

Keene Heights Drinking Water System Annual Water Report

Reporting period of
January 1, 2024 – December 31, 2024

Prepared For: Corporation of the Township of
Otonabee- South Monaghan

Prepared By:  **Ontario Clean Water Agency**
Agence Ontarienne Des Eaux

This report has been prepared to satisfy the annual reporting requirements of the Provincial Regulations and Guidelines established by the Ministry of the Environment in the Province of Ontario including the section 11 and Schedule 22 reports identified in O. Reg. 170/03, Drinking Water Systems Regulation and the Permit to Take Water Reports identified in O. Reg. 387/04, Water Taking and Transfer Regulation.

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Compliance Report Card

Drinking Water System Number:	220006393
System Owner:	Corporation of the Township of Otonabee-South Monaghan
Operating Authority:	Ontario Clean Water Agency
Drinking Water System Category:	Small Municipal Residential
Reporting Period:	January 1, 2024 – December 31, 2024

Report Availability

Population Served:	< 10,000
Website where the annual report can be viewed by the public:	www.osmtownship.ca
Alternate location where annual report will be available for inspection and is free of charge:	Township Office
How are system users notified that the annual report is available and is free of charge?	Public access/notice via Township Website
Number of Designated Facilities served:	None
Has a copy of this report been provided to all Designated Facilities?	Not applicable
Number of Interested Parties reported to:	Not applicable
Has a copy of this report been provided to all Interested Parties?	Not applicable
The following Drinking-Water Systems receive drinking water from this system:	Not applicable
Has a copy of this report been provided to connected owners?	Not applicable

Event Summary	Number of Events	Date	Details
Ministry of Environment Inspections	1	Nov. 21, 2024	Unannounced – Focused Drinking Water Inspection – Final Inspection Rating of 100%
Ministry of Labour Inspections	0	N/A	N/A
DWQMS Audit	1	May 16, 2024	Surveillance System Audit performed by SAI Global
AWQI's	0	N/A	N/A
Non-Compliance identified during Ministry Inspection	0	N/A	N/A
Community Complaints	0	N/A	N/A
Spills	0	N/A	N/A

Quality Control Measures

Corporation of the Township of Otonabee-South Monaghan facilities are part of OCWA's operational Kawartha Trent Regional Hub – South Cluster. The facilities are supported by hub, regional and corporate resources. Operational Services are delivered by OCWA staff that live and work in the surrounding area. OCWA operates facilities in compliance with applicable regulations. The facility has comprehensive manuals detailing operations, maintenance, instrumentation, and emergency procedures. All procedures are treated as active documents, with annual reviews.

OCWA has additional “Value Added” and operational support services that Corporation of the Township of Otonabee-South Monaghan benefits from including:

- Access to a network of operational compliance and support experts at the regional and corporate level, as well as affiliated programs that include the following:
 - Quality & Environmental Management System, Occupational Health & Safety System and an internal compliance audit system
 - PDM (WISKI) facility operating information repository, which consolidates field data, online instrumentation, and electronic receipt of lab test results for reporting, tracking and analysis
 - Work Management System (WMS) tracks and reports maintenance activities, and creates predictive and preventative reports
 - Wonderware SCADA system allows for process optimization and data logging, process trending, remote alarming and optimization of staff time
- Client reporting which includes operational data, equipment inventory, financial statements, maintenance work orders, and capital status reports
- Site-Specific Contingency Plans and Standard Operating Procedures
- Use of accredited laboratories
- Additional support in response to unusual circumstances, and extra support in an emergency
- Use of sampling schedules for external laboratory sampling

System Process Description

Raw Source

Raw water source for the Keene Heights Drinking Water System are two groundwater wells. The Well #1 is considered the main water supply well, while the Well #4 is a secondary standby well.

Treatment

The Keene Heights Drinking Water System in particular the treatment system consists of the following: sodium hypochlorite disinfection system and sodium silicate sequestering for iron control serving 37 homes in the Keene Heights Subdivision. This facility contains continuous, alarmed, on-line monitoring for treated water free chlorine residual and treated water turbidity.

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi Water Technologies
Sodium Silicate	Iron Removal	Jutzi Water Technologies

Summary of Non-Compliance**Non-Compliance Identified in a Ministry Inspection**

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliances identified in a Ministry Inspection during this period.				

Adverse Water Quality Incidents

Date	AWQI #	Cause			Corrective Action Taken
		Parameter	Result	Exceedance of	
There were no adverse water quality incidents reported during the period.					

Non-Compliance

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliance issues reported during the reporting period.				

