

NAIRN CENTRE WTP

SUPPLY SYSTEM

ANNUAL SUMMARY REPORT

2013



**Ontario Clean Water Agency
Agence Ontarienne Des Eaux**

SECTION 1: INTRODUCTION

This report is a summary of water quality information for the Nairn Centre Water Treatment Facility, published in accordance with Schedule 22 of Ontario's Drinking-Water Systems Regulation for the reporting period of [January 1, 2013 to December 31, 2013](#). The Nairn Centre Water Treatment Facility is categorized as a Large Municipal Residential Drinking Water System.

This report is prepared by The Ontario Clean Water Agency on behalf of the Corporation of the Township of Nairn & Hyman. A copy of the Summary Report is to be provided to the members of the municipal council by [March 31, 2014](#).

SECTION 2: WHAT DOES THE REPORT CONTAIN

The report must list the requirements of the Act, the regulations, the system's approval and any order that the system **failed to meet** at any time during the period covered by the report. The report must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

For the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and future planned water uses, the following information is required to be included in this report:

- A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
- A comparison of the summary to the rated capacity and flow rates approved in the systems approval.

SECTION 3: DAILY FLOW RATES

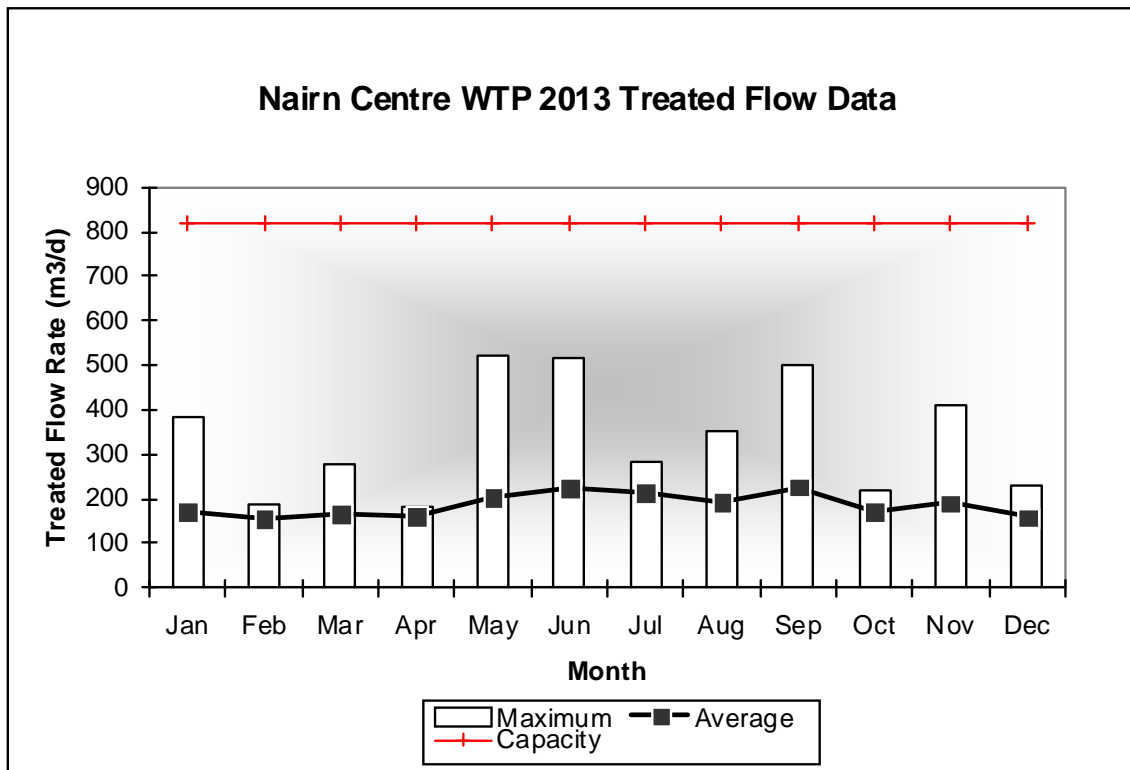
In accordance with the Municipal Drinking Water License, Schedule C, Section 1.1, the Nairn Centre water system shall not be operated to exceed a maximum flow of 818 m³/d into the distribution system. The maximum treated water flow in 2013 was 524m³ which represents 64% of capacity.

