



LUCAN BIDDULPH WATER DISTRIBUTION SYSTEM

2020 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 2020 to 31 December 2020
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. 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 2020 year, the Township of Lucan Biddulph did not undertake any modifications to its booster stations.

Lucan/Granton Distribution Systems

In 2020, the Township of Lucan Biddulph experienced zero water main breaks. There were however, two service leaks and one valve leak. There was a large service leak on King St in Granton, a smaller service leak on William & Main St. in Lucan and a leaking valve on Kleinfeldt & Nicoline also in Lucan.

Installation of New Watermain

During 2020, the Township of Lucan Biddulph assumed three new sections of watermain to its distribution system. The first addition located on Miller Dr and consisted of 300 meters of 200 millimeter PVC pipe. The second being the Olde Clover Village (Phase 4) construction. This consisted of 800 meters of 200 millimeter PVC pipe. The Nagle Dr addition was the third where 2200 meters of 150 millimeter PVC pipe was installed on Richmond St, Roman Line and Nagle Dr.

Results of Mandatory Testing

In 2020, there were 20 lead samples taken from the plumbing of private dwellings, four of which failed to meet the requirements of the Safe Water Drinking Act. The local Health Unit and Ministry of Environment were notified of the exceedances. As directed by the Health Unit, the two homeowners were given information packages informing them of them of potential health risks associated with lead plumbing. All other mandatory tests carried out meet the requirements of the Safe Water Drinking Act.

All lead samples from the distribution system (municipal buildings/fire hydrants) were below the regulatory limit. 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
Chlorine residuals were not included on chain of custody	Once (April 7, 2020)	Operators were reminded to double check paperwork prior to lab submissions
Not all maintenance activities were properly recorded in plant logbooks during after hour call ins.	Several occasions throughout inspection period.	Staff were reminded to properly fill out logbooks during call ins. Some "actions taken/conclusions" were not filled out.
An emergency order issued by the Government of Ontario allowed unlicensed operators to operate a drinking water system during the covid-19 pandemic. However, this order ended on July 31, 2020.	The unlicensed operator finished the oncall week of August 1 st , 2 nd & 3 rd , 2020.	This operator is aware of the situation and is no longer operating in the drinking water system.

Flows

The existing pumps at the Lucan Booster Station have a capacity of 3600m³/day each. 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 2020 was 950 m³ while the total combined annual flow was 347 206 m³

The following is a summary of the monthly flows recorded for the Lucan Biddulph Water Distribution System in m³ for 2020.

Two (2) charts are presented below showing monthly accumulated flows and average daily flows by month.

	2020	
Month	Daily Avg. (m³)	Total (m³)
Jan	797	24 736
Feb	822	23 838
Mar	843	26 152
Apr	885	26 550
May	1015	31 472
Jun	1316	39 493
Jul	1305	40 464
Aug	935	29 007
Sep	897	26 911
Oct	836	25 103
Nov	847	25 413
Dec	905	28 067
Average	950 m³	
Total Flow		347 206 m³

Table 1: Daily Average Flow in Cubic Meters (m³)

