

Central Elgin Distribution System Summary Report for 2023

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A- [2022 ANNUAL REPORT FOR THE CENTRAL ELGIN DISTRIBUTION SYSTEM](#)

Central Elgin Distribution System Summary Report for 2023

INTRODUCTION

The Central Elgin Distribution System is a large Municipal Residential Water system that is owned and operated by the Municipality of Central Elgin providing potable drinking water to both urban and rural customers. Components include a water tower, a pressure boosting station, chlorine boosting equipment, transmission watermains, pressure reducing valves, distribution watermains, water services, fire hydrants and valves. The Elgin Area Water Treatment plant supplies treated lake water from Lake Erie through a network of transmission watermains to the Central Elgin Distribution System. With just over 2,700 properties serviced, this system provides water to a population of approximately 5,700 people.

The largest service area of this water system is the Port Stanley Secondary Distribution System. This system supplies potable water to Port Stanley, Union and rural residents. Other areas serviced by rural watermains are on Barnums Gully Line, Fruit Ridge Line, John Wise Line, Yarmouth Centre Road, Tower Road, Prior Street, Springwater Road (North of Talbot Line), Water Tower Line, Turner Road, Blossom Ridge Drive, Tridon Subdivision (Wellington Road and Highway 3), Jacklin Court and Ferguson Line near Highbury Avenue. Some residents receive their water directly from secondary transmission mains on Dexter Line, Talbot Line, New Sarum Line and Highbury Avenue.

The Central Elgin Distribution System operates under the Safe Drinking Water Act (S.D.W.A.), Regulation 128/04, Regulation 170/03, Drinking Water Works Permit 046-201 and Municipal Drinking Water License 046-101. These documents outline how the water system is operated and water sampling requirements.

Chlorine boosting equipment is located on the discharge line of the Port Stanley Water Tower to assist in maintaining free chlorine residuals in the distribution system. A flow meter and online water quality analyzers assist in chlorine dosing and residual monitoring.

Regulation 170/03 requires a Summary Report to be completed each year for the Central Elgin Distribution System. This Summary Report includes a description of measures taken to comply with the Ontario Drinking Water Regulations, details of non-compliance with the Ontario Drinking Water Regulations and a brief summary of all water testing results. A more detailed summary of all water samples taken is in a separate report called the Annual Report for the Central Elgin Distribution System in the Appendices of this report.

The following is the Summary Report for 2023.

WATER SYSTEM CLASSIFICATION

The Ministry of the Environment Conservation and Parks Rates and Classifies each Water System based on the complexity of the system. Considerations include population served, size and nature of the equipment in use and the source of water. The classification number of systems range from Class 1 to Class 4, Class 1 being the simplest and Class 4 being the most complex. The class of the facility determines the level of operator certification that an operator needs to be able to work in that facility. The Central Elgin Distribution System was classified in 2005 as a Class 2 Distribution System.

REGULATORY COMPLIANCE

The Municipality of Central Elgin complies with the terms and conditions of the Safe Drinking Water Act (S.D.W.A.), Regulation 170/03, Regulation 128/04, Drinking Water Works Permit 046-201 and Municipal Drinking Water License 046-101.

The following is a description of the measures the Municipality of Central Elgin takes to ensure compliance.

Certified Operators

The Municipality of Central Elgin operates the Central Elgin Distribution System with eight certified operators. Regulation 128/04 outlines the training requirements of certified water operators in Ontario. The Municipality of Central Elgin ensures that all of its certified operators are properly trained to conform to Regulation 128/04.

Accredited Laboratories

The Municipality of Central Elgin uses accredited laboratories for all sampling and testing that is required. Microbiological samples are sent to S.G.S. Environmental Services Limited laboratory in London Ontario and chemical samples are sent to S.G.S. Environmental Limited laboratory in Lakefield Ontario.

Supervisory Control and Data Acquisition System (S.C.A.D.A.)

The Municipality of Central Elgin has a S.C.A.D.A. system for all of the water sites. The S.C.A.D.A. system provides operations staff with 24 hour a day, real time interactive contact through a wireless system that operators can view remotely through a wireless laptop computer. This wireless system provides operators with the ability to view and control the equipment at each site.

The S.C.A.D.A. system is constantly recording and tracking security, flows, pump run times, water quality results, water tower levels, water pressures, etc. All of these results are stored on the S.C.A.D.A. computer server. The S.C.A.D.A. computer will generate daily, monthly and yearly reports for review by operations staff.

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Each site has unique alarm settings for free chlorine, pressure, security, etc. The S.C.A.D.A. system will automatically notify operators by email and on the app if an alarm is generated at any of the sites.

