
The 2025 Annual Drinking Water Quality Report

Kenora Water Treatment Plant

February 2026



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Introduction

The City of Kenora (City) continually provides safe drinking water to all of our customers. As mandated by the *Safe Drinking Water Act 2002, Ontario Regulation 170/03* this annual Water Quality Report includes:

- a description of the water treatment process and chemicals used;
- any major expenses to install, repair or upgrade equipment in the system;
- the results of our water tests and how they compare to provincial regulatory standards;
- a summary of incidents of regulatory non-compliance and the corrective actions taken; and,
- a summary of the quantities and water production rates of water supplied, with a comparison to the rated capacity and approved flow rates of the system

Kenora Water Treatment Plant

Municipal Drinking Water License: 228-101

Drinking Water System: 220001423

The Kenora Water Treatment Plant (WTP) is located at 5 7th Street South and has a rated capacity of 25 ML/d (million litres per day) of treated drinking water. The raw water source is Lake of the Woods under Permit to Take Water 442-9W7KXC.

This facility is a conventional filtration treatment plant with a process that consists of coagulation, upflow pulsator clarification, dual media filtration (anthracite/sand), fluoridation, pH adjustment, and chloramination for secondary disinfection. The treatment chemicals used in the current reporting year were:

- chlorine gas (disinfection, chloramination);
- sodium silicofluoride (fluoridation);
- aluminum sulphate (coagulation);
- polymer (coagulation aid);
- sodium hydroxide (pH adjustment)
- ammonium sulphate (chloramination for secondary disinfection)

The WTP is controlled through a Supervisory Control and Data Acquisition (SCADA) system that is monitored twenty-four hours per day, seven days per week. The treated drinking water is pumped into the Kenora Drinking Water System and is distributed to connected residents and water haulage customers.

Kenora Water Distribution System

The City's Water Distribution System consists of 136km of piping, 3 standpipes (Kenora Zone 1, Kenora Zone 2, Keewatin), and 5 booster stations (Brinkman Zone 2 Booster, Zone 3 Booster, Zone 4 Booster, Norman Booster, Pine Portage Booster) for pressurization and distribution of water between zones.

The drinking water system also provides drinking water to two private subsystems which are located on Rocky Heights Road, and on Wauzhushk Onigum Nation.

2025 Capital Improvements

In the current reporting year, approximately \$1,152,000 was spent on capital upgrades at the Kenora WTP and outlying Booster Station and Standpipes. Projects included:

Project	Expense Type	Location	Value
9 th Street North from Scramble Ave to Mellick Ave	Replacement	Distribution	\$1,495,500
Zone 2 Standpipe exterior coating repairs and safety upgrades	Repair	Distribution	\$144,414
Sodium Hydroxide bulk tank repair and relining	Repair	WTP	\$94,900

In addition to capital upgrades, the City continues to enhance public health protection from the Water Treatment Plant to household tap through water sampling and monitoring, ongoing upgrades to the SCADA monitoring and infrastructure management systems, oversight of water connections to the distribution system, and backflow prevention. These practices undergo continual improvement through the annual review of the Drinking Water Quality Management System. Maintaining and updating the City's Drinking Water Quality Management System is a provincially legislated requirement of a licensed municipal drinking water system.

Water Quality Testing

The City performs water quality tests each and every day, in accordance with the *Safe Drinking Water Act, 2002* and regulations. The following sections provide a summary of the test results.

Terms

CFU/100 mL: Colony-forming units per 100 millilitres of water

µg/L: micrograms per litre

mg/L: milligrams per litre

Standard: Ontario Drinking Water Quality Standard, O.Reg. 169/03

E. Coli: Escherichia coli; Bacteria associated with the intestinal tracts of humans and animals

Coliforms: Bacteria that can be associated with human or animal waste

Summary of Microbiological Testing Results

	Number of Samples	<i>E. coli</i> Results (min - max)	Total Coliform Results (min - max)	Number of Heterotrophic Plate Count* Samples	Heterotrophic Plate Count Results (min - max)
Raw Water	53	0 - 55	0 - 2420	N/A	N/A
Treated Water	53	Absent	Absent	52	0 - 4
Distribution	386	Absent	Absent	106	0 - 7

Microbiological standards for treated and distributed water:

E.coli Not Detectable

Total Coliforms Not Detectable

HPC Heterotrophic Plate Counts are conducted on some treated and distribution system samples. The HPC test is used as a tool to monitor overall quality, but the results are not indicators of water safety. There is no Drinking Water Quality Standard for HPC.

