported through the treatment and distribution system. In addition, Condition 3.0 of the Licence requires that all flow measuring devices be checked and calibrated in accordance with the manufacturers instruction, or least once per year during which the drinking water system is in operation.			
Flow measuring devices are in place to monitor the raw and treated flows.			
A review of raw water flow data was undertaken for the inspection period. The data demonstrated that the water was taken at a rate well below the allowed water taking stated in the Permit to Take Water (PTTW) # 6410-BAPR97 of 820.8 m3/day.			
The maximum taking during the inspection period was 472.60 m3/day recorded on June 7 ,2021.			
Records indicated that raw and treated flow meter were last calibrated on June 2, 2021.			
Calibrations of all flow measuring devices are performed annually.			

Question ID	MRDW1016000	
Question	Question Type	Legislative Requirement
Is the owner in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the MDWL issued under Part V of the SDWA?	Legislative	SDWA 31 (1)
Observation		
<p>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.</p> <p>P.Drolet (DWI) notes; The rated capacity of this DWS as outlined in Schedule C Condition 1.1 of the Municipal Drinking Water Licence #281-101 is 818 m3/day. A review of the data indicates that there were no exceedances during the current inspection review period.</p> <p>The maximum daily treated flow during the inspection period was 320.8 m3/day recorded on June 4, 2021.</p>		

Question ID	MRDW1030000	
Question	Question Type	Legislative Requirement
Is primary disinfection chlorine monitoring being conducted at a location approved by MDWL and/or DWWP issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved?	Legislative	SDWA O. Reg. 170/03 7-2 (1), SDWA O. Reg. 170/03 7-2 (2)
Observation		
<p>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.</p> <p>P.Drolet (DWI) notes; Primary disinfection chlorine residual is monitored at or near the location where the intended CT had just been achieved, and Operators are fully aware of the operational criteria necessary to achieve primary disinfection. The facility now uses an "automatic CT calculator" to ensure that adequate CT is maintained at all times, and plant CT can now be tracked via the plant's SCADA system.</p> <p>If SCADA fails, the CT calculation can be found in the (CT Requirement for Nairn WTP) SOP that is located at the plant.</p> <p>Process data and supporting documentation provided during this review period indicates that the Nairn Centre Water Treatment Plant is operating in accordance with the above noted requirements. No concerns were identified.</p>		

Question ID	MRDW1032000	
Question	Question Type	Legislative Requirement
If the drinking water system obtains water from a surface water source and provides filtration, is continuous	Legislative	SDWA O. Reg. 170/03 7-3 (2)

monitoring of each filter effluent line being performed for turbidity?		
Observation		
Continuous monitoring of each filter effluent line was being performed for turbidity.		
P. Drolet (DWI) notes; Filter effluent turbidity is monitored on-line via a continuous turbidity analyzer. Filter Effluent turbidity data was reviewed for the period of November 1, 2020 to October 31, 2021, and found to be in order, confirming that the process consistently met the performance criteria for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month. No concerns were identified in this regard.		

Question ID	MRDW1033000	
Question	Question Type	Legislative Requirement
Is the secondary disinfectant residual measured as required for the large municipal residential distribution system?	Legislative	SDWA O. Reg. 170/03 7-2 (3), SDWA O. Reg. 170/03 7-2 (4)
Observation		
The secondary disinfectant residual was measured as required for the distribution system.		
P.Drolet (DWI) notes; A review of the Distribution System Logbook determined that all pertinent information is included; i.e. date/time/location/free chlorine value/operator initials. The required number of samples were collected.		

Question ID	MRDW1037000	
Question	Question Type	Legislative Requirement
Are all continuous monitoring equipment utilized for sampling and testing required by O. Reg.170/03, or MDWL or DWWP or order, equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6?	Legislative	SDWA O. Reg. 170/03 6-5 (1) 1-4,SDWA O. Reg. 170/03 6-5 (1)5-10,SDWA O. Reg. 170/03 6-5 (1.1)
Observation		
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.		

Question ID	MRDW1038000	
Question	Question Type	Legislative Requirement
Is continuous monitoring equipment that is being utilized to	Legislative	SDWA O. Reg.

fulfill O. Reg. 170/03 requirements 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?		170/03 6-5 (1) 1-4
Observation		
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.		

Question ID	MRDW1035000	
Question	Question Type	Legislative Requirement
Are operators examining continuous monitoring test results and are they examining the results within 72 hours of the test?	Legislative	SDWA O. Reg. 170/03 6-5 (1) 1-4,SDWA O. Reg. 170/03 6-5 (1)5-10
Observation		
Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.		
P.Drolet (DWI) notes; A review of the log book for this inspection period indicates that operators are examining continuous monitoring results as required.		

Question ID	MRDW1040000	
Question	Question Type	Legislative Requirement
Are all continuous analysers calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation?	Legislative	SDWA O. Reg. 170/03 6-5 (1) 1-4,SDWA O. Reg. 170/03 6-5 (1)5-10
Observation		
All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.		
P.Drolet (DWI) notes; All flow meters and continuous analyzers, are calibrated, maintained, and operated in accordance with the manufacturers instructions or the Regulation. Calibration Records and Work Order Summaries were provided in this regard. No concerns were identified.		

Question ID	MRDW1018000	
Question	Question Type	Legislative Requirement
Has the owner ensured that all equipment is installed in	Legislative	SDWA 31 (1)

accordance with Schedule A and Schedule C of the Drinking Water Works Permit?		
Observation		
<p>The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.</p> <p>P. Drolet (DWI) notes; The Nairn Centre Water Treatment Plant operates under "Municipal Drinking Water Licence Number 281-101" (Issue 3), dated August 11, 2020, and "Drinking Water Works Permit Number 281-201" (Issue 4), dated August 11, 2020.</p>		

Question ID	MRDW1023000	
Question	Question Type	Legislative Requirement
Do records indicate that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a DWWP and/or MDWL issued under Part V of the SDWA at all times that water was being supplied to consumers?	Legislative	SDWA O. Reg. 170/03 1-2 (2)
Observation		
<p>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.</p> <p>P. Drolet (DWI) notes; The Procedure for Disinfection of Drinking Water in Ontario states that a drinking water system that obtains water from a surface water supply must provide treatment that includes chemically assisted filtration (or equivalent) and chemical disinfection. The treatment must provide a minimum log removal/inactivation of cryptosporidium, giardia and viruses, as specified in the Disinfection Procedure.</p> <p>The Nairn Centre Water Treatment Plant uses a process that includes conventional filtration followed by chemical disinfection by chlorination to achieve required log removal credits. The following table summarizes credits assigned to each stage for the treatment process, based on information from the Disinfection Procedure and the information provided by the Engineer's Report:</p>		
LOG REMOVAL CREDITS		
EQUIPMENT	CRYPTO	GIARDIA VIRUSES
Conventional Filtration	2	2.5 2
Chlorination	0	0.5 2
Design Totals	2	3 4
Required Removal/Inactivation	2	3 4
CONVENTIONAL FILTRATION		

In order to apply the above noted log removal credits for the filtration portion of treatment, the following criteria must be met:

- A chemical coagulant shall be used at all times when the treatment plant is in operation;
- Chemical dosages shall be monitored and adjusted in response to variations in raw water quality;
- 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;
- Filtrate turbidity shall be continuously monitored from each filter; and
- Performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each shall be met for each filter.

Process data and supporting documentation provided during this review period indicates that the Nairn Centre Water Treatment Plant is operating in accordance with these requirements.

Filter Efficiency Turbidity data provided during this review period was reviewed and found to be in order, meeting the performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month.

Question ID	MRDW1024000	
Question	Question Type	Legislative Requirement
Do records confirm 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?	Legislative	SDWA O. Reg. 170/03 1-2 (2)
Observation		
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.		
P.Drolet (DWI) notes; Free Chlorine residuals in the Nairn Centre distribution system are measured by grab samples collected in conjunction with weekly bacteriological sampling at the Town Office, Restaurant, Truck Stop and T.Bell at least twice a week. Records reviewed confirm that the distribution residuals were not less than 0.05mg/L during the inspection review period.		

Question ID	MRDW1025000	
Question	Question Type	Legislative Requirement
Were all parts of the drinking water system that came in contact with drinking water (added, modified, replaced or extended) disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit?	Legislative	SDWA 31 (1)
Observation		
All parts of the drinking water system were disinfected in accordance with a procedure listed in		

Schedule B of the Drinking Water Works Permit.

Question ID	MRDW1026000	
Question	Question Type	Legislative Requirement
If primary disinfection equipment that does not use chlorination or chloramination is provided, is the equipment equipped with alarms or shut-off mechanisms that satisfy the standards described in Section 1-6 (1) of Schedule 1 of Ontario Regulation 170/03?	Legislative	SDWA O. Reg. 170/03 1-6 (1)
Observation		
The primary disinfection equipment was equipped with alarms or shut-off mechanisms that satisfied the standards described in Section 1-6 (1) of Schedule 1 of Ontario Regulation 170/03.		

Question ID	MRDW1060000	
Question	Question Type	Legislative Requirement
Do the operations and maintenance manuals meet the requirements of the DWWP and MDWL issued under Part V of the SDWA?	Legislative	SDWA 31 (1)
Observation		
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.		
P.Drolet (DWI) notes; The Operations and Maintenance Manual for the Nairn Centre Water Treatment Plant was reviewed at the time of inspection and found to be in order, containing plans, drawings, and process descriptions sufficient for the safe and efficient operation of the system. The manual is kept at the plant.		

Question ID	MRDW1071000	
Question	Question Type	Legislative Requirement
Has the owner provided security measures to protect components of the drinking water system?	BMP	Not Applicable
Observation		
The owner had provided security measures to protect components of the drinking water system.		
P.Drolet (DWI) notes; All major components of the drinking water system were found to be completely covered and secure, and under lock and key at all times.		
There are no exterior storage facilities (reservoirs or standpipes) for this drinking water system. The only storage is in the clearwells which are located within the Water Treatment Plant building itself. The Water Treatment Plant building was found to be covered and secure, and under lock and key at all times. No concerns were identified in this regard.		

The raw water low lift pumps however, are housed in a separate concrete pumping station located near the water intake at the Spanish River's edge. And although the pumping station is a concrete structure that is covered and secure, and under lock and key, the station is located adjacent to a public boat launch, and there is no signage or security fencing.

As such, as noted in previous inspection reports, security fencing and proper signage is a measure that should be considered to properly protect this component of the system.