On Line Water Quality Analyzers

Inside the Port Stanley elevated water tower is a set of online water quality analyzers that continuously analyze the free chlorine, total chlorine and pH of the tower discharge water with the results tracked on the S.C.A.D.A. system. The analyzers have pre-programmed alarms that will sound if a test result falls out of a preset range. These alarms are linked to the S.C.A.D.A. system that will notify water operators.

These analyzers provide operators with water quality information on the discharge water of the water tower. Process adjustments can be made to the chlorine boosting equipment based on this information.

Flow Meter Calibration

There is one 14-inch flow meter on the discharge line of the Port Stanley Water Tower that requires annual calibration. This flow meter measures the volume of water leaving the Port Stanley water tower and is used in pacing of the chlorine feed equipment.

Operations Manual

The Municipality of Central Elgin maintains a Water System Operations Manual that includes:

- procedures for monitoring and recording of in-process parameters for the control of the treatment/water system and assessing the performance of the water system;
- procedures for the operation and maintenance of monitoring equipment;
- contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset and equipment breakdown;
- 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, and;
- up to date Process Flow Diagrams (PFD) and Process and Instrumentation Diagrams (P&ID) for the treatment system.

Drinking Water Quality Management System (DWQMS)

The Municipality of Central Elgin maintains a Drinking Water Quality Operational Plan with associated Procedures that conforms to the Drinking Water Standard 2.0 as outlined in the Safe Drinking Water Act. This Operational Plan and its associated procedures is followed, reviewed and kept current by staff.

Central Elgin Distribution System Summary Report for 2023

Distribution System Water Samples

The Central Elgin Distribution System obtains all of its water from other regulated water systems making all of the samples distribution samples. Samples are taken from various points in the system on a rotational basis to ensure representative sampling of the entire system. Microbiological samples are tested each week for E-Coli, Total Coliforms, Background Colony Counts and Heterotrophic Plate Counts. Samples for trihalomethanes, haloacetic acids, lead, alkalinity and pH are completed as required by Regulation 170/03. Each sample is tested for free chlorine residual, total chlorine residual and turbidity by certified operators to ensure chlorine levels are adequate.

A detailed summary of all test results is in the 2023 Annual Report for the Central Elgin Distribution System.

NON-COMPLIANCE WITH TERMS AND CONDITIONS OF THE DRINKING WATER LICENSE/PERMIT AND REGULATION 170/03

During the annual Ministry of the Environment, Conservation and Parks (MECP) Inspection of the Central Elgin Distribution System July 21, 2023, a minor non-compliance was identified for a microbiological re-sample taken on December 8, 2022. The Municipality followed guidance from the Health Unit and only took a re-sample from the point of Adverse, during the inspection it was pointed out by the inspector that the Schedule 17 of Ontario Regulation 170/03 is to be followed, the Health Unit can ask for more to be done then the regulation states but not less. The regulation requires that Upstream and Downstream (if possible) is to be sampled when completing a resample for an adverse condition. Changes have been made in the DWQMS procedure and staff have been trained, the Ministry was satisfied with the changes implemented by the Municipality. It should be noted that the resample taken did come back clear of any adverse condition.

SUMMARY AND DISCUSSION OF THE QUANTITY OF WATER SUPPLIED

The Summary report requires a discussion and review of the amount of water supplied to the Central Elgin Distribution System. This review includes daily maximum, monthly average and yearly totals of water supplied. The Central Elgin Distribution System has many sources of water supply and does not have the ability to record the amount of water supplied for maintaining the distribution system and fire protection. Billing is done through individual customer water meters.

SUMMARY AND DISCUSSION OF WATER SAMPLING RESULTS

Microbiological Samples

Microbiological water sampling in the Central Elgin Distribution System is completed as required by Regulation 170/03. Weekly microbiological samples are taken from all areas of the system on a rotational basis to ensure water quality goals in all areas are achieved. A summary of the sample results is in the Annual Report for the Central Elgin Distribution System.

Many microbiological samples are taken from the Central Elgin Distribution System each year and on occasion samples are found to contain bacteria in them. This does not mean that the water was contaminated. Bacterial contamination can occur with the use of a contaminated sample bottle or the use of a contaminated sample tap.

In 2023, there was one adverse microbiological sample:

- July 4, 2023.
 - One sample from the sample station located at 6453 Sunset Road returned with a result showing one (2) Total Coliform.
 - Re-samples returned clear of all bacteria.