Operational Testing

Kenora's WTP uses continuous analyzers to measure and record the results of chlorine residual, turbidity and fluoride residual throughout the treatment process in the treated water, and drinking water system several times per minute, twenty-four hours per day, seven days per week. The readings are validated by an operator and are reviewed by the Ministry of the Environment, Conservation and Parks (MECP) Inspector. Kenora operators measure the chlorine in the distributed water. 'Adverse' test results must be reported if there is an indication that primary inactivation (disinfection) may not have been achieved, if the turbidity of filtered water is >1.0 Nephelometric Turbidity unit (NTU), if the fluoride residual is >1.5 mg/L or if a free chlorine residual in the distribution system is <0.25 mg/L.

Summary of Operational Testing Results

In Plant Monitoring Results

Parameter	Units	Samples	WTP Result Minimum	WTP Result Maximum	Adverse
Raw Water Turbidity	NTU	52	0.521	2.62	
Raw Water pH	pH	52	7.14	8.11	
Raw Water Colour	PtCo	52	19	64	
Raw Water Alkalinity	mg/L CaCO ₃	52	34	51	
Raw Dissolved Organic Carbon	mg/L	4	9.61	12.4	
Filter #1 Effluent Turbidity	NTU	Continuous Monitoring	0.032	0.474	No
Filter #2 Effluent Turbidity	NTU	Continuous Monitoring	0.023	1.544	No
Filter #3 Effluent Turbidity	NTU	Continuous Monitoring	0.021	0.294	No
Filter #4 Effluent Turbidity	NTU	Continuous Monitoring	0.029	1.041	No
Fluoride Residual	mg/L	Continuous Monitoring	0.11	0.94	No
Clearwell Effluent Chlorine Residual	mg/L	Continuous Monitoring	0.66	2.09	No

Operational standards for treated water:

Chlorine Residual Reportable: <0.25 mg/L, >4 mg/L

NTU >1.0

Fluoride Residual Reportable: >1.5 mg/L

Terminology

Residual: Concentration of active component in the water

NTU: Nephelometric Turbidity unit – Measures the presence of suspended material in water no greater than 1 unit (>1.0)

PtCo: Platinum Cobalt Colour Scale – Assesses organic levels in water

CaCO₃: Calcium Carbonate – Assesses hardness of water

CFU/100ml – Number of colony forming microbial cells per 100ml of water sample

Distribution Monitoring Results

Sample Type	Units	Samples	Minimum Result	Maximum Result	Adverse
Distribution Chlorine Residual	mg/L	470	0.83	2.20	No
Non-Routine Distribution Chlorine Residuals	mg/L	137	0.33	2.13	No

*Noted in 'Adverse' Results Notifications

Operational standards for distribution water:

Chlorine Residual Reportable: <0.25 mg/L, >3 mg/L

Terminology

Non-Routine Sampling driven by watermain repairs, construction, and water quality complaints

Summary of Chemical Testing Results

Inorganic Parameters – Treated Water (unless otherwise noted)

Parameter	Sample Date	Units	WTP Result	Standard Limit	Exceedance of Standard
Antimony	01/07/25	µg/L	<0.60	6	No
Arsenic	01/07/25	µg/L	<1.0	10	No
Barium	01/07/25	µg/L	<10	1000	No
Boron	01/07/25	µg/L	<50	5000	No
Cadmium	01/07/25	µg/L	<0.10	5	No
Chromium	01/07/25	µg/L	<1.0	50	No
Mercury	01/07/25	µg/L	<0.100	1	No
Selenium	01/07/25	µg/L	<1.0	50	No
Sodium	01/07/25	µg/L	13.6	20	No
Uranium	01/07/25	µg/L	<2.0	20	No
Nitrite (Maximum)	Quarterly	mg/L	0.181	10	No
Nitrate (Maximum)	Quarterly	mg/L	<0.010	1	No

Organic Parameters – Treated Water (unless otherwise noted)