Question ID	MRDW1073000	
Question	Question Type	Legislative Requirement
Has the overall responsible operator been designated for all subsystems which comprise the drinking water system?	Legislative	SDWA O. Reg. 128/04 23 (1)
Observation		
<p>The overall responsible operator has been designated for each subsystem.</p> <p>P.Drolet (DWI) notes; There are a few operators that are appropriately licenced to act as the overall responsible operator (ORO) for the Nairn Centre DWS (Class 3 Water Treatment Subsystem, Class 1 Water Distribution Subsystem.) The ORO is identified in the logbook daily and no concerns were identified.</p> <p>The Nairn Centre Water Treatment Plant is a Class 3 facility, operating under Classification Certificate No. 2810, issued October 27, 2005.</p> <p>The Nairn Centre Distribution System is a Class 1 system, operating under Certificate No. 3400, issued July 13, 2005.</p>		

Question ID	MRDW1074000	
Question	Question Type	Legislative Requirement
Have operators in charge been designated for all subsystems for which comprise the drinking water system?	Legislative	SDWA O. Reg. 128/04 25 (1)
Observation		
<p>Operators-in-charge had been designated for all subsystems which comprised the drinking water system.</p> <p>P.Drolet (DWI) notes; The Operator in Charge (OIC) is identified in the logbook daily and is normally the operator on-site undertaking the necessary operational duties.</p>		

Question ID	MRDW1075000	
Question	Question Type	Legislative Requirement
Do all operators possess the required certification?	Legislative	SDWA O. Reg. 128/04 22
Observation		

All operators did not possess the required certification.

P.Drolet (DWI) notes; An operator attended the site and acted as an Operator in Training (OIT) on July 21, 2021 but did not have the required licence.

The Operating Authority notified the MECP of this situation on September 10, 2021. The operator's OIT licence expired on May 31, 2021 and was not renewed until August 11, 2021.

Question ID	MRDW1076000	
Question	Question Type	Legislative Requirement
Do only certified operators make adjustments to the treatment equipment?	Legislative	SDWA O. Reg. 170/03 1-2 (2)
Observation		
Adjustments to the treatment equipment were not made only by certified operators.		
<p>P.Drolet (DWI) notes; An operator attended the site and acted as an Operator in Training (OIT) on July 21, 2021 but did not have the required licence.</p> <p>The Operating Authority notified the MECP of this situation on September 10, 2021. The operators OIT licence expired on May 31, 2021 and was not renewed until August 11, 2021. Being that the operator normally held an OIT licence, they did not perform any process changes without the supervision of the attending OIC.</p> <p>The application for the renewal was submitted to the Ontario Water Wastewater Certification Office (OWWCO) on June 15, 2021 and on June 23, 2021 the operator was informed that the application was incomplete. Another completed application was then resubmitted to the OWWCO.</p> <p>OCWA indicated that new procedures are in place and training and licencing will be a regular topic at all cluster meetings. Training reports are being prepared and presented quarterly to management detailing staffs current licencing and training needs. In addition OCWA has begun providing monthly updates to Management and Compliance based on OWWCO's valid licenced operator reports. Furthermore, management will take a more direct approach when dealing with operators who have let their licence lapse. Direction will be given to staff detailing their responsibilities while on operator awaits renewal of their licence.</p>		

Question ID	MRDW1099000	
Question	Question Type	Legislative Requirement
Do records show 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)?	Information	Not Applicable
Observation		
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).		

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Question ID	MRDW1094000	
Question	Question Type	Legislative Requirement
Are all water quality monitoring requirements imposed by the MDWL and DWWP being met?	Legislative	SDWA 31 (1)
Observation		
All water quality monitoring requirements imposed by the MDWL or DWWP issued under Part V of the SDWA were being met.		
<p>P.Drolet (DWI) notes; The "Municipal Drinking Water Licence 281-101" (Issue 3), dated August 11, 2020 requires in Schedule C Condition 5 that the process wastewater effluent discharge be sampled and analyzed on a monthly basis for Total Suspended Solids, and that the average annual concentration of suspended solids in the effluent discharge not exceed 25 mg/L.</p> <p>Samples were collected on;</p> <p>November 26, 2020 - 2 mg/L December 21, 2020 - 2 mg/L January 25, 2021 - 2 mg/L February 22, 2021 - 14 mg/L March 29, 2021 - 4 mg/L April 26, 2021 - 2 mg/L May 25, 2021 - 2 mg/L June 28, 2021 - 2 mg/L July 26, 2021 - 5 mg/L August 23, 2021 - 2 mg/L September 27, 2021 - 2 mg/L October 25, 2020 - 101 mg/L.</p>		

Question ID	MRDW1096000	
Question	Question Type	Legislative Requirement
Do records confirm that chlorine residual tests are being conducted at the same time and at the same location that microbiological samples are obtained?	Legislative	SDWA O. Reg. 170/03 6-3 (1)
Observation		
Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.		
<p>P.Drolet (DWI) notes; The chain of custody and logbook records confirmed that the chlorine residual test are conducted at the same time and at the same location that microbiological samples are obtained.</p>		

Question ID	MRDW1082000	
Question	Question	Legislative

	Type	Requirement
Are all microbiological water quality monitoring requirements for distribution samples prescribed by legislation being met?	Legislative	SDWA O. Reg. 170/03 11-2 (1),SDWA O. Reg. 170/03 11-2 (2),SDWA O. Reg. 170/03 11-2 (6)
Observation		
All microbiological water quality monitoring requirements for distribution samples prescribed by legislation were being met.		

Question ID	MRDW1083000		
Question	Question Type	Legislative Requirement	
Are all microbiological water quality monitoring requirements for treated samples being met?	Legislative	SDWA O. Reg. 170/03 10-3	
Observation			
All microbiological water quality monitoring requirements for treated samples were being met.			
P. Drolet (DWI) notes; Section 10-3 of Schedule 10 of O.Reg 170/03 states that at least one treated water sample shall be collected every week and tested for E.coli , total coliform and HPC. A review of the certificate of analyses for this inspection period confirmed that distribution samples were taken every week and tested for E.coli, total coliforms and HPC			

Question ID	MRDW1084000		
Question	Question Type	Legislative Requirement	
Are all inorganic water quality monitoring requirements prescribed by legislation conducted within the required frequency?	Legislative	SDWA O. Reg. 170/03 13-2	
Observation			
All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.			
P.Drolet (DWI) notes; The requirement is to sample and analyze for the inorganic parameters specified in Schedule 23 of O. Reg 170/03 every 12 months (12 months is defined by Schedule 6 of the regulation). Sampling for these parameters was completed on January 14, 2020 and again on January 15, 2021. All results were within the limits defined by the Ontario Drinking Water Quality Standards (ODWQS). No concerns were identified.			

Question ID	MRDW1085000		
Question	Question	Legislative	

	Type	Requirement
Are all organic water quality monitoring requirements prescribed by legislation conducted within the required frequency?	Legislative	SDWA O. Reg. 170/03 13-4 (1),SDWA O. Reg. 170/03 13-4 (2),SDWA O. Reg. 170/03 13-4 (3)
Observation		
<p>All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.</p> <p>P.Drolet (DWI) notes; The requirement is to sample and analyze for the organic parameters specified in Schedule 24 of O. Reg. 170/03 every 12 months. Sampling for these parameters was completed on January 14, 2020 and on January 15, 2021. All results were within the limits defined by the Ontario Drinking Water Quality Standards. (ODWQS). No concerns were identified.</p>		

Question ID	MRDW1086000	
Question	Question Type	Legislative Requirement
Are all haloacetic acid water quality monitoring requirements prescribed by legislation conducted within the required frequency and at the required location?	Legislative	SDWA O. Reg. 170/03 13-6.1 (1),SDWA O. Reg. 170/03 13-6.1 (2),SDWA O. Reg. 170/03 13-6.1 (3), SDWA O. Reg. 170/03 13-6.1 (4),SDWA O. Reg. 170/03 13-6.1 (5),SDWA O. Reg. 170/03 13-6.1 (6)
Observation		
<p>All haloacetic acid water quality monitoring requirements prescribed by legislation are being conducted within the required frequency and at the required location.</p> <p>P.Drolet (DWI) notes; Schedule 13-6.1 (1) of O.Reg. 170/03 requires at least one distribution sample to be collected every three months and tested for haloacetic acids (HAA).</p> <p>In 2020 samples were collected on; January 14 (34.2 ug/L) April 4 (43.6 ug/L) June 29 (48.6 ug/L) - this sample date was addressed in the previous report.</p>		

September 23 (68.2 ug/L)
December 11 (87 ug/L)

In 2021 samples were collected on;
February 8 (75 ug/L)
April 12 (37.3 ug/L)
July 5 (45.9 ug/L)
October 4 (60 ug/L)

At the time of the inspection the Running Annual Average was 54.5 ug/L which is below the 80 ug/L.

The O.Reg. 170/03 defines the "calendar quarter" to mean, in relation to a year, the three-month period that begins on January 1, April 1, July 1 or October 1:

Quarter Date Range
(1st) January 1st to March 31st
(2nd) April 1st to June 30th
(3rd) July 1st to September 30th
(4th) October 1st to December 31st.

A review of water quality data for this period in question confirmed that HAAs samples were collected in accordance with the monitoring requirements prescribed by legislation.

Question ID	MRDW1087000	
Question	Question Type	Legislative Requirement
Have all trihalomethane water quality monitoring requirements prescribed by legislation been conducted within the required frequency and at the required location?	Legislative	SDWA O. Reg. 170/03 13-6 (1)
Observation		
All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.		
P.Drolet (DWI) notes; Section 13-6 of Schedule 13 of O.Reg 170/03 requires at least one distribution sample to be collected every three months and tested for trihalomethanes (THMs).		
In 2020 samples were collected on; January 14 (44 ug/L) April 4 (40 ug/L) June 29 (73 ug/L) - this sample date was addressed in te previous report September 23 (83 ug/L) December 11 (56 ug/L)		
In 2021 samples were collected on; February 8 (74 ug/L) April 12 (45 ug/L) July 5 (46 ug/L) October 4 (112 ug/L)		

At the time of the inspection the running average was 69.25 ug/L which is below the Ontario Drinking Water Standard of 100 ug/L.

The O.Reg. 170/03 defines the "calendar quarter" to mean, in relation to a year, the three-month period that begins on January 1, April 1, July 1 or October 1:

Quarter Date Range

(1st) January 1st to March 31st

(2nd) April 1st to June 30th

(3rd) July 1st to September 30th

(4th) October 1st to December 31st.

A review of water quality data for this period in question confirmed that THMs samples were collected in accordance with the monitoring requirements prescribed by legislation.

Question ID	MRDW1088000	
Question	Question Type	Legislative Requirement
Are all nitrate/nitrite water quality monitoring requirements prescribed by legislation conducted within the required frequency for the DWS?	Legislative	SDWA O. Reg. 170/03 13-7
Observation		
<p>All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.</p> <p>P.Drolet (DWI) notes; Section 13-7 of Schedule 13 of O.Reg 170/03 requires that at least one treated water sample is collected every three months (three months is defined by Schedule 6 of the regulation) and tested for nitrate and nitrite.</p> <p>In 2020 samples were collected on;</p> <p>January 14 (0.068 mg/L)</p> <p>April 4 (0.111 mg/L)</p> <p>June 29 (0.052 mg/L) - this sample date was addressed in the previous report</p> <p>September 23 (0.065mg/L)</p> <p>December 11 (0.057 mg/L)</p> <p>In 2021 samples were collected on;</p> <p>February 8 (0.077 mg/L)</p> <p>April 12 (0.113 mg/L)</p> <p>July 5 (0.086 mg/L)</p> <p>October 4 (0.079 mg/L)</p> <p>The O.Reg. 170/03 defines the "calendar quarter" to mean, in relation to a year, the three-month period that begins on January 1, April 1, July 1 or October 1:</p> <p>Quarter Date Range</p> <p>(1st) January 1st to March 31st</p> <p>(2nd) April 1st to June 30th</p> <p>(3rd) July 1st to September 30th</p> <p>(4th) October 1st to December 31st.</p> <p>A review of water quality data for this period in question confirmed that Nitrites/Nitrates samples</p>		

were collected in accordance with the monitoring requirements prescribed by legislation.