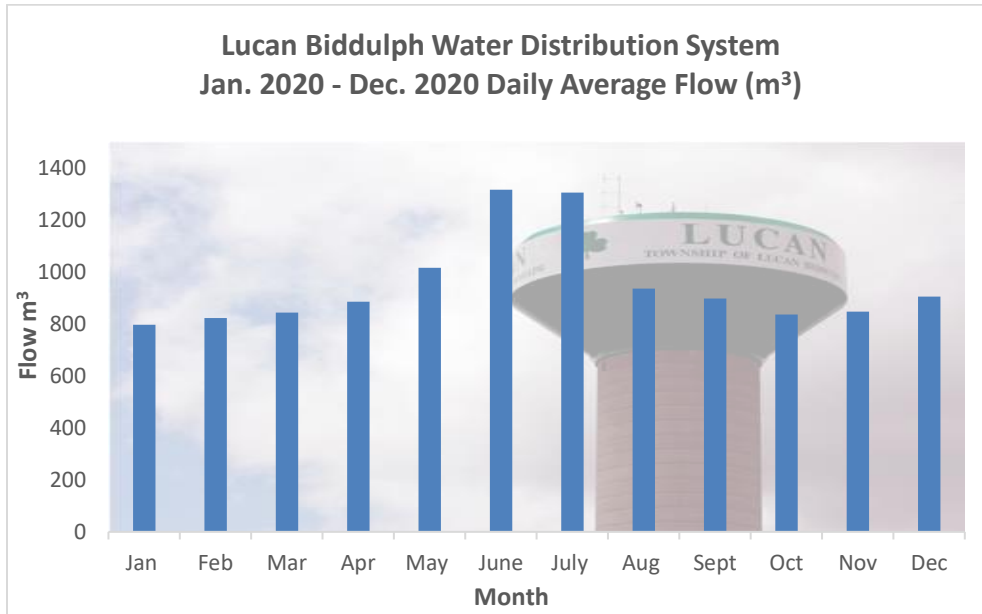
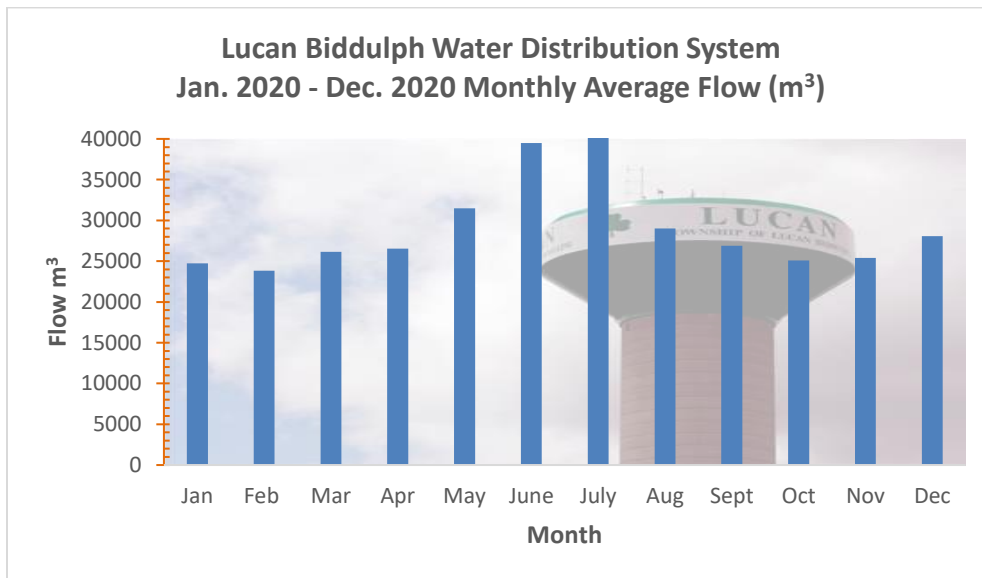


Table 2: Total Monthly Flow in Cubic Meters (m³)



Recommendation

That the Township of Lucan Biddulph accepts the Lucan Biddulph Distribution System Summary and Annual Reports 2020 and that the report will be made available on the Township website.

All of which is respectfully submitted by:



Lucas Egli

Jacobs (OMI Canada Inc.)

Project Manager
Township of Lucan-Biddulph
519 955 2746



2020 ANNUAL REPORT: Township of Lucan Biddulph

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<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;"> <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: <input style="width: 100px;" type="text" value="3"/></p> <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: <input style="width: 100px;" type="text" value="1"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [x] 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
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, boosted via water booster station to a 500,000 gallon elevated tank where it is distributed to approximately 1195 customers at 68 psi. The system also supplies the Village of Granton via 8 km of transmission main, reservoir and pumping station.

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 2020 year, the Township of Lucan Biddulph did not undertake any modifications to its system with the exception of three new sections of watermain.



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	310	0-0,	0-0,	103	<10 to 2000

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	0.21 -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

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		N/A		
Arsenic		N/A		
Barium		N/A		
Boron		N/A		

Cadmium		N/A		
Chromium		N/A		
Haloacetic Acids	Quarterly	19.9	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	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing (Residential)	20	0.07 ug/l – 31.9 ug/l	4
Distribution (Non-Residential)	8	0.09 ug/l – 2.46 ug/l	0

*a total of 5 households + 2 non-residential were tested with 2 tests at each

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

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	34.8	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		



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

Vinyl Chloride		N/A		
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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			