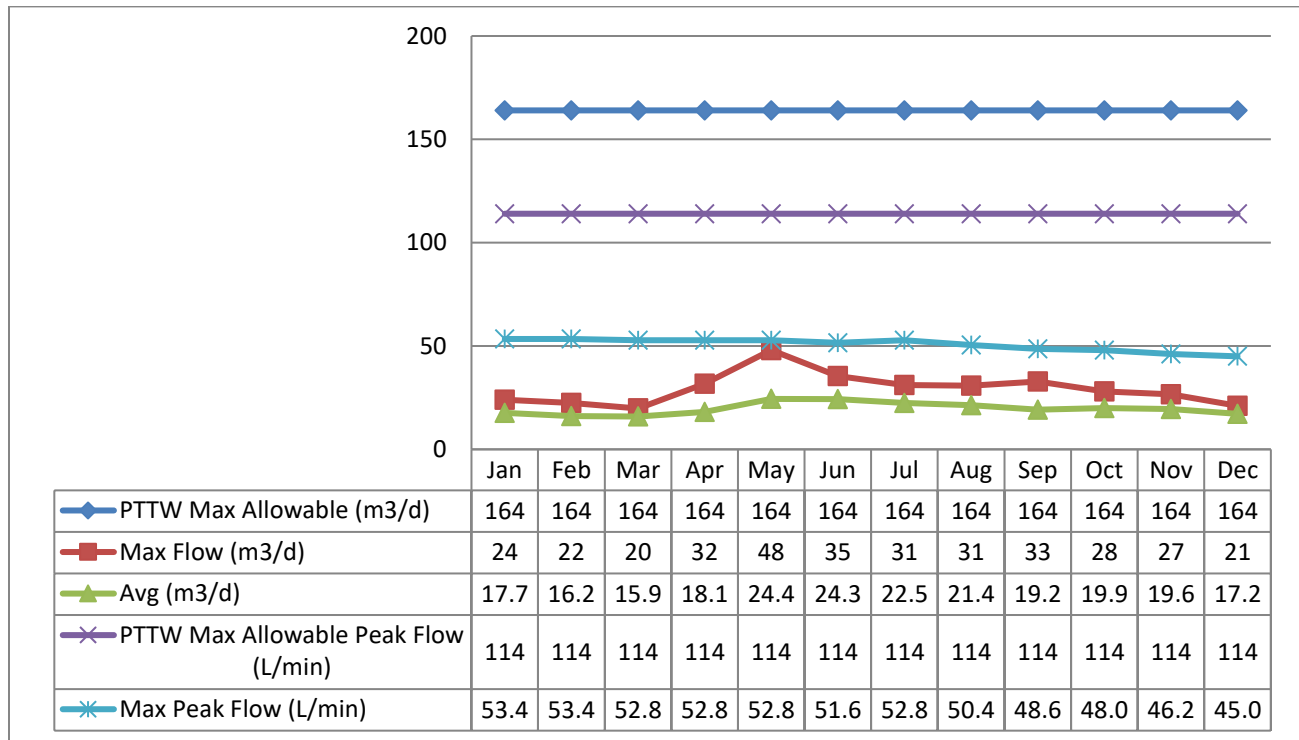
Flows

The Keene Heights Drinking Water System has a rated capacity of 66 m³/day. Additional flow data can be found under the Water Taking and Transfer Data.

