



LUCAN BIDDULPH WATER DISTRIBUTION SYSTEM

2023 SUMMARY REPORT

Drinking-Water System Number:	260003071
Drinking-Water System Name:	Lucan Biddulph Water Distribution
Drinking-Water System Owner:	The Corporation of the Township of Lucan Biddulph
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	1 January 2023 to 31 December 2023
Classification of System	Class 2 Water Distribution Subsystem

Preamble

As a requirement of Ontario Regulation (O.Reg.) 170/03, a regulation made under the Safe Water Drinking Act, every owner of a drinking water system must prepare a summary report for every water system operated by the owner. Where a water system is owned by a municipality the report must be presented to the Municipal Council. All summary reports must be prepared by March 31 in the year following the year which the report covers.

In addition to the above report, an Annual report must be prepared and be available for viewing by February 28 of the year following the year which the report covers. A copy of this report is presented at the end of this Summary Report for Council's review.

System Description

Water to the Lucan booster station is supplied by the Lake Huron Water Supply System (LHWSS). The Lucan booster station transmits the water to a 2270 m³ (500,000 gal) elevated storage tank where it provides water to approximately 1400 units @ approximately 68psi. The distribution system extends 8km to the Granton re-chlorination Facility in the Village of Granton, where it is re-chlorinated and stored in a 415 m³ (110,000 gal) reservoir for distribution to approximately 130 units.

The Lucan Booster station includes three (3) booster pumps, chlorine analysis equipment, emergency stand-by power (generator) and a full computer controlled supervisory control and data acquisition system (SCADA).

The system operation is such that the pipeline water delivered from the LHWSS is pumped via the booster pumps to the elevated water tower where gravity returns it to the distribution system. The water from the LHWSS is continually monitored for chlorine levels and should the levels drop below a preset low level, an alarm is sounded, and an operator is alerted.

The Granton re-chlorination facility receives water from Lucan. If needed (based on incoming chlorine levels), the water is re-chlorinated and pumped from the reservoir to the distribution system in Granton. To ensure proper chlorine levels, the facility includes chlorine analyzing equipment and chlorine injection pumps. The chlorine injection system utilizes a Sodium Hypochlorite (NaOCl) at a 12% concentration level.

Modification\Maintenance to the Water System

Lucan/Granton Booster Stations

During the 2023 year, the Township of Lucan Biddulph installed a new booster pump at the Granton Booster Station (July 26, 2023). No other significant modifications were completed in 2023.

Lucan/Granton Distribution Systems

In 2023, the Township of Lucan Biddulph experienced one water main break and no service leaks. The main break was at 196 Water St. in Lucan. The 4" PVC pipe was drilled into by a contractor. The main was repaired and samples were taken upstream and downstream. A boil water advisory was issued in the affected area until samples were analysed and determined to be safe.

Installation of New Watermain

During 2023, the Township of Lucan Biddulph installed one new section of watermain to its distribution system.

Westdel #4 HWY NWM (Lucan): The 250mm (10") watermain was extended North (Approx. 400m) on HWY #4 to supply water to new developments.

Results of Mandatory Testing

In 2023, there were 2 lead samples taken from the distribution system.

Both lead samples from the distribution system (collected at fire hydrants) were below the regulatory limit (see test results below). The MOE and the Medical Officer of Health for Middlesex County (MOH) were informed of the test results as required.

Compliance

During this period, the facility was operated in full compliance with the Act, the Regulations and the facility's approval except for the following instances:

Requirement	Duration of Failure	Measures to Correct the Failure
Quarterly THM & HAA sampling was missed.	Fourth quarter of 2022.	Created a sample collection check sheet. Completed staff training/sign off on the new check sheet.
Failed to properly document disinfection procedures for highlift #3 pump install in Granton.	July 2023	Operating authority created a fill in the blank equipment disinfection form to verify completeness and accuracy.

Jacobs received a 87.58% Inspection Rating from the Ministry of Conservation & Parks (MECP) during the 2023 Inspection review period.

Flows

The existing pumps at the Lucan Booster Station have a capacity of 3600m³/day. The system is currently operating well within its limits and no capacity expansion should be required for the foreseeable future.

The average monthly flow per day for 2023 was 848 m³ while the total combined annual flow was 309 741 m³

The following is a summary of the monthly flows recorded for the Lucan Biddulph Water Distribution System in m³ for 2023.

	2023	
Month	Daily Avg. (m ³)	Total (m ³)
Jan	737	22 840
Feb	727	20 357
Mar	736	22 805
Apr	765	22 944
May	1039	32 223
Jun	1292	38 772
Jul	931	28 874
Aug	873	27 062
Sep	800	23 986
Oct	749	23 207
Nov	748	22 465
Dec	781	24 206
Average	848 m³	
Total Flow		309 741 m³
2022 Flow's	855 m³	312 486 m³

Recommendation

That the Township of Lucan Biddulph accepts the Lucan Biddulph Distribution System Summary and Annual Reports 2023 and that the report will be made available on the Township website.

All of which is respectfully submitted by:



Rick Marsh

Jacobs (OMI Canada Inc.)