In accordance with the PTTW, the allowable rate of water taking is 9.5 L/s with a maximum daily volume of 820.8 m³/d. The monthly average raw water flow for this reporting period was 338.5m³/d and the maximum daily flow for 2013 was 524 m³/d.

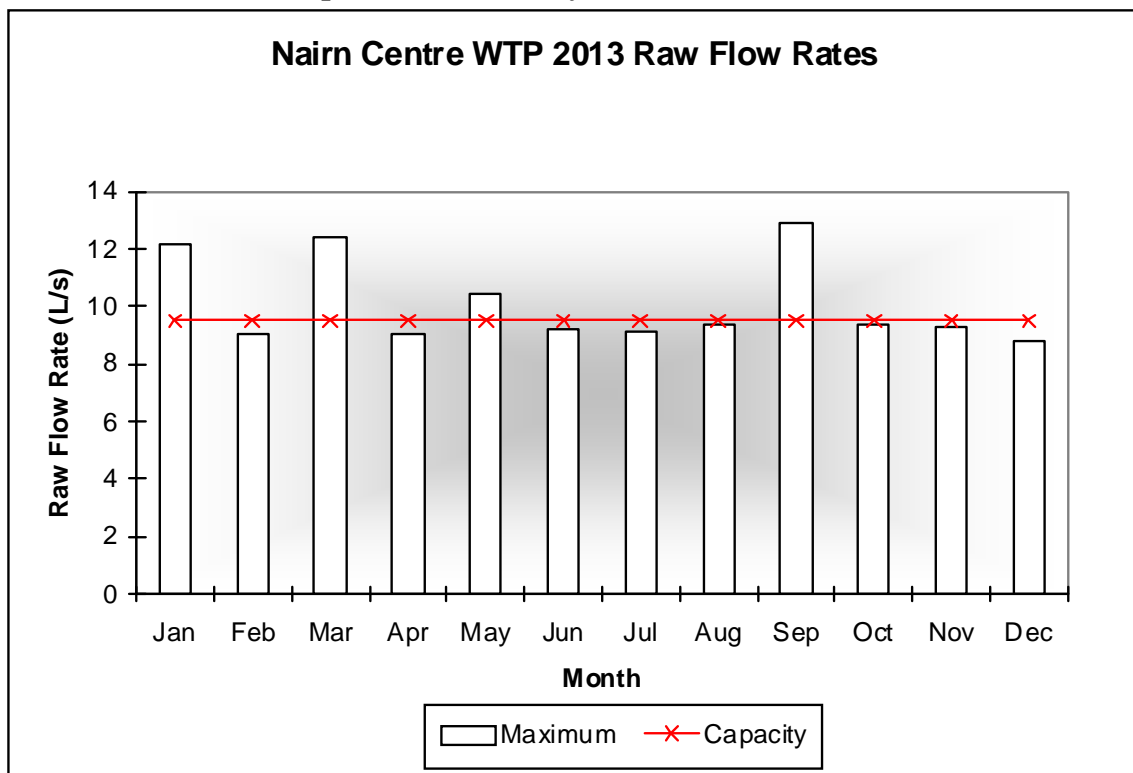
The quantity of water supplied during the reporting period **did not** exceed the rated maximum capacity of the Municipal Drinking Water License although it **did** exceed the Permit to Take Water's L/s limits on numerous occasions. More details can be found in section 4 below.

2013	RAW WATER FLOW DATA - TOTAL ALL SOURCES					
Month	Total Monthly Raw Flow (m3)	Maximum Treated Water Flow (m3/d)	Maximum Raw Flow (m3/d)	Maximum Raw Flow Rate (L/s)	PTTW Rate Limit	Maximum Rated Capacity
					L/s	m ³ /d
January	5289.0	365.0	383.0	12.21	9.5	818
February	4413.0	125.0	187.0	9.06	9.5	818
March	5119.0	235.0	276.0	12.5	9.5	818
April	4813.0	135.0	182.0	9.1	9.5	818
May	6306.0	721.0	524.0	10.5	9.5	818
June	6715.0	187.0	518.0	9.3	9.5	818
July	6592.0	216.0	280.0	9.2	9.5	818
August	5565.0	378.0	352.0	9.4	9.5	818
September	6822.0	390.0	498.0	12.9	9.5	818
October	5247.0	137.0	221.0	9.4	9.5	818
November	5712.0	401.0	410.0	9.3	9.5	818
December	4919.0	131.0	231.0	8.8	9.5	818
2013 Total	67512.0					
2013 Summary		721.0	524.0	12.9	9.5	818

Comparison of Monthly Average and Maximum Rates of Flow



Comparison of Monthly Maximum Flow Rates



Attached as Appendix A, find a summary of water taking, including average and maximum flows.