Question ID	MRDW1089000	
Question	Question Type	Legislative Requirement
Are all sodium water quality monitoring requirements prescribed by legislation conducted within the required frequency?	Legislative	SDWA O. Reg. 170/03 13-8
Observation		
<p>All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.</p> <p>P.Drolet (DWI) notes; Section 13-8 of Schedule 13 of O. Reg 170/03 states that at least one treated sample must be collected every 60 months and tested for sodium. A sample for sodium analysis collected on January 26, 2017 had a result of 10.4 mg/L; required again in 2022.</p>		

Question ID	MRDW1090000	
Question	Question Type	Legislative Requirement
Where fluoridation is not practiced, are all fluoride water quality monitoring requirements prescribed by legislation conducted within the required frequency?	Legislative	SDWA O. Reg. 170/03 13-9
Observation		
<p>All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.</p> <p>P.Drolet (DWI) notes; Schedule 13-9 of the O.Reg. 170/03 requires that a least one sample be taken every sixty (60) months and tested for fluoride. Treated water samples were collected from the facility and submitted to an accredited laboratory for analysis of fluoride on January 26, 2017 (0.06 mg/L).; required again in 2022.</p> <p>On September 26, 2016, Formal Notice was received from the Ministry's Approvals and Licensing Section, advising that "Drinking Water Works Permit Number 281-20" (Issue Number 3), dated September 6, 2016, had been issued, and that Section 1.1, Schedule A, of the Drinking Water Works Permit, had been amended to remove all references to the requirement for fluoridation. As such, the Municipality now had formal approval to discontinue the fluoridation process.</p> <p>On September 28, 2016, Formal Notification was received from OCWA advising that effective immediately, fluoridation of the drinking water would no longer be implemented at the Nairn Centre Water Treatment Plant. No further action was required in this regard.</p>		

Question ID	MRDW1100000	
Question	Question	Legislative

	Type	Requirement
Did any reportable adverse/exceedance conditions occur during the inspection period?	Information	Not Applicable
Observation		
<p>There were reportable adverse/exceedances during the inspection period.</p> <p>AWQI 153229 On December 12, 2020 the ministry's Spills Action Center was notified by the Ontario Clean Water Agency (OCWA) that a total coliform result of 87 cfu was received on a treated water sample for the Nairn Centre municipal Drinking Water System. As a result, Public Health Sudbury and Districts (PHSD) issued a Boil Water Advisory (BWA) to the users of the system. The users of the system have been notified of the Boil Water Advisory through hand delivered notices and a media release by PHSD. The PHSD rescinded the BWA on December 15, 2020 after 2 sets of consecutive samples were negative for bacteriological contamination.</p> <p>AWQI 153491 On February 1, 2021, the ministry's Spills Action Center was notified by the Ontario Clean Water Agency (OCWA) that a total loss of pressure occurred in the distribution system after the power connection was lost to the plant during the monthly testing of the generator. It's undetermined how long the power failure lasted. As a result of the 0 pressure Public Health Sudbury and District (PHSD) issued a Drinking Water Advisory (DWA) to the users of the system. The users of the system have been notified of the (DWA) through hand delivered notices and a media release by PHSD. Once power was restored on February 1, 2021, the operator increased the chlorine and flushed the entire distribution system. February 1, 2021, first set of bacteriological samples were collected. February 2, 2021, second set of bacteriological samples were collected. Both samples were negative for bacteriological contamination. February 4, 2021 the PHSD rescinded the DWA.</p>		

Question ID	MRDW1101000	
Question	Question Type	Legislative Requirement
Have corrective actions (as per Schedule 17) been taken to address adverse conditions, including any other steps as directed by the Medical Officer of Health?	Legislative	SDWA O. Reg. 170/03 17-1, SDWA O. Reg. 170/03 17-10 (1),SDWA O. Reg. 170/03 17-10 (2),SDWA O. Reg. 170/03 17-11,SDWA O. Reg. 170/03 17-

		12,SDWA O. Reg. 170/03 17- 13,SDWA O. Reg. 170/03 17- 14,SDWA O. Reg. 170/03 17- 2,SDWA O. Reg. 170/03 17- 3,SDWA O. Reg. 170/03 17- 4,SDWA O. Reg. 170/03 17- 5,SDWA O. Reg. 170/03 17- 6,SDWA O. Reg. 170/03 17- 9
Observation		
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.		

Question ID	MRDW1104000	
Question	Question Type	Legislative Requirement
Were all required verbal notifications of adverse water quality incidents immediately provided as per O. Reg. 170/03 16-6?	Legislative	SDWA O. Reg. 170/03 16-6 (1),SDWA O. Reg. 170/03 16-6 (2),SDWA O. Reg. 170/03 16-6 (3),SDWA O. Reg. 170/03 16-6 (3.1),SDWA O. Reg. 170/03 16-6 (3.2),SDWA O. Reg. 170/03 16-6 (4),SDWA O. Reg. 170/03 16-6 (5),SDWA O. Reg. 170/03 16-6 (6)
Observation		
All required notifications of adverse water quality incidents were immediately provided as per O. Reg. 170/03 16-6.		

Question ID	MRDW1059000	
Question	Question Type	Legislative Requirement
Do the operations and maintenance manuals contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the system?	Legislative	SDWA O. Reg. 128/04 28
Observation		
The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.		
P.Drolet (DWI) notes; The Operations and Maintenance manual for the Nairn Centre Water Treatment Plant was reviewed at the time of inspection and found to be in order, containing plans, drawings, and process descriptions sufficient for the safe and efficient operation of the system. The manual is kept at the plant.		

Question ID	MRDW1061000	
Question	Question Type	Legislative Requirement
Are logbooks properly maintained and contain the required information?	Legislative	SDWA O. Reg. 128/04 27 (1), SDWA O. Reg. 128/04 27 (2), SDWA O. Reg. 128/04 27 (3), SDWA O. Reg. 128/04 27 (4), SDWA O. Reg. 128/04 27 (5), SDWA O. Reg. 128/04 27 (6), SDWA O. Reg. 128/04 27 (7)
Observation		
Logbooks were properly maintained and contained the required information.		

Question ID	MRDW1103000	
Question	Question Type	Legislative Requirement
Have corrective actions as directed by the Medical Officer of Health been taken by the owner and operating authority to address exceedances of the lead standard?	Legislative	SDWA O. Reg. 170/03 15.1-10
Observation		
Corrective actions as directed by the Medical Officer of Health had been taken by the owner and operating authority to address exceedances of the lead standard.		

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APPENDIX A

Drinking Water Components

Description

RAW WATER

The plant draws raw water from the Spanish River. Logging operations, landfilling and mining operations are all located within the overall watershed and may impact the raw water quality. Locally, residential septic beds and recreational boating may also impact raw water quality. Both the public boat launch and the plant's field bed are located very close to the low lift pumping station on the shores of the Spanish River. A zebra mussel system is not currently in use, however a sodium hypochlorite 75 mm diameter pipe is in place should such a system be required in the future.

TREATMENT

The Nairn Centre Water Treatment Plant is a Class 3 System, operating under Certificate No. 2810, issued October 27, 2005. The plant was originally commissioned in 1995 and is currently operated by the Ontario Clean Water Agency (OCWA).

The raw water intake is in the Spanish River and is comprised of a polyethylene drum weighted down with rock ballast. The intake pipe is ~ 33 meters in length, and the raw water is gravity fed to a low lift pumping station, where two low lift pumps (alternating as duty and standby) are utilized to move water through a 150 mm supply line to the plant.

The package plant is designed to provide treatment elements in a compact setting, consisting of coagulation, flocculation, clarification and filtration through sand and anthracite dual media filters.

Liquid coagulant (PAC) and soda ash (pre-filtration) are injected upstream of the static mixer, with a liquid polymer injected just downstream. The three chemical additions are injected at manually set rates based on low lift pumping rates.

Soda ash (post-filtration) is also injected at the filter effluent line to control pH and provide corrosion control for the distribution system components.

Chlorination is by injection of Sodium Hypochlorite solution (stored in a 200L day tank), using two metering pumps (one duty, one standby). The chlorine is injected after the filters, upstream of the clear wells.

Filter backwash is gravity fed to a surge tank. Waste from this tank is pumped via two submersible pumps to a settling chamber. Supernatant, which is tested monthly for suspended solids, flows to a ditch and then to the Spanish River. Sludge from the settling tank is pumped as required via pumper truck and sent for proper disposal.

NOTE: It should be noted that Fluoride is no longer added to this Drinking Water System as part of the treatment process.

DISTRIBUTION

The Nairn Centre Distribution System is a Class 1 system, operating under Certificate No. 3400, issued July 13, 2005. The system is operated by the Ontario Clean Water Agency (OCWA).

The distribution system serves a population of ~470 residents including 150 service connections. The system includes 50 hydrants and approximately 5 kilometers of PVC pipes. There are 13 dead ends within the distribution system.

APPENDIX B

Drinking Water Works Licence 281-101

Drinking Water Works Permit 281-201



MUNICIPAL DRINKING WATER LICENCE

Licence Number: 281-101
Issue Number: 3

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this municipal drinking water licence under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

The Corporation of the Township of Nairn and Hyman

64 McIntyre Street
Nairn Centre ON P0M 2L0

For the following municipal residential drinking water system:

Nairn Centre Drinking Water System

This municipal drinking water licence includes the following:

Schedule	Description
Schedule A	Drinking Water System Information
Schedule B	General Conditions
Schedule C	System-Specific Conditions
Schedule D	Conditions for Relief from Regulatory Requirements
Schedule E	Pathogen Log Removal/Inactivation Credits

Upon the effective date of this drinking water licence # 281-101, all previously issued versions of licence # 281-101 are revoked and replaced by this licence.