Chemical Samples

Regulation 170/03 requires lead, alkalinity, haloacetic acid, pH and trihalomethane and routine grab samples for free chlorine testing in the distribution system. Water Operators take more than the minimum free chlorine grab samples to ensure that chlorine residuals are adequate in all areas of the system. A detailed summary of these sample results can be found in the 2023 Annual Report for the Central Elgin Distribution System included in the Appendices of this report.

There were no incidents of adverse chemical samples in 2023.

SUMMARY AND DISCUSSION OF TREATMENT CHEMICALS USED

Sodium Hypochlorite

Sodium Hypochlorite with 12% available chlorine is added with chemical feed pumps to boost the chlorine levels of water leaving the Port Stanley Water Tower. The Sodium Hypochlorite used meets the American Water Works Association (AWWA) and American National Standards Institute (ANSI) standards.

Central Elgin Distribution System Summary Report for 2023

Primary Water Treatment Plant Chemicals

The Elgin Area Water Treatment Plant adds fluoride and chlorine in the treatment process. A summary of the chemicals used in the primary treatment process can be found in the Summary Report for Elgin Area Water Treatment Plant.

SUMMARY AND DISCUSSION OF WORK DONE TO SYSTEM

There was no significant work completed to the Central Elgin Distribution System in 2023.

SUMMARY

The Central Elgin Distribution System is operated by certified water operators with no major issues in 2023. There is a microbiological water-sampling program that reported a single adverse bacterial sample. Routine chlorine residuals tests ensure that the disinfection in the system is adequate. There were no watermain upgrades to the system in 2023, however there was 100 meters of 200mm water main installed to the Kokomo Beach club apartment site located in Port Stanley just off of Breakwater Boulevard. The use of accredited laboratories and the implementation of policies and procedures help to ensure the continuous supply of safe drinking water to the users of the Central Elgin Distribution System.

APPENDIX

A

ANNUAL REPORT

**FOR THE
CENTRAL ELGIN DISTRIBUTION SYSTEM**

Part III Form 2
Section 11. ANNUAL REPORT.

| | |
|--|--------------------------------------|
| Drinking-Water System Number: | 260004761 |
| Drinking-Water System Name: | Central Elgin Distribution System |
| Drinking-Water System Owner: | Municipality of Central Elgin |
| Drinking-Water System Category: | Large Municipal Residential |
| Period being reported: | January 1, 2023 to December 31, 2023 |

| | |
|--|---|
| <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;"> Central Elgin Administration Office 450 Sunset Drive St. Thomas Ontario, Canada N5R 5V1 </div> | <p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> <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: <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div></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> |
|--|---|

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

The Central Elgin Distribution System is a collection of water service areas that obtain all of their water from other regulated water systems. The majority of the consumers are in Port Stanley and Union, which obtain all of their water from the Elgin Area Primary Water System. The remaining areas obtain their water from rural spur mains that are connected to other secondary water systems. There are approximately 5,700 people serviced by the Central Elgin Distribution System.

There is chlorine boosting equipment located inside the Port Stanley Elevated Water Tower which uses Sodium Hypochlorite to increase chlorine levels on the discharge side of the water tower.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite is used for disinfection at the Port Stanley Water Tower and is the only chemical used within the Central Elgin Distribution System.

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

No significant expenses incurred in 2023.

Drinking-Water Systems Regulation O. Reg. 170/03

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

| Parameter | Result | Unit of Measure | Corrective Action | Corrective Action Date |
|----------------|--------|-----------------|-------------------|------------------------|
| Total Coliform | 2 | Count/100 mL | Resample | July 6, 2023 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

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 Samples | Range of HPC Results (min #)-(max #) | Number of Background Samples | Range of Background Results (min #)-(max #) |
|---------------------|-------------------|--|---|-----------------------|--------------------------------------|------------------------------|---|
| Distribution System | 526 | 0 to 0 | 0 to 2 | 533 | <10 to 990 | 526 | 0 to 135 |

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

| Parameter | Number of Grab Samples | Range of Results of grab samples (min #)-(max #) | Number of Continuous Monitoring Samples | Range of Results of continuous monitoring (min #)-(max #) | Average of continuous monitoring results |
|-------------------------------|------------------------|--|---|---|--|
| Turbidity (Distribution) | 1422 | 0.04 to 0.94 NTU | 0 | N/A | N/A |
| pH (Distribution) | 6 | 6.74 to 6.96 | 8760 | 6.91 to 8.08 | 7.32 |
| Free Chlorine (Distribution) | 1685 | 0.09 to 2.21 mg/L | 8760 | 0.49 to 5.00 mg/L | 1.40 mg/L |
| Total Chlorine (Distribution) | 1685 | 0.13 to 2.27 mg/L | 8760 | 0.49 to 4.84 mg/L | 1.48 mg/L |