SECTION 4: SYSTEM FAILURES AND CORRECTIONS

There was a Ministry of the Environment inspection conducted on Sep 10, 2013; Inspection # 1-AP1HQ. The facility received a **100% rating** with no instances of Non Compliance or Required Actions.

Adverse Incidents

There were two instances requiring an AWQI (Adverse Water Quality Indicator) to be called in to the Medical Officer of Health or Spills Action Center in 2013. One was due to pump failure causing low pressure and low chlorine residual. Pipes were flushed and sampling was conducted with no adverse results. The second AWQI was due to loss of pressure. A BWA (Boiled Water Advisory) was put in place and disinfectant was restored. All pipes and mains were flushed and sampling was completed with no adverse results.

Non compliances

There were some exceedances of the PTTW L/s flows which were caused by the Wonerware logging program. A programming error was causing false values to be recorded onto the system. The exceedances are not true exceedances but simply false data.

SECTION 5: CONCLUSION

The Nairn Centre WTP delivers water that, in all its treated and distribution samples, indicates the water to be free of bacteriological contamination. Both the AWQI reports generated in 2013 were related to equipment and not to contamination.

For the 2013 operating year, the Nairn Centre WTP was able to meet the demand of water use without exceeding the daily maximum allowable by the Municipal Drinking Water License but did exceed Permit to Take Water L/s limit. This was not a true exceedances but was caused by erratic logging equipment and false values.

Attached as Appendix C, find the 2013 Annual Report as required by Drinking-Water System Regulation O. Reg. 170/03.

APPENDIX A

Annual Record of Water Taking

Personal information contained on this form is collected under the authority of the Ontario Water Resources Act, Section 20. The Purpose of the form is to record details and information about the taking of water annually. Questions should be directed to the respective hub office in your area.

Les renseignements personnels qui figurent dans le présent formulaire sont recueillis en vertu de l'article 20 de la Loi sur les ressources en eau de l'Ontario. Ce formulaire sert à dossiers les détails et les renseignements concernant la prise d'eau annuelle. Prière d'adresser toutes questions au personnel du bureau régional de votre secteur.

Year(Année): 2013 Permit No.(N° de permis): Source: Spanish River
 Location: RW - Raw Water

Name of Permittee: Mailing Address:
Nom du titulaire du permis Adresse postale

Location Of Taking: Twp. or Municipality: Concession: Lot:
Lieu de la prise d'eau Canton ou municipalité

	Jan/2013	Feb/2013	Mar/2013	Apr/2013	May/2013	Jun/2013	Jul/2013	Aug/2013	Sep/2013	Oct/2013	Nov/2013	Dec/2013	<-- Total -->	<-- Avg. -->	<-- Max. -->	<-- Criteria-->
Avg Daily Taking(m3)	170.61	157.61	165.13	160.43	203.42	223.83	212.65	191.9	227.4	169.26	190.4	158.68		185.94		820.8
Total Amt of Taking(m3)	5,289.0	4,413.0	5,119.0	4,813.0	6,306.0	6,715.0	6,592.0	5,565.0	6,822.0	5,247.0	5,712.0	4,919.0	67,512.0			
Max Daily Flow(m3)	383.0	187.0	276.0	182.0	524.0	518.0	280.0	352.0	498.0	221.0	410.0	231.0			524.0	820.8

APPENDIX B

**Annual Report:
2013 Operating Year**

**Part III Form 2
Section 11. ANNUAL REPORT.**

Drinking-Water System Number:	210002138
Drinking-Water System Name:	Nairn Centre Water Treatment Facility
Drinking-Water System Owner:	The Corporation of the Township of Nairn and Hyman
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2013 – December 31, 2013

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> Township of Nairn and Hyman, Municipal Office 64 McIntyre Street Nairn Centre, Ontario P0M 2L0 </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input style="width: 100px; height: 20px;" type="text"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to: <input style="width: 100px; height: 20px;" type="text"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water? Yes [] No []

Indicate how you notified system users that your annual report is available, and is free of charge.