DATED at TORONTO this 11th day of August, 2020

Signature

Aziz Ahmed, P.Eng.
Director
Part V, *Safe Drinking Water Act*, 2002

Schedule A: Drinking Water System Information

System Owner	The Corporation of the Township of Nairn and Hyman
Licence Number	281-101
Drinking Water System Name	Nairn Centre Drinking Water System
Licence Effective Date	August 11th, 2020

1.0 Licence Information

Licence Issue Date	2020-08-11
Licence Effective Date	2020-08-11
Licence Expiry Date	2025-08-10
Application for Licence Renewal Date	2025-02-08

2.0 Incorporated Documents

The following documents are applicable to the above drinking water system and form part of this licence:

2.1 Drinking Water Works Permit

Drinking Water System Name	Permit Number	Issue Date
Nairn Centre Drinking Water System	281-201	August 11, 2020

2.2 Permits to Take Water

Water Taking Location	Permit Number	Issue Date
Spanish River	6410-BAPR97	April 9, 2019

2.3 Other Documents

Document Title	Version Number	Version Date

3.0 Financial Plans

The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be:	281-301
Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be:	281-301A

4.0 Accredited Operating Authority

Drinking Water System or Operational Subsystems	Accredited Operating Authority	Operational Plan No.	Operating Authority No.
Nairn Centre Drinking Water System	Ontario Clean Water Agency	281-401	281-OA1

Schedule B: General Conditions

System Owner	The Corporation of the Township of Nairn and Hyman
Licence Number	281-101
Drinking Water System Name	Nairn Centre Drinking Water System
Licence Effective Date	August 11th, 2020

1.0 Definitions

1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

1.2 In this licence and the associated drinking water works permit:

“**adverse effect**”, “**contaminant**” and “**natural environment**” shall have the same meanings as in the EPA;

“**alteration**” may include the following in respect of this drinking water system:

- (a) An addition to the system,
- (b) A modification of the system,
- (c) A replacement of part of the system, and
- (d) An extension of the system;

“**compound of concern**” means a contaminant described in paragraph 4 subsection 26 (1) of O. Reg. 419/05, namely, a contaminant that is discharged to the air from a component of the drinking water system in an amount that is not negligible;

“**CT**” means the CT Disinfection Concept, as described in subsection 3.1.1 of the Ministry’s Procedure for Disinfection of Drinking Water in Ontario, dated July 29 2016.

“**Director**” means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

“**drinking water works permit**” means the drinking water works permit for the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“**emission summary table**” means a table described in paragraph 14 of subsection 26 (1) of O. Reg. 419/05;

“**EPA**” means the *Environmental Protection Act*, R.S.O. 1990, c. E.19;

“**financial plan**” means the financial plan required by O. Reg. 453/07;

“**Harmful Algal Bloom (HAB)**” means an overgrowth of aquatic algal bacteria that produce or have the potential to produce toxins in the surrounding water, when the algal

cells are damaged or die. Such bacteria are harmful to people and animals and include microcystins produced by cyanobacterial blooms.

“**licence**” means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

“**Ministry**” means the Ontario Ministry of the Environment, Conservation and Parks;

“**operational plan**” means an operational plan developed in accordance with the Director’s Directions – Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

“**owner**” means the owner of the drinking water system as identified in Schedule A of this licence;

“**OWRA**” means the *Ontario Water Resources Act*, R.S.O. 1990, c. 0.40;

“**permit to take water**” means the permit to take water that is associated with the taking of water for purposes of the operation of the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“**point of impingement**” has the same meaning as in section 2 of O. Reg. 419/05 under the EPA;

“**point of impingement limit**” means the appropriate standard from Schedule 2 or 3 of O. Reg. 419/05 under the EPA and if a standard is not provided for a compound of concern, the concentration set out for the compound of concern in the document titled “Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants”, as amended from time to time and published by the Ministry and available on a government of Ontario website;

“**licensed engineering practitioner**” means a person who holds a licence, limited licence or temporary licence under the Professional Engineers Act;

“**provincial officer**” means a provincial officer designated pursuant to section 8 of the SDWA;

“**publication NPC-300**” means the Ministry publication titled “Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning” dated August 2013, as amended;

“**SCADA system**” means a supervisory control and data acquisition system used for process monitoring, automation, recording and/or reporting within the drinking water system;

“**SDWA**” means the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32;

“**sensitive receptor**” means any location where routine or normal activities occurring at reasonably expected times would experience adverse effect(s) from a discharge to air from an emergency generator that is a component of the drinking water system, including one or a combination of:

- (a) private residences or public facilities where people sleep (e.g.: single and multi-unit dwellings, nursing homes, hospitals, trailer parks, camping grounds, etc.),
- (b) institutional facilities (e.g.: schools, churches, community centres, day care centres, recreational centres, etc.),
- (c) outdoor public recreational areas (e.g.: trailer parks, play grounds, picnic areas, etc.), and
- (d) other outdoor public areas where there are continuous human activities (e.g.: commercial plazas and office buildings).

“**sub-system**” has the same meaning as in Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts) under the SDWA;

“**surface water**” means water bodies (lakes, wetlands, ponds - including dug-outs), water courses (rivers, streams, water-filled drainage ditches), infiltration trenches, and areas of seasonal wetlands;

“**UV**” means ultraviolet, as in ultraviolet light produced from an ultraviolet reactor.

2.0 Applicability

- 2.1 In addition to any other applicable legal requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

3.0 Licence Expiry

- 3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

4.0 Licence Renewal

- 4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

5.0 Compliance

- 5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

6.0 Licence and Drinking Water Works Permit Availability

- 6.1** At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

7.0 Permit to Take Water and Drinking Water Works Permit

- 7.1** A permit to take water identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.
- 7.2** A drinking water works permit identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.

8.0 Financial Plan

- 8.1** For every financial plan prepared in accordance with subsections 2(1) and 3(1) of O. Reg. 453/07, the owner of the drinking water system shall:
- 8.1.1** Ensure that the financial plan contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence; and
- 8.1.2** Submit a copy of the financial plan to the Ministry of Municipal Affairs and Housing within three (3) months of receiving approval by a resolution of municipal council or the governing body of the owner.

9.0 Interpretation

- 9.1** Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:
- 9.1.1** The SDWA;
- 9.1.2** A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;
- 9.1.3** A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;
- 9.1.4** Any regulation made under the SDWA;
- 9.1.5** Any provision of this licence that does not explicitly override a prescribed regulatory requirement;
- 9.1.6** Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;
- 9.1.7** Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and

- 9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.
- 9.1.9 Any other technical bulletin or procedure issued by the Ministry from the most recent to the earliest.
- 9.2** If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.
- 9.3** The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:
- 9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the *Environmental Assessment Act*, R.S.O. 1990, c. E.18; and
- 9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.
- 9.4** For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

10.0 Adverse Effects

- 10.1** Nothing in this licence or the drinking water works permit shall be read as to permit:
- 10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or
- 10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.
- 10.2** All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
- 10.3** Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

11.0 Change of Owner or Operating Authority

- 11.1** This licence is not transferable without the prior written consent of the Director.
- 11.2** The owner shall notify the Director in writing at least 30 days prior to a change of any operating authority identified in Schedule A of this licence.
- 11.2.1 Where the change of operating authority is the result of an emergency situation, the owner shall notify the Director in writing of the change as soon as practicable.

12.0 Information to be Provided

- 12.1** Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request.

13.0 Records Retention

- 13.1** Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 or section 13 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

14.0 Chemicals and Materials

- 14.1** All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60, NSF/61 and NSF/372.
- 14.1.1 In the event that the standards are updated, the owner may request authorization from the Director to use any on hand chemicals and materials that previously met the applicable standards.
- 14.2** The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.
- 14.3** Conditions 14.1 and 14.2 do not apply in the case of the following:
- 14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);
- 14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;
- 14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;

- 14.3.4 Gaskets that are made from NSF approved materials;
- 14.3.5 Food grade oils and lubricants, food grade anti-freeze, and other food grade chemicals and materials that are compatible for drinking water use that may come into contact with drinking water, but are not added directly to the drinking water; or
- 14.3.6 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

15.0 Drawings

- 15.1 All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.
- 15.2 Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the alteration being completed or placed into service.
- 15.3 Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

16.0 Operations and Maintenance Manual

- 16.1 An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference to all persons responsible for all or part of the operation or maintenance of the drinking water system.
- 16.2 The operations and maintenance manual or manuals, shall include at a minimum:
 - 16.2.1 The requirements of this licence and associated procedures;
 - 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 other operating conditions, if applicable; 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;
- 16.3** Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.
 - 16.4** All of the procedures included or referenced within the operations and maintenance manual must be implemented.

Schedule C: System-Specific Conditions

System Owner	The Corporation of the Township of Nairn and Hyman
Licence Number	281-101
Drinking Water System Name	Nairn Centre Drinking Water System
Licence Effective Date	August 11th, 2020

1.0 System Performance

Rated Capacity

- 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 in column 2 of the same row.

Table 1: Rated Capacity	
Column 1 Treatment Subsystem Name	Column 2 Rated Capacity (m ³ /day)
Nairn Centre Water Treatment Plant	818

Maximum Flow Rates

- 1.2 For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

Table 2: Maximum Flow Rates		
Column 1 Treatment Subsystem Name	Column 2 Treatment Subsystem Component	Column 3 Maximum Flow Rate (L/s)
Not Applicable	Not Applicable	Not Applicable

- 1.3 Despite conditions 1.1 and 1.2, a treatment subsystem may be operated temporarily at a maximum daily volume and/or a maximum flow rate above the values set out in column 2 of Table 1 and column 3 of Table 2 respectively for the purposes of fighting a large fire or for the maintenance of the drinking water system.
- 1.4 Condition 1.3 does not authorize the discharge into the distribution system of any water that does not meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

Residuals Management

- 1.5** In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:
- 1.5.1 The annual average concentration of a test parameter identified in column 2 shall not exceed the value in column 3 of the same row; and
- 1.5.2 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row.
- 1.5.3 The test parameters listed in column 2 of Table 3 shall be sampled in accordance with conditions 5.2, 5.3 and 5.4 of this Licence.

Table 3: Residuals Management			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Annual Average Concentration (mg/L)	Column 4 Maximum Concentration (mg/L)
Residue Management	Total Suspended Solids (composite)	25	

UV Disinfection Equipment Performance

- 1.6** For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4, and while directing water to the distribution system and being used to meet pathogen log removal/inactivation credits specified in Schedule E:
- 1.6.1 The UV disinfection equipment shall be operated within the validated limits for the equipment at all times such that a continuous pass-through UV dose is maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row
- 1.6.2 In addition to any other sampling, analysis and recording that may be required, the ultraviolet light disinfection equipment shall test for the test parameters set out in column 4 of the same row at a testing frequency of once every five (5) minutes or less and record the test data at a recording frequency of once every four (4) hours or less;
- 1.6.3 If there is a UV disinfection equipment alarm signaling that the disinfection equipment is malfunctioning, has lost power, or is not providing the appropriate level of disinfection the test parameters set out in column 4 of the same row shall be recorded at a recording frequency of once every five minutes or less until the alarm condition has been corrected;

- 1.6.4 A monthly summary report shall be prepared at the end of each calendar month which sets out the time, date and duration of each UV equipment alarm described in condition 1.6.3, the volume of water treated during each alarm period and the actions taken by the operating authority to correct the alarm situation;

Table 4: UV Disinfection Equipment			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Minimum Continuous Pass-Through UV Dose (mJ/cm²)	Column 3 Control Strategy	Column 4 Test Parameter
Not Applicable	Not Applicable	Not Applicable	Not Applicable

2.0 Flow Measurement and Recording Requirements

- 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 (L/s) and daily volume (m³/day) of treated water that flows from the treatment subsystem to the distribution system.
- 2.1.2 The flow rate (L/s) and daily volume (m³/day) of water that flows into the treatment subsystem.
- 2.2** For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.

- 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.