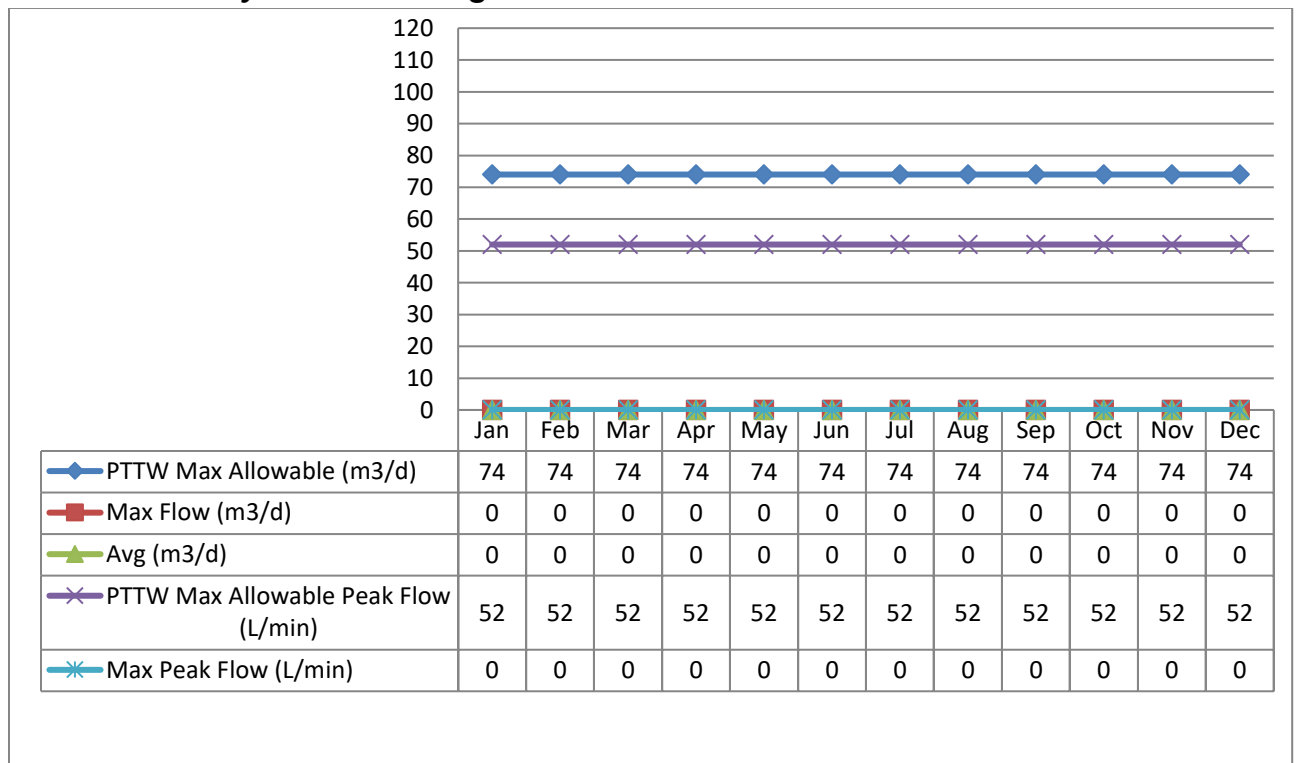
Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water.

Raw Water Volume Taken: RW1

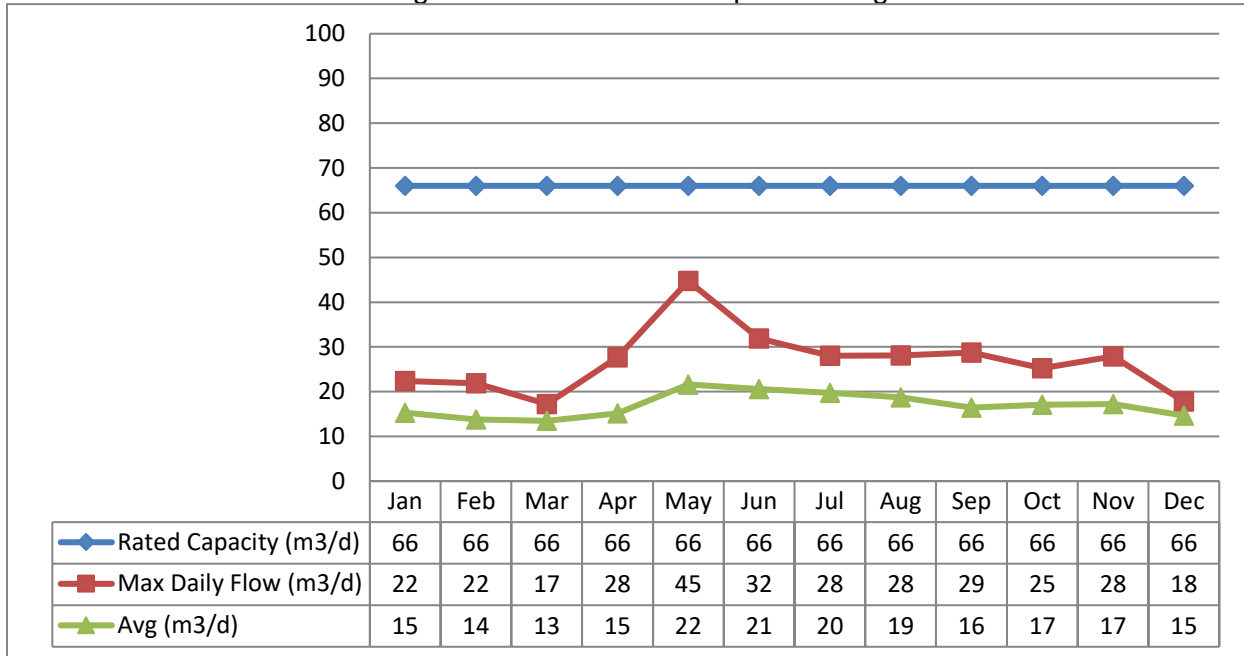


Raw Water Daily Rate of Taking: RW4



Treated Water Flows – TW

The Treated Water flows are regulated under the Municipal Drinking Water License.