Parameter	Sample Date	Units	WTP Result	Standard Limit	Exceedance of Standard
Alachlor	01/07/25	µg/L	<0.050	5	No
Atrazine + N-dealkylated metabolites	01/07/25	µg/L	<0.14	5	No
Azinphos-methyl	01/07/25	µg/L	<0.10	20	No
Benzene	01/07/25	µg/L	<0.50	1	No
Benzo(a)pyrene	01/07/25	µg/L	<0.0050	0.01	No
Bromoxynil	01/07/25	µg/L	<0.250	5	No
Carbaryl	01/07/25	µg/L	<0.050	90	No
Carbofuran	01/07/25	µg/L	<0.025	90	No
Carbon Tetrachloride	01/07/25	µg/L	<0.20	2	No
Chlorpyrifos	01/07/25	µg/L	<0.10	90	No
Diazinon	01/07/25	µg/L	<0.025	20	No
Dicamba	01/07/25	µg/L	<0.50	120	No
1,2-Dichlorobenzene	01/07/25	µg/L	<0.50	200	No
1,4-Dichlorobenzene	01/07/25	µg/L	<0.50	5	No
1,2-Dichloroethane	01/07/25	µg/L	<0.50	5	No
1,1-Dichloroethylene (vinylidene chloride)	01/07/25	µg/L	<0.50	14	No
Dichloromethane	01/07/25	µg/L	<1.0	50	No
2-4 Dichlorophenol	01/07/25	µg/L	<0.20	900	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/07/25	µg/L	<0.250	100	No
Diclofop-methyl	01/07/25	µg/L	<0.10	9	No
Dimethoate	01/07/25	µg/L	<0.050	20	No
Diquat	01/07/25	µg/L	<1.0	70	No
Diuron	01/07/25	µg/L	<0.050	150	No
Glyphosate	01/07/25	µg/L	<0.20	200	No
Distribution HAA (Running Annual Average)	Quarterly	µg/L	32.2	80	No
2-Methyl-4- chlorophenoxyacetic acid (MCPA)	01/07/25	µg/L	<0.250	100	No
Malathion	01/07/25	µg/L	<0.025	190	No

Metolachlor	01/07/25	µg/L	<0.025	50	No
Metribuzin	01/07/25	µg/L	<0.10	80	No
Monochlorobenzene	01/07/25	µg/L	<0.50	80	No
Distribution N-Nitrosodimethylamine (NDMA Maximum)	Quarterly	ng/L	3.9	9	No
Paraquat	01/07/25	µg/L	<1.0	10	No
Pentachlorophenol	01/07/25	µg/L	<0.50	60	No
Phorate	01/07/25	µg/L	<0.25	2	No
Picloram	01/07/25	µg/L	<0.50	190	No
Polychlorinated Biphenyls (PCB)	01/07/25	µg/L	<0.030	3	No
Prometryne	01/07/25	µg/L	<0.025	1	No
Simazine	01/07/25	µg/L	<0.10	10	No
Distribution THM (Running Annual Average)	Quarterly	µg/L	38.6	100	No
Terbufos	01/07/25	µg/L	<0.50	1	No
Tetrachloroethylene (perchloroethylene)	01/07/25	µg/L	<0.50	10	No
2,3,4,6-Tetrachlorophenol	01/07/25	µg/L	<0.50	100	No
Triallate	01/07/25	µg/L	<0.10	230	No
Trichloroethylene	01/07/25	µg/L	<0.50	5	No
2,4,6-Trichlorophenol	01/07/25	µg/L	<0.20	5	No
Trifluralin	01/07/25	µg/L	<0.10	45	No
Vinyl Chloride	01/07/25	µg/L	<0.50	1	No

‘Adverse’ Results Notifications

The following tables show the notices of ‘adverse’ water quality results submitted in accordance with the *Safe Drinking Water Act, 2002* to the MECP and the Medical Officer of Health.