Public access/notice via the web

Public access/notice via Government Office

Public access/notice via a newspaper

Public access/notice via Public Request

Public access/notice via a Public Library

Public access/notice via other method _____

Describe your Drinking-Water System

A prefabricated package water treatment plant, comprising chemical addition, pre-chlorination, coagulation/flocculation, sedimentation, and dual media filtration, followed by pH adjustment, fluoridation and post chlorination, designed for conventional operating parameters at a rated capacity of 818 m³/day, with duty low lift pump starting and stopping the operation of the water treatment plant. Treated water storage consisting of two clear wells each having a capacity of 345 m³. High lift pumps comprising two vertical multistage pumps, each rated at 6.6 L/s and a fire pump with a capacity of 40.1 L/s. The discharge header fitted with pressure relief valve, a pressure gauge, a chlorine injection point, a magnetic flow meter, and sampling point for a chlorine residual analyzer with the discharge header having a system of three hydro-pneumatic tanks, each with 1.6m³ capacity. A 26m³ surge tank receives sludge from the clarifier and backwash waste from the dual media filters, equipped with two centrifugal submersible pumps each rated at 1.0 L/s with clarified supernatant from the 65 m³ settling chamber overflowing to an outfall chamber, and from there to the adjacent creek and from there to the Spanish River. Stand-by power is available from a 160 kW (200 kVa) diesel generator.

List all water treatment chemicals used over this reporting period

Aluminum Sulphate
 Magnafloc LT 27 AG
 Sodium Hypochlorite (12%)
 Soda Ash (dense)
 Hydroflurosilic Acid (HFS)

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

1. Chlorine Sensor \$1813
2. Removed low lift pump for servicing \$538
3. Repairs to low lift pump \$3149
4. Reinstalled low lift pump \$538
5. New peristaltic pump \$2525
6. Troubleshoot and repair PLC \$932
7. Replace Hach Turbidity Analyzer \$2758
8. Drinking Water Quality Management Standard Audit \$1730
9. Chlorine Probe \$1045
10. Sludge haulage \$693

11. Eng. Fees for site visit and prep of piping layout \$1000

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date	AWQI #
15 March 2013	Low chlorine Pressure drop	N/A	mg/L psi	Resample and flush of mains/distribution	19 March 2013	110265
15 Aug 2013	Low Pressure	0	psi	BWA, restore disinfection, flush mains and pipes, Resample	20 Aug 2013	113429

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC /Background Samples	Range of HPC Results (min #)-(max #)
Raw	53	0-820	6-4280	0	
Treated	53	0-0	0-0	52	0->2000
Distribution	110	0-0	0-0	52	0-780

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity (Filter)	8760	0.0- 0.973 NTU
Chlorine(TW-Plant)	8760	0.0 – 2.0
Chlorine(Dist)	8760	0.163 – 2.64
Fluoride	8760	0.0 – 0.946

NOTE: For continuous monitors use 8760 as the number of samples.

*NOTE: Record the unit of measure if it is **not** milligrams per litre.*

Summary of lead testing under Schedule 15.1 during this reporting period

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Unit of Measure	Number of Exceedances
Plumbing	N/A	N/A	ug/L	0
Distribution	2	0.11-0.21	ug/L	0

MAC for Lead: 10 ug/L

Location Type	Number of Samples	Range of pH Results (min#) – (max #)	Range of Alkalinity Results mg/L as CaCO ₃ (min#) – (max#)
Plumbing	N/A	N/A	N/A
Distribution	2	8.0 – 9.3	32-35

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument

Sample Location	Parameter	Date Sampled	Result	Unit of Measure
Effluent Overflow	Suspended Solids	Monthly	2013 Average 8.75	mg/l

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date (mm/dd/yyyy)	Result Value	Unit of Measure	Exceedance
Antimony	14 Jan 2013	0.02	ug/L	No
Arsenic	14 Jan 2013	0.3	ug/L	No
Barium	14 Jan 2013	5.25	ug/L	No
Boron	14 Jan 2013	4.4	ug/L	No
Cadmium	14 Jan 2013	0.005	ug/L	No
Chromium	14 Jan 2013	<0.5	ug/L	No
Mercury	14 Jan 2013	<0.02	ug/L	No
Selenium	14 Jan 2013	<1.0	ug/L	No
Sodium	14 Jan 2013	19.1	mg/L	No
Uranium	14 Jan 2013	0.029	ug/L	No
Fluoride (Annual Avg)	Continuous	See above	mg/L	No
Nitrite	12 Nov 2013	<0.003	mg/L	No
Nitrate	12 Nov 2013	0.052	mg/L	No

Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Sample Date (mm/dd/yyyy)	Result Value	Unit of Measure	Exceedance
Alachlor	14 Jan 2013	<0.02	ug/L	No
Aldicarb	14 Jan 2013	<0.01	ug/L	No
Aldrin + Dieldrin	14 Jan 2013	<0.01	ug/L	No
Atrazine + N-dealkylated metabolites	14 Jan 2013	<0.01	ug/L	No
Azinphos-methyl	14 Jan 2013	<0.02	ug/L	No
Bendiocarb	14 Jan 2013	<0.01	ug/L	No
Benzene	14 Jan 2013	<0.32	ug/L	No
Benzo(a)pyrene	14 Jan 2013	<0.004	ug/L	No
Bromoxynil	14 Jan 2013	<0.33	ug/L	No
Carbaryl	14 Jan 2013	<0.01	ug/L	No

Carbofuran	14 Jan 2013	<0.01	ug/L	No
Carbon Tetrachloride	14 Jan 2013	<0.16	ug/L	No
Chlordane (Total)	14 Jan 2013	<0.01	ug/L	No
Chlorpyrifos	14 Jan 2013	<0.02	ug/L	No
Cyanazine	14 Jan 2013	<0.03	ug/L	No
Diazinon	14 Jan 2013	<0.02	ug/L	No
Dicamba	14 Jan 2013	<0.20	ug/L	No
1,2-Dichlorobenzene	14 Jan 2013	<0.41	ug/L	No
1,4-Dichlorobenzene	14 Jan 2013	<0.36	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	14 Jan 2013	<0.01	ug/L	No
1,2-Dichloroethane	14 Jan 2013	<0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	14 Jan 2013	<0.33	ug/L	No
Dichloromethane	14 Jan 2013	<0.35	ug/L	No
2-4 Dichlorophenol	14 Jan 2013	<0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	14 Jan 2013	<0.19	ug/L	No
Diclofop-methyl	14 Jan 2013	<0.40	ug/L	No
Dimethoate	14 Jan 2013	<0.03	ug/L	No
Dinoseb	14 Jan 2013	<0.36	ug/L	No
Diquat	14 Jan 2013	<1.0	ug/L	No
Diuron	14 Jan 2013	<0.03	ug/L	No
Glyphosate	14 Jan 2013	<6.0	ug/L	No
Heptachlor + Heptachlor Epoxide	14 Jan 2013	<0.01	ug/L	No
Lindane (Total)	14 Jan 2013	<0.01	ug/L	No
Malathion	14 Jan 2013	<0.02	ug/L	No
Methoxychlor	14 Jan 2013	<0.01	ug/L	No
Metolachlor	14 Jan 2013	<0.01	ug/L	No
Metribuzin	14 Jan 2013	<0.02	ug/L	No
Monochlorobenzene	14 Jan 2013	<0.30	ug/L	No
Paraquat	14 Jan 2013	<1.0	ug/L	No
Parathion	14 Jan 2013	<0.02	ug/L	No
Pentachlorophenol	14 Jan 2013	<0.15	ug/L	No
Phorate	14 Jan 2013	<0.01	ug/L	No
Picloram	14 Jan 2013	<1	ug/L	No
Polychlorinated Biphenyls(PCB)	14 Jan 2013	<0.04	ug/L	No
Prometryne	14 Jan 2013	<0.03	ug/L	No
Simazine	14 Jan 2013	<0.01	ug/L	No
Temephos	14 Jan 2013	<0.01	ug/L	No
Terbufos	14 Jan 2013	<0.01	ug/L	No
Tetrachloroethylene	14 Jan 2013	<0.35	ug/L	No
THM's	2013 Average	72.75	ug/L	No
2,3,4,6-Tetrachlorophenol	14 Jan 2013	<0.14	ug/L	No
Triallate	14 Jan 2013	<0.01	ug/L	No

Trichloroethylene	14 Jan 2013	<0.44	ug/L	No
2,4,6-Trichlorophenol	14 Jan 2013	<0.25	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	14 Jan 2013	<0.22	ug/L	No
Trifluralin	14 Jan 2013	<0.02	ug/L	No
Vinyl Chloride	14 Jan 2013	<0.17	ug/L	No

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
Sodium	19.1	ug/L	Jan 9, 2012
Distribution THM	77	ug/L	23 May, 2013
Distribution THM	111	ug/L	27 Aug, 2013
Distribution THM	55	ug/L	12 Nov, 2013

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)