3.0 Calibration of Flow Measuring Devices

- 3.1** All flow measuring devices that are required by regulation, by a condition in the drinking water works permit 281-201, or by a condition otherwise imposed by the Ministry, shall be checked and where necessary calibrated in accordance with the manufacturer's instructions.
- 3.2** If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation.
- 3.2.1 For greater certainty, if condition 3.2 applies, the equipment shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

4.0 Calibration of CT Monitoring System

- 4.1** Any measuring instrumentation that forms part of the monitoring system for CT shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation, or more frequently in accordance with the manufacturer's instructions.
- 4.1.1 For greater certainty, if condition 4.1 applies, the instrumentation shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

5.0 Additional Sampling, Testing and Monitoring

Drinking Water Health and Non-Health Related Parameters

- 5.1 For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 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 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

Table 5: Drinking Water Health Related Parameters			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Table 6: Drinking Water Non-Health Related Parameters			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Environmental Discharge Parameters

- 5.2 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.
- 5.3 For the purposes of Table 7:
- 5.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the commencement of the discharge event, one sample being taken approximately at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and
- 5.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.
- 5.4 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”, 23rd Edition, 2017, or as amended from time to time by more recently published editions.

Table 7: Environmental Discharge Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sample Type	Column 4 Sampling Frequency	Column 5 Monitoring Location
Residue Management	Total Suspended Solids	Composite	Monthly	Point of Discharge

5.5 Pursuant to Condition 10 of Schedule B of this licence, the owner may undertake the following environmental discharges associated with the maintenance and/or repair of the drinking water system:

5.5.1 The discharge of potable water from a watermain to a road or storm sewer;

5.5.2 The discharge of potable water from a water storage facility or pumping station:

5.5.2.1 To a road or storm sewer; or

5.5.2.2 To a watercourse where the discharge has been dechlorinated and if necessary, sediment and erosion control measures have been implemented.

5.5.3 The discharge of dechlorinated non-potable water from a watermain, water storage facility or pumping station to a road or storm sewer;

5.5.4 The discharge of raw water from a groundwater well to the environment where if necessary, sediment and erosion control measures have been implemented; and

5.5.5 The discharge of raw water, potable water or non-potable water from a treatment subsystem to the environment where if necessary, the discharge has been dechlorinated and sediment and erosion control measures have been implemented.

5.5.6 The discharge of any excess water to a road, storm sewer or the environment, associated with the management of materials excavated as part of watermain construction or repair, where necessary sediment, erosion and environmental control measures have been implemented.

6.0 Studies Required

Harmful Algal Blooms

6.1 The owner shall develop and keep up to date a Harmful Algal Bloom monitoring, reporting and sampling plan, herein known as the “Plan”, to be implemented when a potential harmful algal bloom is suspected or present. The owner shall have the Plan in place on or before March 31, 2021.

- 6.1.1 The owner must have a copy of the Plan available onsite at the drinking water system, for inspection upon request by Ministry staff.
 - 6.1.2 The owner must implement the Plan annually during the harmful algal bloom season, during but not limited to the warm seasonal period between June 1 and October 31 each year, or as otherwise directed by the Ministry or the Medical Officer of Health.
 - 6.1.3 The owner must train all relevant drinking water system staff on the Plan prior to the beginning of each warm season, as described in Condition 6.1.2.
- 6.2** For clarity, a Harmful Algal Bloom is considered suspected or occurring when:
- 6.2.1 the owner or operating authority has observed an algal bloom:
 - 6.2.1.1 near the shoreline at or near the source water intake(s) described in drinking water works permit #281-201, or
 - 6.2.1.2 where the intake has an Intake Protection Zone in a source protection plan, within IPZ-1, or
 - 6.2.1.3 within a circle that has a radius, measured from the intake, equal to the distance from the intake to the farthest edge of IPZ-2.
 - 6.2.2 microcystin has been detected in a raw or treated water sample; and/or,
 - 6.2.3 the owner has received any form of notification related to an algal bloom from the Ministry, a Medical Officer of Health, or the public; or,
 - 6.2.4 the presence of or identification of cyanobacteria has been determined through optical probes or other analytic techniques used by the drinking water system.
- 6.3** The Plan described in condition 6.1 must include, at a minimum:
- 6.3.1 details relating to visual monitoring for harmful algal blooms at or near the drinking water system intake(s),
 - 6.3.1.1 as described in drinking water works permit #281-201, or
 - 6.3.1.2 where the intake has an Intake Protection Zone in a source protection plan, within IPZ-1, or
 - 6.3.1.3 within a circle that has a radius, measured from the intake, equal to the distance from the intake to the farthest edge of IPZ-2.
 - 6.3.2 details relating to visual monitoring of shoreline; this is applicable to drinking water systems where the proximity of the intake(s) may be of concern.
 - 6.3.3 details relating to reporting the observed or suspected harmful algal bloom, as described in section 6.2:

- 6.3.3.1 to the Overall Responsible Operator(s) and/or Operator(s)-in-Charge if the blooms have been observed or suspected by a duty operator; the Plan shall include wording that directs relevant drinking water staff to follow the instructions provided by the Overall Responsible Operator(s) or the Operator(s)-in-Charge;
 - 6.3.3.2 to the medical officer of health; and
 - 6.3.3.3 to the local MECP representative and the Ministry's Spills Action Centre.,
 - 6.3.4 a sampling plan, including the identification of sample location(s) and frequencies that at a minimum match those described in condition 6.4.
 - 6.3.5 triggers that may increase the required sampling frequency;
 - 6.3.6 up-to-date records that document staff training on the harmful algal bloom monitoring, reporting, and sampling procedures.
- 6.4** Any water samples collected under Condition 6.3.4 must be:
- 6.4.1 collected, at a minimum, once per week, or as otherwise directed by the Ministry or the medical officer of health;
 - 6.4.2 collected prior to any treatment, if the sample is taken from raw water;
 - 6.4.3 collected at the point of entry into the distribution system, if the sample is taken from treated water;
 - 6.4.4 collected from the shoreline by the drinking water system, if applicable based on Condition 6.3.1;
 - 6.4.5 submitted to a laboratory licensed to perform ELISA testing for total microcystin;
 - 6.4.6 repeatedly collected until 3 consecutive samples have shown non-detection of microcystin and the algal bloom is no longer suspected or visually observed.

7.0 Source Protection

- 7.1** The owner of the drinking water system shall implement risk management measures, as appropriate, to manage any potential threat to drinking water that results from the operation of the drinking water system.
- 7.2** The owner of the system shall notify the Director in writing within thirty (30) days of any approved changes to an applicable source protection plan that impact the assessed threat level of a fuel oil system identified in Schedule A of drinking water works permit.
- 7.3** The notification required in condition 7.2 shall include:
 - 7.3.1 A description of the changes and their impact on the assessed threat level of the fuel oil system(s); and,

- 7.3.2 A timeline for re-assessing the threat level and providing the results of the assessment to the Director.

Schedule D: Conditions for Relief from Regulatory Requirements

System Owner	The Corporation of the Township of Nairn and Hyman
Licence Number	281-101
Drinking Water System Name	Nairn Centre Drinking Water System
Licence Effective Date	August 11th, 2020

As of the effective date of the MDWL, no relief from regulatory requirements is authorized by the Director under section 46 of the SDWA in respect of the drinking water system.

Schedule E: Pathogen Log Removal/Inactivation Credits

System Owner	The Corporation of the Township of Nairn and Hyman
Licence Number	281-101
Drinking Water System Name	Nairn Centre Drinking Water System
Licence Effective Date	August 11th, 2020

1.0 Primary Disinfection Pathogen Log Removal/Inactivation Credits

Nairn Centre Water Treatment Plant

Spanish River [Surface Water]

Minimum Log Removal/ Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts ^a	Viruses ^b
Nairn Centre Water Treatment Plant	2	3	4

^a At least 0.5 log inactivation of Giardia shall be achieved by the disinfection portion of the overall water treatment process.

^b At least 2 log inactivation of viruses shall be achieved by disinfection.

Log Removal/Inactivation Credits Assigned ^c	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Conventional Filtration	2	2.5	2
Chlorination [CT:Clearwell]	NA	0.5	2+

^c Log removal/inactivation credit assignment is based on each treatment process being fully operational and the applicable log removal/inactivation credit assignment criteria being met.

Treatment Component	Log Removal/Inactivation Credit Assignment Criteria
Conventional Filtration	<ol style="list-style-type: none"> 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.
Chlorination	<ol style="list-style-type: none"> 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 <i>Procedure for Disinfection of Drinking Water in Ontario</i>; and 2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned.

DRINKING WATER WORKS PERMIT

Permit Number: 281-201
Issue Number: 4

Pursuant to the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this drinking water works permit under Part V of the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32 to:

The Corporation of the Township of Nairn and Hyman

**64 McIntyre St.
Nairn Centre ON
P0M 2L0**

For the following municipal residential drinking water system:

Nairn Centre Drinking Water System

This drinking water works permit includes the following:

Schedule	Description
Schedule A	Drinking Water System Description
Schedule B	General
Schedule C	All documents issued as Schedule C to this drinking water works permit which authorize alterations to the drinking water system
Schedule D	Process Flow Diagrams

Upon the effective date of this drinking water works permit # 281-201, all previously issued versions of permit # 281-201 are revoked and replaced by this permit.

DATED at TORONTO this 11th day of August, 2020

Signature



Aziz Ahmed, P.Eng.
Director
Part V, *Safe Drinking Water Act, 2002*

Schedule A: Drinking Water System Description

System Owner	The Corporation of the Township of Nairn and Hyman
Permit Number	281-201
Drinking Water System Name	Nairn Centre Drinking Water System
Permit Effective Date	August 11th, 2020

1.0 System Description

- 1.1 The following is a summary description of the works comprising the above drinking water system:

Overview

The **Nairn Centre Drinking Water System** consists of one conventional drinking water treatment plant and approximately 6.5 kilometers distribution watermains. The water treatment plant is a prefabricated package water treatment plant comprised of chemical addition, prechlorination, coagulation/flocculation, sedimentation, and dual media filtration.