Sample Date	Location	Adverse Condition	Corrective Action	Notice of Issue Resolution
February 23 rd , 2025	Distribution	Low Pressure	BWA issued, pressure restored, system flushed, consecutive bacteriological samples taken	March 3 rd , 2025
June 19 th , 2025	Distribution	Low Pressure	BWA issued, pressure restored, system flushed, consecutive bacteriological samples taken	June 25 th , 2025
July 17 th , 2025	Distribution	Low Pressure	BWA issued, pressure restored, system flushed, consecutive bacteriological samples taken	July 28 th , 2025

Community-Wide Lead Sampling Program Results

Under Schedule 15.1 of O. Reg. 170/03 the City of Kenora meets the requirements for reduced sampling. Previous rounds of residential plumbing sampling indicated lead levels did not meet the threshold required for continued annual testing, so lead samples are currently taken from distribution locations every three years. Sampling requirements in 2025 did not include any distribution lead samples.

Microcystin Sampling Results

Under the direction of the MECP, Microcystin-LR samples were collected on a weekly basis from June to October from the WTP.

Sample Type	Samples Taken	Microcystin Results Range (ug/L)		Microcystin Regulation (ug/L)
Raw	22	<0.1	0.2	N/A
Treated	22	<0.1	<0.1	1.5

Water Production

Effluent Flow Data

In 2025 the Kenora WTP pumped a total of 2,268,916 cubic meters (m³) of water to the distribution system. The highest daily flow took place in July, with a total of 9,513 m³ being pumped on the 26th. This is 38% of the plants rated capacity of 25,270m³/d.

Month	Total Monthly Flow (m ³)	Average Daily Flow (m ³ /d)	Maximum Daily Flow (m ³ /d)
January	194,117	6,262	6,882
February	1984,032	6,373	7,465
March	203,563	6,567	7,448
April	190,212	6,340	7,597
May	208,199	6,716	8,178
June	207,365	6,912	8,346
July	201,628	6,504	9,513
August	179,294	5,784	6,384
September	165,309	5,510	6,706
October	167,314	5,397	6,087
November	170,691	5,690	6,372
December	197,192	6,361	7,556

Influent Flow Data

In 2025 the Kenora WTP pumped a total of 2,316,757 m³ of raw water from Lake of the Woods. The highest daily flow took place in July, with a total of 9,711 m³ being pumped on the 26th. This is 37% of the plant's water taking limit of 26,000 m³/d as set out in the Permit to Take Water (PTTW). The highest instantaneous rate at which water was taken from Lake of the Woods was 22,069 m³/day, which occurred on July 30th. This is also 85% of the limit set out in the PTTW.

Month	Total Monthly Flow (m ³)	Average Daily Flow (m ³ /d)	Maximum Daily Flow (m ³ /d)
January	195,824	6,317	6,925
February	186,006	6,643	7,730
March	208,054	6,711	7,489
April	193,338	6,445	7,796
May	213,021	6,872	8,369

June	212,546	7,085	8,701
July	206,923	6,675	9,711
August	183,942	5,934	6,523
September	168,960	5,632	6,907
October	173,421	5,594	6,756
November	173,955	5,799	6,893
December	200,767	6,476	7,426

Historic Flow Data

Total effluent flow has remained relatively stable over the past 10 years. There is no expectation of significant greater demand on the system in the near future.

Year	Total Effluent Flow (m ³)	Average Daily Flow (m ³ /d)	Annual Change	2025 Comparison
2015	2,452,926	6,720	-6.4%	108%
2016	2,066,260	5,646	-15.8%	91%
2017	2,151,431	5,894	+4.1%	95%
2018	2,247,301	6,157	+4.5%	99%
2019	2,229,036	6,107	-0.8%	98%
2020	2,182,328	5,963	-2.1%	96%
2021	2,274,543	6,232	+4.2%	100%
2022	2,329,057	6,381	+2.4%	103%
2023	2,332,904	6,392	+0.2%	103%
2024	2,219,993	6,066	-5.4%	98%
2025	2,268,916	6,216	+2.2%	

Operational Compliance

An inspection was conducted by the Ministry of Environment Conservation and Parks (MECP) on April 2nd. The final inspection rating was 100.00%. No non-compliances were identified in the inspection report.

More Information or Questions

This report is available free of charge to anyone who requests a copy. An electronic copy is available on the City of Kenora website, and anyone wanting to be provided a paper copy can make arrangements to pick one up from the Water Treatment Plant. Any inquiries or concerns or request for copies of this report can be directed to:

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