Regulatory Sample Results Summary

- RW1 = Raw Water Well 1
- RW4 = Raw Water Well 4
- TW = Treated Water
- DW = Distribution Water
- N/A = Not applicable

Microbiological Testing

Location	Number of Samples	E. Coli Results (min) - (max)	Total Coliform Results (min) – (max)	Number of HPC Samples	HPC Results (min) - (max)
Raw – RW1	12	0 – 0	0 – 9	N/A	N/A
Raw – RW4	12	0 – 0	0 – 0	N/A	N/A
Treated – TW	5	0 – 0	0 – 0	N/A	N/A
Distribution – DW	53	0 – 0	0 – 0	53	0 – 6

Operational Testing

Parameter	Range of Results (min # - max #)
Turbidity, Raw Well #1	0.37 – 1.13 NTU*
Turbidity, Raw Well #4	0.64 – 2.94 NTU*
Turbidity, Treated	0.10 – 2.01 mg/L*
Free Chlorine, Treated	0.06 – 5.16 mg/L
Total Chlorine, Treated	1.68 – 4.24 mg/L
Free Chlorine, Distribution	0.15 – 4.37 mg/L
Fluoride (If the DWS provides fluoridation)	N/A

* Instrument spikes and dips recorded by on-line instrumentation were a result of air bubbles and various maintenance and calibration activities. Power interruptions may also cause an instrument reading to drop to zero. All events are reviewed for compliance with O. Reg. 170/03 and if warranted, are reported to the Ministry of Environment, Conservation and Parks as Adverse Water Quality Incidents.

Lead Sampling

The Lead Sampling Program is required under O. Reg. 170/03. This system qualified for the plumbing exemption. This facility is on a reduced sampling schedule and lead is sampled every 36 months. The next lead samples will be taken in 2025.

Location	Sample Date	Lead (ug/L)	pH	Alkalinity (mg/L) as CaCO ₃
<i>Limits/Ranges</i>		10.0	6.5-8.5	30-500
Pinecrest Sample Tap	2024/02/01	N/A	7.19	292
Pinecrest Sample Tap	2024/06/17	N/A	7.46	303

Inorganic Parameters

- MAC = Maximum Allowable Concentration as per O. Reg. 169/03
- MDL = Method the laboratory detection level
- Fluoride and Sodium are only required to be tested every 60 months.
- Inorganic parameters are only required to be tested every 60 months. Most recent samples are listed below;

Parameter	Sample Date	Result Value	MAC	Exceedance	
				MAC	½ MAC
Antimony: Sb (ug/L) – TW	2024/03/12	<MDL 0.6	6.0	No	No
Arsenic: As (ug/L) – TW	2024/03/12	0.2	25.0	No	No
Barium: Ba (ug/L) – TW	2024/03/12	97.2	1000.0	No	No
Boron: B (ug/L) – TW	2024/03/12	18	5000.0	No	No
Cadmium: Cd (ug/L) – TW	2024/03/12	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) – TW	2024/03/12	0.22	50.0	No	No
Mercury: Hg (ug/L) – TW	2024/03/12	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) – TW	2024/03/12	0.12	50.0	No	No
Uranium: U (ug/L) – TW	2024/03/12	7.93	20.0	No	No
Additional Inorganics					

Nitrite (mg/L) – TW	2024/01/01	<MDL 0.003	1.0	No	No
Nitrite (mg/L) – TW	2024/04/02	<MDL 0.003	1.0	No	No
Nitrite (mg/L) – TW	2024/07/02	<MDL 0.003	1.0	No	No
Nitrite (mg/L) – TW	2024/10/07	<MDL 0.003	1.0	No	No
Nitrate (mg/L) – TW	2024/01/01	2.08	10.0	No	No
Nitrate (mg/L) – TW	2024/04/02	2.06	10.0	No	No
Nitrate (mg/L) – TW	2024/07/02	1.94	10.0	No	No
Nitrate (mg/L) – TW	2024/10/07	2.10	10.0	No	No
60 Month Sampling					
Sodium (mg/L) – TW	2023/07/10	16.0	20.0*	No	Yes
Fluoride (mg/L) – TW	2023/07/10	0.23	1.5	No	No