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

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

| Date of legal instrument issued | Parameter | Date Sampled | Result | Unit of Measure |
|---------------------------------|-----------|--------------|--------|-----------------|
| - | - | - | - | - |

Drinking-Water Systems Regulation O. Reg. 170/03

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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|-----------|-------------|--------------|-----------------|------------|
| Antimony | | | | |
| Arsenic | | | | |
| Barium | | | | |
| Boron | | | | |
| Cadmium | | | | |
| Chromium | | | | |
| *Lead | See | Table | Below | |
| Mercury | | | | |
| Selenium | | | | |
| Sodium | | | | |
| Uranium | | | | |
| Fluoride | | | | |
| Nitrite | | | | |
| Nitrate | | | | |

Summary of lead testing under Schedule 15.1 during this reporting period

| Location Type | Number of Samples | M.A.C. | Range of Lead Results | Number of Exceedances |
|---------------|-------------------|-----------|------------------------|-----------------------|
| Plumbing | 0 | 0.10 mg/L | N/A | N/A |
| Distribution | 6 | 0.10 mg/L | .00004 to 0.00015 mg/L | 0 |

Summary of alkalinity testing under Schedule 15.1 during this reporting period

| Location Type | Number of Samples | M.A.C. | Range of Alkalinity Results | Number of Exceedances |
|---------------|-------------------|--------|-----------------------------|-----------------------|
| Distribution | 6 | N/A | 89 to 97 mg/L | N/A |

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

| Parameter | Sample Date | M.A.C. | Result Value | Unit of Measure | Exceedance |
|--------------------------------------|-------------|--------|--------------|-----------------|------------|
| Alachlor | | | | | |
| Aldicarb | | | | | |
| Aldrin + Dieldrin | | | | | |
| Atrazine + N-dealkylated metabolites | | | | | |
| Azinphos-methyl | | | | | |
| Bendiocarb | | | | | |
| Benzene | | | | | |
| Benzo(a)pyrene | | | | | |
| Bromoxynil | | | | | |
| Carbaryl | | | | | |
| Carbofuran | | | | | |
| Carbon Tetrachloride | | | | | |
| Chlordane (Total) | | | | | |
| Chlorpyrifos | | | | | |

| | | | | | |
|--|------------------|---------------------|---------------------|-------------|-----------|
| Cyanazine | | | | | |
| Diazinon | | | | | |
| Dicamba | | | | | |
| 1,2-Dichlorobenzene | | | | | |
| 1,4-Dichlorobenzene | | | | | |
| Dichlorodiphenyltrichloroethane (DDT) + metabolites | | | | | |
| 1,2-Dichloroethane | | | | | |
| 1,1-Dichloroethylene (vinylidene chloride) | | | | | |
| Dichloromethane | | | | | |
| 2-4 Dichlorophenol | | | | | |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | | | | | |
| Diclofop-methyl | | | | | |
| Dimethoate | | | | | |
| Dinoseb | | | | | |
| Diquat | | | | | |
| Diuron | | | | | |
| Glyphosate | | | | | |
| Total Haloacetic Acids (HAA5) | 2023 Avg. | R.A.A. 0.080 | R.A.A. 0.009 | mg/L | No |
| Heptachlor + Heptachlor Epoxide | | | | | |
| Lindane (Total) | | | | | |
| Malathion | | | | | |
| Methoxychlor | | | | | |
| Metolachlor | | | | | |
| Metribuzin | | | | | |
| Monochlorobenzene | | | | | |
| Paraquat | | | | | |
| Parathion | | | | | |
| Pentachlorophenol | | | | | |
| Phorate | | | | | |
| Picloram | | | | | |
| Polychlorinated Biphenyls(PCB) | | | | | |
| Prometryne | | | | | |
| Simazine | | | | | |
| THM (Total) (NOTE: show latest annual average) | 2023 Avg. | R.A.A. 0.10 | R.A.A. 0.039 | mg/L | No |
| Temephos | | | | | |
| Terbufos | | | | | |
| Tetrachloroethylene | | | | | |
| 2,3,4,6-Tetrachlorophenol | | | | | |
| Triallate | | | | | |
| Trichloroethylene | | | | | |
| 2,4,6-Trichlorophenol | | | | | |
| 2,4,5-Trichlorophenoxy acetic acid (2,4,5-T) | | | | | |

Drinking-Water Systems Regulation O. Reg. 170/03

| | | | | |
|----------------|--|--|--|--|
| Trifluralin | | | | |
| Vinyl Chloride | | | | |

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 |
|-----------|--------------|-----------------|----------------|
| - | - | - | - |
| | | | |

(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)