Nairn Centre Drinking Water System

Treatment Plant

Name	Nairn Centre Water Treatment Plant
Street Address	Ferry Lane
UTM Coordinates	NAD 83, Zone 17m 455049m E, 5131662 m N
System Type	A prefabricated package surface water treatment plant
Notes	

Surface Water Supply

Intake Structure

Description	Water intake structure comprising a polyethylene "drum" (1.05 m diameter), weighed down with rock ballast, partially embedded into the river bottom
Location	
Mesh Screen	150 mm intake ports wrapped with 9.5 mm mesh screen
Intake Pipe	An intake pipe of 250mm approximately 33 m in length, connecting to the raw water well
Zebra Mussel Control	A 75 mm diameter pipe installed alongside the intake pipe, for future use in chlorination for zebra mussel control
Notes	

Low Lift Works

Wet Wells

Description	A raw water wet well
Dimensions	One (1) raw water pump wet well, 2.44 m diameter
Notes	

Low Lift Pumps

Description	Two (2) low lift pumps, alternating as duty and standby
Capacity	Each pump rated at 9.5 L/s at 18.5 m TDH
Notes	Discharging raw water into the 150 mm common header, and to the treatment plant through a 150 mm diameter PVC plant supply pipe

Mixing Zone

Description	Mixing Zone
Notes	The static in-line mixer for mixing of coagulant, soda ash and polymer added

Flocculation

Flocculation Tanks

Description	Flocculation Zone
Notes	Providing a retention time of 30 min

Clarification

Settling Compartment

Description	An upflow clarifier, complete with tube settlers
Notes	Providing a retention time of 60 min at a surface rise rate of 3.7 m/hr

Filtration

Dual Media Filter

Description	A two-compartment filter containing sand and anthracite
Notes	Operating at a filtration rate of 6.5 m/hr, and provided with backwash at a rate of 37 m/hr

Waste Residual Management

Surge Tank

Description	Surge tank receives sludge from the clarifiers and backwash waste from the dual media filters
Capacity	26 m ³
Equipment	Two (2) (one duty, one standby) centrifugal submersible pumps each rated at 1.0 L/s at 5.0 m TDH
Notes	Submersible pumps transfer waste to a 65 m ³ settling chamber (clarifier)

Setting Chamber (Clarifier)

Description	Setting Chamber (Clarifier) receives waste from the surge tank
Capacity	65 m ³
Notes	From the settling chamber overflowing to an outfall chamber, and from there to the adjacent creek and from there to the Spanish River (downstream of the plant intake); and deposited sludge removed from the clarifier by vacuum pump truck for off-site disposal

High Lift Works

High Lift Pumps

Description	High lift pumping devices
Capacity	Two (2) vertical multi-stage pumps alternating as duty and standby, each pump rated at 6.6 L/s at 59.5 m TDH
	One (1) fire pump rated at 40.1 L/s at 61 m TDH
Notes	Having a system of three hydro-pneumatic (pressure) tanks, each 1.6 m ³ capacity

On-Site Storage

Clearwells

Description	Two (2) equal-capacity clearwells, interconnected via an overflow wall
Capacity	Each clearwell has a maximum volume of 345 m ³ , for a total treated water storage volume of 690 m ³
Notes	Each clearwell equipped with a 200 mm diameter high lift pump intake

Emergency Power

Backup Power Supply

Description	A 160 kW (200 kVA) diesel generator set
Notes	Provide emergency "back-up" power for the water treatment plant

Chemical Addition

Chlorine

Description	Pre-chlorination and post-chlorination system
Feed Point	Injection point to the upstream of the static mixer into raw water for pre-chlorination
	Injection point to the filter effluent line for post-chlorination
Equipment	Three (3) metering pumps, one for pre-chlorination, Two (2) for post chlorination, one duty, one standby each pump capable of 6.3 L/hr, complete with a solution tank
Notes	

Coagulant

Description	Coagulant injection system
Feed Point	Injection into the raw water supply pipe upstream of the static mixer
Equipment	Two (2) metering pumps (one duty and one standby), each capable of 19 L/hr
	One (1) 11.4 m ³ polyethylene tank with a concrete containment
Notes	

Soda Ash System

Description	Soda ash solution injection system
Feed Point	Injection to the raw water upstream of the static mixer
	Injection also to the treated water upstream of the clearwell/reservoir
Equipment	Two (2) metering pumps (one pre and one post) each capable of 17 L/hr Both pumps can be valved to run as back up for each other.
	One (1) 1,400 L polyethylene tank
Notes	

Polymer Solution

Description	Polymer solution injection system
Feed Point	Injection to downstream of the static mixer
Equipment	Two (2) (one duty and one standby) metering pumps, each capable of 19 L/hr,
	One (1) 200 L polyethylene solution tank
Notes	

Instrumentation and Control**Regulatory Monitoring**

Description	Process control and monitoring equipment for the Nairn Centre Drinking Water System
Notes	System control with data acquisition including various in-line analyzers and monitors

Fuel Oil Systems

Nairn Centre Water Treatment Plant

Location (UTM Coordinates)	Ferry Lane NAD 83, Zone 17m 455049 m E, 5131662 m N
Description	1180L Metal Storage tank
Fuel Type	Diesel
Source Protection Area	NA
Notes	

Watermains**1.2** Watermains within the distribution system comprise:

1.2.1 Watermains that have been set out in each document or file identified in column 1 of Table 1.

Table 1: Watermains	
Column 1 Document or File Name	Column 2 Date
Township of Nairn, Water Distribution System Commissioned	July 25, 2019

1.2.2 Watermains that have been added, modified, replaced or extended further to the provisions of Schedule C of this drinking water works permit on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

1.2.3 Watermains that have been added, modified, replaced or extended further to an authorization by the Director on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

Schedule B: General

System Owner	The Corporation of the Township of Nairn and Hyman
Permit Number	281-201
Drinking Water System Name	Nairn Centre Drinking Water System
Permit Effective Date	August 11th, 2020

1.0 Applicability

- 1.1 In addition to any other applicable legal requirements, the drinking water system identified above shall be altered and operated in accordance with the conditions of this drinking water works permit and the licence #281-101.
- 1.2 The definitions and conditions of licence #281-101 are incorporated into this permit and also apply to this drinking water system.

2.0 Alterations to the Drinking Water System

- 2.1 Any document issued by the Director to be incorporated into Schedule C to this drinking water works permit shall provide authority to alter the drinking water system in accordance with the applicable conditions of this drinking water works permit and licence #281-101.
 - 2.2 All documents issued by the Director as described in condition 2.1 shall form part of this drinking water works permit.
 - 2.3 All parts of the drinking water system in contact with drinking water that are added, modified, replaced, extended shall be disinfected in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:
 - a) Until May 23, 2021, the ministry's Watermain Disinfection Procedure, dated November 2015, as of May 24, 2021, the ministry's Watermain Disinfection Procedure, dated August 1, 2020;
 - b) Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure;
 - c) AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
 - d) AWWA C653 – Standard for Disinfection of Water Treatment Plants; and
 - e) AWWA C654 – Standard for Disinfection of Wells.
- 1.0 For greater clarity, where an activity has occurred that could introduce contamination, including but not limited to repair, maintenance, or physical / video inspection, all equipment that may come in contact with the drinking water system shall be disinfected in accordance with the requirements of condition 2.3. above.
 - 2.3.2 Updated requirements described in condition 2.3 b) are effective six months from the date of publication of the updated Watermain Disinfection Procedure.

-
- 2.4 The owner shall notify the Director in writing within thirty (30) days of the placing into service or the completion of any addition, modification, replacement, removal or extension of the drinking water system which had been authorized through:
- 2.4.1 Schedule B to this drinking water works permit which would require an alteration of the description of a drinking water system component described in Schedule A of this drinking water works permit;
 - 2.4.2 Any document to be incorporated in Schedule C to this drinking water works permit respecting works other than watermains; or
 - 2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermains which were not in service at the time of the issuance of the first drinking water works permit.
- 2.5 The notification required in condition 2.4 shall be submitted using the “Director Notification Form” published by the Ministry.
- 2.6 For greater certainty, the notification requirements set out in condition 2.4 do not apply to any addition, modification, replacement, removal or extension in respect of the drinking water system which:
- 2.6.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03;
 - 2.6.2 Constitutes maintenance or repair of the drinking water system; or
 - 2.6.3 Is a watermain authorized by condition 3.1 of Schedule B of this drinking water works permit.
- 2.7 The owner shall notify the legal owner of any part of the drinking water system that is prescribed as a municipal drinking water system by section 2 of O. Reg. 172/03 of the requirements of the licence and this drinking water works permit as applicable to the prescribed system.
- 2.8 For greater certainty, the owner may only carry out alterations to the drinking water system in accordance with this drinking water works permit after having satisfied other applicable legal obligations, including those arising from the *Environmental Assessment Act*, *Niagara Escarpment Planning and Development Act*, *Oak Ridges Moraine Conservation Act, 2001* and *Greenbelt Act, 2005*.

3.0 Watermain Additions, Modifications, Replacements and Extensions

- 3.1 The owner may alter the drinking water system, or permit it to be altered by a person acting on the owner’s behalf, by adding, modifying, replacing or extending a watermain within the distribution system subject to the following conditions:
- 3.1.1 The design of the watermain addition, modification, replacement or extension:
 - a) Has been prepared by a licensed engineering practitioner;
 - b) Has been designed only to transmit water and has not been designed to treat water;

- c) Satisfies the design criteria set out in the Ministry publication “Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – June 2012”, as amended from time to time; and
 - d) Is consistent with or otherwise addresses the design objectives contained within the Ministry publication “Design Guidelines for Drinking Water Systems, 2008”, as amended from time to time.
- 3.1.2 The maximum demand for water exerted by consumers who are serviced by the addition, modification, replacement or extension of the watermain will not result in an exceedance of the rated capacity of a treatment subsystem or the maximum flow rate for a treatment subsystem component as specified in the licence, or the creation of adverse conditions within the drinking water system.
- 3.1.3 The watermain addition, modification, replacement or extension will not adversely affect the distribution system’s ability to maintain a minimum pressure of 140 kPa at ground level at all points in the distribution system under maximum day demand plus fire flow conditions.
- 3.1.4 Secondary disinfection will be provided to water within the added, modified, replaced or extended watermain to meet the requirements of O. Reg. 170/03.
- 3.1.5 The watermain addition, modification, replacement or extension is wholly located within the municipal boundary over which the owner has jurisdiction.
- 3.1.6 The owner of the drinking water system consents in writing to the watermain addition, modification, replacement or extension.
- 3.1.7 A licensed engineering practitioner has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of condition 3.1.1.
- 3.1.8 The owner of the drinking water system has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of conditions 3.1.2 to 3.1.6.
- 3.2 The authorization for the addition, modification, replacement or extension of a watermain provided for in condition 3.1 does not include the addition, modification, replacement or extension of a watermain that:
- 3.2.1 Passes under or through a body of surface water, unless trenchless construction methods are used;
 - 3.2.2 Has a nominal diameter greater than 750 mm;
 - 3.2.3 Results in the fragmentation of the drinking water system; or
 - 3.2.4 Connects to another drinking water system, unless:
 - a) Prior to construction, the owner of the drinking water system seeking the connection obtains written consent from the owner or owner’s delegate of the drinking water system being connected to; and

- b) The owner of the drinking water system seeking the connection retains a copy of the written consent from the owner or owner's delegate of the drinking water system being connected to as part of the record that is recorded and retained under condition 3.3.
- 3.3 The verifications required in conditions 3.1.7 and 3.1.8 shall be:
- 3.3.1 Recorded on "Form 1 – Record of Watermains Authorized as a Future Alteration", as published by the Ministry, prior to the watermain addition, modification, replacement or extension being placed into service; and
- 3.3.2 Retained for a period of ten (10) years by the owner.
- 3.4 For greater certainty, the verification requirements set out in condition 3.3 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:
- 3.4.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
- 3.4.2 Constitutes maintenance or repair of the drinking water system.
- 3.5 The document or file referenced in Column 1 of Table 1 of Schedule A of this drinking water works permit that sets out watermains shall be retained by the owner and shall be updated to include watermain additions, modifications, replacements and extensions within 12 months of the addition, modification, replacement or extension.
- 3.6 The updates required by condition 3.5 shall include watermain location relative to named streets or easements and watermain diameter.
- 3.7 Despite clause (a) of condition 3.1.1 and condition 3.1.7, with respect to the replacement of an existing watermain or section of watermain that is 6.1 meters in length or less, if a licensed engineering practitioner has:
- 3.7.1 inspected the replacement prior to it being put into service;
- 3.7.2 prepared a reporting confirming that the replacement satisfies clauses (b), (c) and (d) of condition 3.1.1 (i.e. "Form 1 – Record of Watermains Authorized by a Future Alteration" (Form 1), Part 3, items No. 2, 3 and 4); and
- 3.7.3 appended the report referred to in condition 3.7.2 to the completed Form 1,
- the replacement is exempt from the requirements that the design of the replacement be prepared by a licensed engineering practitioner and that a licensed engineering practitioner verify on Form 1, Part 3, item No. 1 that a licensed engineering practitioner prepared the design of the replacement.
- 3.8 For greater certainty, the exemption in condition 3.7 does not apply to the replacement of an existing watermain or section of watermain if two or more sections of pipe, each of which is 6.1 meters in length or less, are joined together, if the total length of replacement pipes joined together is greater than 6.1 meters.