Project Manager/Overall Responsible Operator (ORO)
Township of Lucan-Biddulph
519 490 5576



2023 ANNUAL REPORT: Township of Lucan Biddulph

Drinking-Water System Number:	260003071
Drinking-Water System Name:	Lucan Biddulph Water Distribution
Drinking-Water System Owner:	The Corporation of the Township of Lucan Biddulph
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; margin-top: 10px;"> <p>www.lucanbiddulph.on.ca and</p> <p>Lucan Biddulph Township Office 270 Main Street Lucan, ON</p> </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; text-align: center; margin: 5px;">3</div> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [x] No []</p> <p>Number of Interested Authorities you report to:</p> <div style="border: 1px solid black; width: 100px; text-align: center; margin: 5px;">0</div> <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
Lucan Biddulph Water Distribution	260003071

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 [x] 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 Water System is supplied by the Lake Huron Regional Water Supply System to the Lucan Booster station. The Lucan station consists of three highlift pumps, a supervisory control and data acquisition (SCADA) system and a back up generator. The highlift pumps pump the water to a 500,000 gallon elevated tank (Lucan Water Tower) where it is distributed to approximately 1400 customers at 68 psi. The system also supplies the Village of Granton via 8 km of transmission main. The Granton Booster Station consists of four highlift pumps that provide the system with pressure, a re-chlorination system and is equipped with SCADA system and back up generator.

List all water treatment chemicals used over this reporting period

12% Sodium hypochlorite (NaOCl)

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

The following projects were undertaken this year:

During the 2023 year, the Township of Lucan Biddulph installed a new booster pump at the Granton Booster Station (July 26, 2023) and added one new section of watermain in Lucan.

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
N/A					

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 #)
Raw	N/A				
Treated	N/A				
Distribution	308	0-0,	0-0,	102	<10 to 320

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	N/A	
Chlorine	8760	0.28 -1.82
Fluoride (If the DWS provides fluoridation)	N/A	

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 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
N/A				

Summary of Inorganic parameters tested during this reporting period or the most recent sample results (Inorganic parameters are sampled by Lake Huron Supply).

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony		N/A		
Arsenic		N/A		
Barium		N/A		
Boron		N/A		
Cadmium		N/A		
Chromium		N/A		
Haloacetic Acids	Quarterly	16.0	Ug/L	No
*Lead		N/A		
Mercury		N/A		



Selenium		N/A		
Sodium		N/A		
Uranium		N/A		
Fluoride		N/A		
Nitrite		N/A		
Nitrate		N/A		

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

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	Date	Number of Samples	Range of Lead Results (min#) – (max #)	Exceedance?
Distribution	Apr 4, 2023	1	0.11 ug/l	No
Distribution	Oct 3, 2023	1	0.18 ug/l	No

Note: Maximum Acceptable Concentration=10.0 ug/L.

Summary of Organic parameters sampled during this reporting period or the most recent sample results. (Organic parameters are sampled by Lake Huron Supply).

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor		N/A		
Aldicarb		N/A		
Aldrin + Dieldrin		N/A		
Atrazine + N-dealkylated metabolites		N/A		
Azinphos-methyl		N/A		
Bendiocarb		N/A		
Benzene		N/A		
Benzo(a)pyrene		N/A		
Bromoxynil		N/A		
Carbaryl		N/A		
Carbofuran		N/A		
Carbon Tetrachloride		N/A		
Chlordane (Total)		N/A		
Chlorpyrifos		N/A		
Cyanazine		N/A		
Diazinon		N/A		
Dicamba		N/A		
1,2-Dichlorobenzene		N/A		
1,4-Dichlorobenzene		N/A		



Dichlorodiphenyltrichloroethane (DDT) + metabolites		N/A		
1,2-Dichloroethane		N/A		
1,1-Dichloroethylene (vinylidene chloride)		N/A		
Dichloromethane		N/A		
2-4 Dichlorophenol		N/A		
2,4-Dichlorophenoxy acetic acid (2,4-D)		N/A		
Diclofop-methyl		N/A		
Dimethoate		N/A		
Dinoseb		N/A		
Diquat		N/A		
Diuron		N/A		
Glyphosate		N/A		
Heptachlor + Heptachlor Epoxide		N/A		
Lindane (Total)		N/A		
Malathion		N/A		
Methoxychlor		N/A		
Metolachlor		N/A		
Metribuzin		N/A		
Monochlorobenzene		N/A		
Paraquat		N/A		
Parathion		N/A		
Pentachlorophenol		N/A		
Phorate		N/A		
Picloram		N/A		
Polychlorinated Biphenyls(PCB)		N/A		
Prometryne		N/A		
Simazine		N/A		
THM (NOTE: show latest annual average)	Quarterly	41.25	ug/l	No
Temephos		N/A		
Terbufos		N/A		
Tetrachloroethylene		N/A		
2,3,4,6-Tetrachlorophenol		N/A		
Triallate		N/A		
Trichloroethylene		N/A		
2,4,6-Trichlorophenol		N/A		
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)		N/A		
Trifluralin		N/A		
Vinyl Chloride		N/A		

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
N/A			



--	--	--	--