*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

Organic Parameters

- MAC = Maximum Allowable Concentration as per O. Reg. 169/03
- BDL = Below the laboratory detection level
- Organic parameters are only required to be tested every 60 months. Most recent samples are listed below;

Parameter	Sample Date	Result Value	MAC	Exceedance	
				MAC	½ MAC
Alachlor (ug/L) - TW	2024/03/12	< 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2024/03/12	< 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2024/03/12	< 0.05	20.00	No	No
Benzene (ug/L) - TW	2024/03/12	< 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2024/03/12	< 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2024/03/12	< 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2024/03/12	< 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2024/03/12	< 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2024/03/12	< 0.17	2.00	No	No
Chlorpyrifos (ug/L) - TW	2024/03/12	< 0.02	90.00	No	No
Diazinon (ug/L) - TW	2024/03/12	< 0.02	20.00	No	No
Dicamba (ug/L) - TW	2024/03/12	< 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2024/03/12	< 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2024/03/12	< 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2024/03/12	< 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2024/03/12	< 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2024/03/12	< 0.35	50.00	No	No

2,4-Dichlorophenol (ug/L) - TW	2024/03/12	< 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2024/03/12	< 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2024/03/12	< 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2024/03/12	< 0.06	20.00	No	No
Diquat (ug/L) - TW	2024/03/12	< 1.0	70.00	No	No
Diuron (ug/L) - TW	2024/03/12	< 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2024/03/12	< 1.0	280.00	No	No
Malathion (ug/L) - TW	2024/03/12	< 0.02	190.00	No	No
Metolachlor (ug/L) - TW	2024/03/12	< 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2024/03/12	< 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2024/03/12	< 0.3	80.00	No	No
Paraquat (ug/L) - TW	2024/03/12	< 1.0	10.00	No	No
PCB (ug/L) - TW	2024/03/12	< 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2024/03/12	< 0.15	60.00	No	No
Phorate (ug/L) - TW	2024/03/12	< 0.01	2.00	No	No
Picloram (ug/L) - TW	2024/03/12	< 1.0	190.00	No	No
Prometryne (ug/L) - TW	2024/03/12	< 0.03	1.00	No	No
Simazine (ug/L) - TW	2024/03/12	< 0.01	10.00	No	No
Terbufos (ug/L) - TW	2024/03/12	< 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2024/03/12	< 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2024/03/12	< 0.2	100.00	No	No
Triallate (ug/L) - TW	2024/03/12	< 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2024/03/12	< 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2024/03/12	< 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2024/03/12	< 0.12	45.00	No	No
Vinyl Chloride (ug/L) - TW	2024/03/12	< 0.02	1.00	No	No
DISTRIBUTION WATER					
Trihalomethane: Total (ug/L) Annual Average - DW	2024	27.75	100.00	No	No
HAA Total (ug/L) Annual Average - DW	2024	8.15	80.00	No	No

Maintenance Summary

OCWA uses a risk-based preventative maintenance framework that ensures assets are maintained to manufacturer’s and/or industry standards. Maintenance is completed using various tools and operational supports.

OCWA uses a Work Tracking Database (Maximo). Maximo is a maintenance tracking system that can generate work orders as well as give summaries of completed and scheduled work. During the year, the operating authority at the facility generates scheduled work orders on a weekly, monthly and annual basis. The service work is recorded in the work order history. This ensures routine and preventive maintenance is carried out. Emergency and capital repair maintenance is completed and added to the system.

Capital projects are listed and provided to the Corporation of the Township of Otonabee-South Monaghan in the form of a “Capital Forecast”. This list is developed by facility staff and provides recommendations for facility components requiring upgrading or improvement.

Maintenance Highlights: major expenses incurred to install, repair or replace required equipment

WO Number	Description
3856539	Follow up, Thermostat Generator Room Louvers
4278694	Heater Fail, Replace
4144687	Pump Cent HL 01 Pipe, Leak, Replace
4051991	Clearwell 2 Meter Level Transducer Fluctuation, Repair

QEMS

A Surveillance Systems audit was conducted by SAI Global on May 16, 2024. The Corporation of the Township of Otonabee-South Monaghan Quality Management System conforms to the Standard.

Water Taking and Transfer Data

Data for the reporting period of January 1, 2024 – December 31, 2024 was submitted electronically to the Ministry of the Environment, Conservation and Parks on February 27, 2025 under Permit to Take Water No. 2868-ABYJ92.