4.0 Minor Modifications to the Drinking Water System

-
- 4.1 The drinking water system may be altered by adding, modifying or replacing the following components in the drinking water system:
- 4.1.1 Coagulant feed systems in the treatment system, including the location and number of dosing points:
 - a) Prior to making any alteration to the drinking water system under condition 4.1.1, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
 - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.1.1 and shall provide the Director with a copy of the review.
 - c) The notification required in condition 4.1.1 b) shall be submitted using the “Director Notification Form” published by the Ministry
 - 4.1.2 Instrumentation and controls, including new SCADA systems and upgrades to SCADA system hardware;
 - 4.1.3 SCADA system software or programming that:
 - a) Measures, monitors or reports on a regulated parameter;
 - b) Measures, monitor or reports on a parameter that is used to calculate CT; or,
 - c) Calculates CT for the system or is part of the process algorithm that calculates log removal, where the impacts of addition, modification or replacement have been reviewed by a licensed engineering practitioner;
 - 4.1.4 Filter media, backwashing equipment, filter troughs, and under-drains and associated equipment in the treatment system;
 - 4.1.5 Spill containment works; or,
 - 4.1.6 Coarse screens and fine screens
- 4.2 The drinking water system may be altered by adding, modifying, replacing or removing the following components in the drinking water system:
- 4.2.1 Treated water pumps, pressure tanks, and associated equipment;
 - 4.2.2 Raw water pumps and process pumps in the treatment system;
 - 4.2.3 Inline booster pumping stations that are not associated with distribution system storage facilities and are on a watermain with a nominal diameter not exceeding 200 mm;
 - 4.2.4 Re-circulation devices within distribution system storage facilities;
 - 4.2.5 In-line mixing equipment;
 - 4.2.6 Chemical metering pumps and chemical handling pumps;

-
- 4.2.7 Chemical storage tanks (excluding fuel storage tanks) and associated equipment; or,
 - 4.2.8 Measuring and monitoring devices that are not required by regulation, by a condition in the Drinking Water Works Permit, or by a condition otherwise imposed by the Ministry.
 - 4.2.9 Chemical injection points.
 - 4.2.10 Valves;
- 4.3 The drinking water system may be altered by replacing the following:
- 4.3.1 Raw water piping, treatment process piping or treated water piping within the treatment subsystem;
 - 4.3.2 Measuring and monitoring devices that are required by regulation, by a condition in the Drinking Water Works Permit or by a condition otherwise imposed by the Ministry.
 - 4.3.3 Coagulants and pH adjustment chemicals, where the replacement chemicals perform the same function;
 - a) Prior to making any alteration to the drinking water system under condition 4.3.3, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
 - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.3.3 and shall provide the Director with a copy of the review.
 - c) The notification required in condition 4.3.3 b) shall be submitted using the "Director Notification Form" published by the Ministry
- 4.4 Any alteration of the drinking water system made under conditions 4.1, 4.2 or 4.3 shall not result in:
- 4.4.1 An exceedance of a treatment subsystem rated capacity or a treatment subsystem component maximum flow rate as specified in the licence;
 - 4.4.2 The bypassing or removal of any unit process within a treatment subsystem;
 - 4.4.3 The addition of any new unit process other than coagulation within a treatment subsystem;
 - 4.4.4 A deterioration in the quality of drinking water provided to consumers;
 - 4.4.5 A reduction in the reliability or redundancy of any component of the drinking water system;

- 4.4.6 A negative impact on the ability to undertake compliance and other monitoring necessary for the operation of the drinking water system; or
- 4.4.7 An adverse effect on the environment.
- 4.5 The owner shall verify in writing that any addition, modification, replacement or removal of drinking water system components in accordance with conditions 4.1, 4.2 or 4.3 has met the requirements of the conditions listed in condition 4.4.
- 4.6 The verifications and documentation required in condition 4.5 shall be:
 - 4.6.1 Recorded on “Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System” published by the Ministry, prior to the modified or replaced components being placed into service; and
 - 4.6.2 Retained for a period of ten (10) years by the owner.
- 4.7 For greater certainty, the verification requirements set out in conditions 4.5 and 4.6 do not apply to any addition, modification, replacement or removal in respect of the drinking water system which:
 - 4.7.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
 - 4.7.2 Constitutes maintenance or repair of the drinking water system, including software changes to a SCADA system that are not listed in condition 4.1.3
- 4.8 The owner shall update any drawings maintained for the drinking water system to reflect the modification or replacement of the works, where applicable.

5.0 Equipment with Emissions to the Air

- 5.1 The drinking water system may be altered by adding, modifying or replacing any of the following drinking water system components that may discharge or alter the rate or manner of a discharge of a compound of concern to the air:
 - 5.1.1 Any equipment, apparatus, mechanism or thing that is used for the transfer of outdoor air into a building or structure that is not a cooling tower;
 - 5.1.2 Any equipment, apparatus, mechanism or thing that is used for the transfer of indoor air out of a space used for the production, processing, repair, maintenance or storage of goods or materials, including chemical storage;
 - 5.1.3 Laboratory fume hoods used for drinking water testing, quality control and quality assurance purposes;
 - 5.1.4 Low temperature handling of compounds with a vapor pressure of less than 1 kilopascal;
 - 5.1.5 Maintenance welding stations;
 - 5.1.6 Minor painting operations used for maintenance purposes;

- 5.1.7 Parts washers for maintenance shops;
 - 5.1.8 Emergency chlorine and ammonia gas scrubbers and absorbers;
 - 5.1.9 Venting for activated carbon units for drinking water taste and odour control;
 - 5.1.10 Venting for a stripping unit for methane removal from a groundwater supply;
 - 5.1.11 Venting for an ozone treatment unit;
 - 5.1.12 Natural gas or propane fired boilers, water heaters, space heaters and make-up air units with a total facility-wide heat input rating of less than 20 million kilojoules per hour, and with an individual fuel energy input of less than or equal to 10.5 gigajoules per hour; or
 - 5.1.13 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline or biofuel, and that are used for emergency duty only with periodic testing.
- 5.2 The owner shall not make an addition, modification, or replacement described in condition 5.1 in relation to an activity that is not related to the treatment and/or distribution of drinking water.
 - 5.3 The emergency generators identified in condition 5.1.13 shall not be used for non-emergency purposes including the generation of electricity for sale or for peak shaving purposes.
 - 5.4 The owner shall prepare an emission summary table for nitrogen oxides emissions only, for each addition, modification or replacement of emergency generators identified in condition 5.1.13.

Performance Limits

- 5.5 The owner shall ensure that a drinking water system component identified in conditions 5.1.1 to 5.1.13 is operated at all times to comply with the following limits:
 - 5.5.1 For equipment other than emergency generators, the maximum concentration of any compound of concern at a point of impingement shall not exceed the corresponding point of impingement limit;
 - 5.5.2 For emergency generators, the maximum concentration of nitrogen oxides at sensitive receptors shall not exceed the applicable point of impingement limit, and at non-sensitive receptors shall not exceed the Ministry half-hourly screening level of 1880 ug/m³ as amended; and
 - 5.5.3 The noise emissions comply at all times with the limits set out in publication NPC-300, as applicable.
- 5.6 The owner shall verify in writing that any addition, modification or replacement of works in accordance with condition 5.1 has met the requirements of the conditions listed in condition 5.5.

- 5.7 The owner shall document how compliance with the performance limits outlined in condition 5.5.3 is being achieved, through noise abatement equipment and/or operational procedures.
- 5.8 The verifications and documentation required in conditions 5.6 and 5.7 shall be:
- 5.8.1 Recorded on “Form 3 – Record of Addition, Modification or Replacement of Equipment Discharging a Contaminant of Concern to the Atmosphere”, as published by the Ministry, prior to the additional, modified or replacement equipment being placed into service; and
- 5.8.2 Retained for a period of ten (10) years by the owner.
- 5.9 For greater certainty, the verification and documentation requirements set out in conditions 5.6 and 5.8 do not apply to any addition, modification or replacement in respect of the drinking water system which:
- 5.9.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
- 5.9.2 Constitutes maintenance or repair of the drinking water system.
- 5.10 The owner shall update any drawings maintained for the works to reflect the addition, modification or replacement of the works, where applicable.

6.0 Previously Approved Works

- 6.1 The owner may add, modify, replace or extend, and operate part of a municipal drinking water system if:
- 6.1.1 An approval was issued after January 1, 2004 under section 36 of the SDWA in respect of the addition, modification, replacement or extension and operation of that part of the municipal drinking water system;
- 6.1.2 The approval expired by virtue of subsection 36(4) of the SDWA; and
- 6.1.3 The addition, modification, replacement or extension commenced within five years of the date that activity was approved by the expired approval.

7.0 System-Specific Conditions

- 7.1 Not Applicable

8.0 Source Protection

- 8.1 Not Applicable

Schedule C: Authorization to Alter the Drinking Water System

System Owner	The Corporation of the Township of Nairn and Hyman
Permit Number	281-201
Drinking Water System Name	Nairn Centre Drinking Water System
Permit Effective Date	August 11th, 2020

1.0 General

1.1 Table 2 provides a reference list of all documents to be incorporated into Schedule C that have been issued as of the date that this permit was issued.

1.1.1 Table 2 is not intended to be a comprehensive list of all documents that are part of Schedule C. For clarity, any document issued by the Director to be incorporated into Schedule C after this permit has been issued is considered part of this drinking water works permit.

Table 2: Schedule C Documents

Column 1 Issue #	Column 2 Issued Date	Column 3 Description	Column 4 Status	Column 5 DN#
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

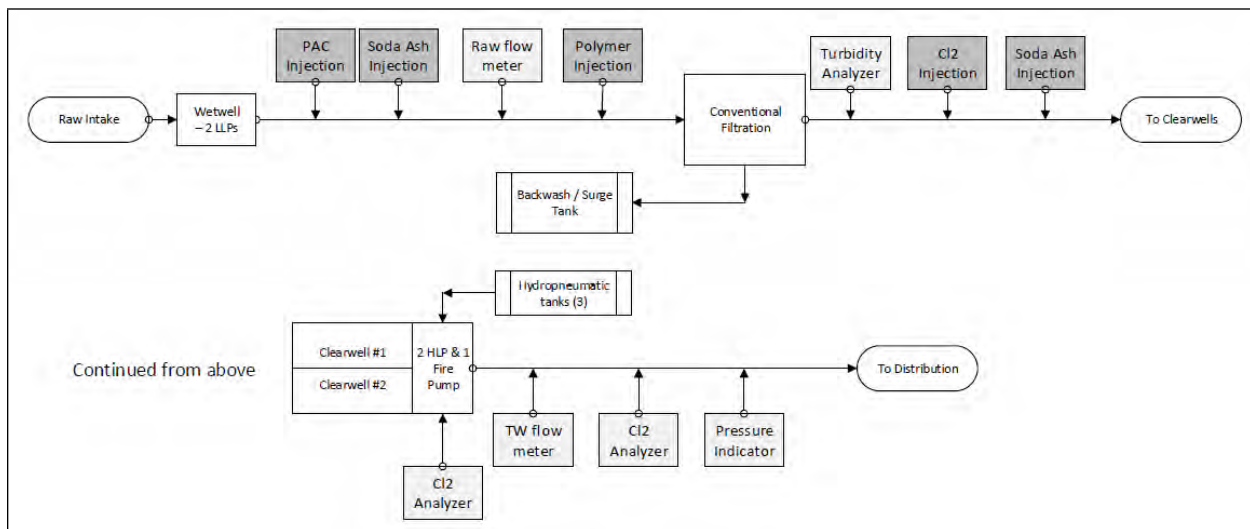
1.2 For each document described in columns 1, 2 and 3 of Table 2, the status of the document is indicated in column 4. Where this status is listed as 'Archived', the approved alterations have been completed and relevant portions of this permit have been updated to reflect the altered works. These 'Archived' Schedule C documents remain as a record of the alterations.

Schedule D: Process Flow Diagrams

System Owner	The Corporation of the Township of Nairn and Hyman
Permit Number	281-201
Drinking Water System Name	Nairn Centre Drinking Water System
Permit Effective Date	August 11th, 2020

1.0 Process Flow Diagrams

Township of Nairn and Hyman, Process flow charts of the Nairn Centre Water Treatment Plant



[Source: Operational Plan Element #6, Revision #1, December 30, 2019]

Note: this process flow diagram is for reference only, and represents a high level overview of the system as of June 20, 2020

APPENDIX C

Permit To Take Water
6410-BAPR97

PERMIT TO TAKE WATER
Surface Water
NUMBER 6410-BAPR97

Pursuant to Section 34.1 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:

The Corporation of the Township of Nairn and Hyman
64 McIntyre St Nairn Centre
Nairn and Hyman, Ontario, P0M 2L0
Canada

For the water taking from: Spanish River

Located at: Ferry St Nairn Centre
Nairn and Hyman, District of Sudbury

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

DEFINITIONS

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34.1, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment, Conservation and Parks.
- (d) "District Office" means the Sudbury District Office.
- (e) "Permit" means this Permit to Take Water No. 6410-BAPR97 including its Schedules, if any, issued in accordance with Section 34.1 of the OWRA.
- (f) "Permit Holder" means The Corporation of the Township of Nairn and Hyman.
- (g) "OWRA " means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

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

TERMS AND CONDITIONS

1. Compliance with Permit

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated March 13, 2019 and signed by Belinda Ketchabaw, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

2. General Conditions and Interpretation

- 2.1 Inspections
The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.
- 2.2 Other Approvals
The issuance of, and compliance with this Permit, does not:
 - (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and

the *Environmental Protection Act* , and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

2.2.1 Prior to the taking of any water under the authorization of this Permit, the Permit Holder shall ensure full compliance with the *Safe Drinking Water Act* , R.S.O. 2002 and its regulations. At no time does this permit authorize the taking of water when out of compliance with the *Safe Drinking Water Act* , R.S.O. 2002 and its regulations.

2.3 Information

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

2.4 Rights of Action

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

2.5 Severability

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

2.6 Conflicts

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

3. Water Takings Authorized by This Permit

3.1 Expiry

This Permit expires on **April 9, 2029**. No water shall be taken under authority of this Permit after the expiry date.

3.2 Amounts of Taking Permitted

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

Table A

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Spanish River	River	Municipal	Water Supply	570	24	820,800	365	17 455049 5131662
						Total Taking:	820,800		

4. Monitoring

4.1 The Permit Holder shall, on each day water is taken under the authorization of this Permit, record the date, the volume of water taken on that date and the rate at which it was taken. The daily volume of water taken shall be measured by a flow meter or calculated in accordance with the method described in the application for this Permit or as otherwise accepted by the Director. A separate record shall be maintained for each source. The Permit Holder shall keep all records required by this condition current and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The Permit Holder, unless otherwise required by the Director, shall submit, on or before March 31st in every year, the daily water taking data collected and recorded for the previous year to the ministry's Water Taking Reporting System.

5. Impacts of the Water Taking

5.1 Notification

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

5.2 For Surface-Water Takings

The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or

reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act* , Section 100 (4).

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

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

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

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

In addition to these legal requirements, the Notice should also include:

- a. The name of the appellant;
- b. The address of the appellant;
- c. The Permit to Take Water number;
- d. The date of the Permit to Take Water;
- e. The name of the Director;
- f. The municipality within which the works are located;

This notice must be served upon:

*The Secretary
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto ON
M5G 1E5
Fax: (416) 326-5370
Email: ERTTribunalsecretary@ontario.ca*

AND

*The Director, Section 34.1,
Ministry of the Environment, Conservation
and Parks
331-435 James St S
Thunder Bay ON P7E 6S7
Fax: (807) 475-1754*

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by Telephone at
(416) 212-6349
Toll Free 1(866) 448-2248

by Fax at
(416) 326-5370
Toll Free 1(844) 213-3474

by e-mail at
www.ert.gov.on.ca

This Permit cancels and replaces Permit Number 2003-7TDPEP, issued on 2009/06/26.

Dated at Greater Sudbury this 9th day of April, 2019.



Shannon M Innis
Director, Section 34.1
Ontario Water Resources Act , R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 6410-BAPR97, dated April 9, 2019.

APPENDIX D

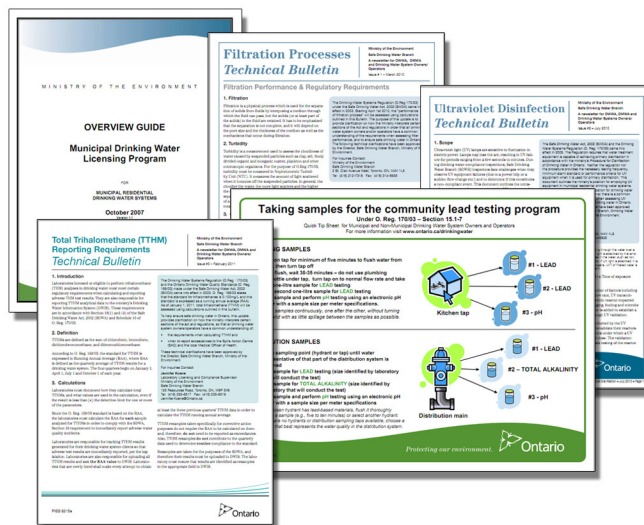
Key Reference and Guidance Material
for Municipal Residential Drinking Water
Systems

Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

Many useful materials are posted on the Ministry of the Environment's **Drinking Water Ontario** website at www.ontario.ca/drinkingwater to help in the operation of your drinking water system.

Below is a list of key materials frequently used by owners and operators of municipal drinking water systems. To read or download these materials, go to **Drinking Water Ontario** and search in the **Resources** section by **Publication Number**.

Visit **Drinking Water Ontario** for more useful materials. Contact the Public Information Centre if you need assistance or have questions at 1-800-565-4923/416-325-4000 or picemail.moe@ontario.ca.



PUBLICATION NUMBER	PUBLICATION TITLE
4448e01	Procedure for Disinfection of Drinking Water in Ontario
7152e	Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids
7467	Filtration Processes Technical Bulletin
7685	Ultraviolet Disinfection Technical Bulletin
8215	Total Trihalomethane (TTHM) Reporting Requirements Technical Bulletin (February 2011)
2601e	Overview Guide: Municipal Drinking Water Licensing Program
0000	Municipal Drinking Water Licensing Program Bulletin, Issue 1, January 2011
0000	Certification Guide for Operators and Water Quality Analysts
6560e	Taking Samples for the Community Lead Testing Program
7423e	Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption
7128e	Drinking Water System Contact List
4449e01	Technical Support Document for Ontario Drinking Water Quality Standards

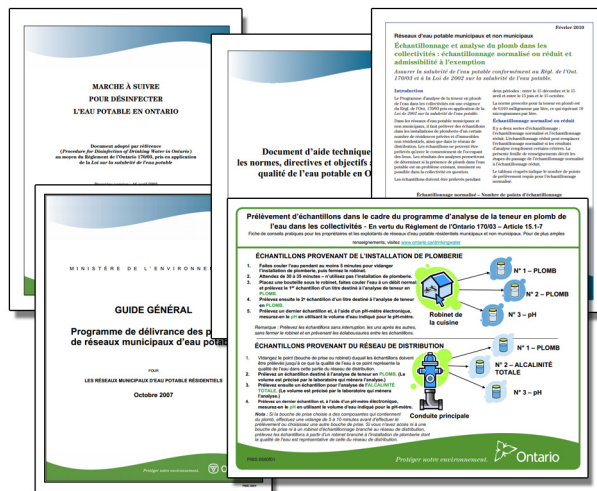
ontario.ca/drinkingwater

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

Beaucoup de documentation sur le fonctionnement d'un réseau d'eau potable se trouve sur le site Web du **ministère de l'Environnement**.

Vous trouverez ci-dessous la liste des principaux documents que les propriétaires et les exploitants de réseaux municipaux d'eau potable utilisent fréquemment. Pour lire ou télécharger ces documents, allez sur le site Web du Ministère, et effectuez une recherche par numéro de publication dans la section RESSOURCES.

Consultez le site d'**Eau potable Ontario** pour obtenir d'autre documentation. Communiquez avec le Centre d'information du public au 1 800 565-4923



ou au 416 325-4000, ou encore à **picemail.moe@ontario.ca** si vous avez des questions ou besoin d'aide.

NUMÉRO DE PUBLICATION	TITRE DE LA PUBLICATION
4448f01	Marche à suivre pour désinfecter l'eau potable en Ontario
7152e	Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids (en anglais seulement)
7467	Filtration Processes Technical Bulletin (en anglais seulement)
7685	Ultraviolet Disinfection Technical Bulletin (en anglais seulement)
8215	Total Trihalomethane (TTHM) Reporting Requirements Technical Bulletin (février 2011) (en anglais seulement)
2601f	Guide général - Programme de délivrance des permis de réseaux municipaux d'eau potable
0000	Bulletin du Programme des permis de réseaux municipaux d'eau potable, numéro 1, janvier 2011
0000	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
6560f	Prélèvement d'échantillons dans le cadre du programme d'analyse de la teneur en plomb de l'eau dans les collectivités
7423f	Échantillonnage et analyse du plomb dans les collectivités : échantillonnage normalisé ou réduit et admissibilité à l'exemption
7128f	Liste des personnes-ressources du réseau d'eau potable
4449f01	Document d'aide technique pour les normes, directives et objectifs associés à la qualité de l'eau potable en Ontario

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