



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Bradley Subdivision Distribution System

2016 ANNUAL/SUMMARY REPORT

Prepared by the Ontario Clean Water Agency
on behalf of the Municipality of Charlton and Dack



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INTRODUCTION

Municipalities throughout Ontario have been required to comply with Ontario Regulation 170/03 made under the Safe Drinking Water Act (SDWA) since June 2003. The Act was enacted following recommendations made by Commissioner O'Conner after the Walkerton Inquiry. The Act's purpose is to protect human health through the control and regulation of drinking water systems. O. Reg. 170/03 regulates drinking water testing, use of licensed laboratories, treatment requirements and reporting requirements.

Section 11 of Regulation 170/03 requires the owner to produce an Annual Report. This report must include the following:

1. Description of system & chemical(s) used
2. Summary of any adverse water quality reports and corrective actions
3. Summary of all required testing
4. Description of any major expenses incurred to install, repair or replace equipment

This annual report must be completed by February 28th of each year.

Schedule 22 of the regulation also requires a Summary Report which must be presented & accepted by Council by March 31st of each year for the preceding calendar year.

The report must list the requirements of the Act, its regulations, the system's Drinking Water Works Permit (DWWP), Municipal Drinking Water Licence (MDWL), Certificate of Approval (if applicable), and any Provincial Officer Order the system failed to meet during the reporting period. The report must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

The Safe Drinking Water Act (2002) and the drinking water regulations can be viewed at the following website: <http://www.e-laws.gov.on.ca>.

To enable the Owner to assess the rated capacity of their system to meet existing and future planned water uses, the following information is also required in the report.

1. A summary of the quantities and flow rates of water supplied during the reporting period, including the monthly average and the maximum daily flows,
2. A comparison of the summary to the rated capacity and flow rates approved in the systems approval, drinking water works permit or municipal drinking water licence or a written agreement if the system is receiving all its water from another system under an agreement.

The reports have been prepared by the Ontario Clean Water Agency (OCWA) on behalf of the Owner and presented to council as the 2016 Annual/Summary Report.



Bradley Subdivision Distribution System

Section 11

2016 ANNUAL REPORT



Section 11 - ANNUAL REPORT

1.0 Introduction

Drinking-Water System Name: BRADLEY SUBDIVISION DISTRIBUTION SYSTEM
Drinking-Water System No.: 260069927
Drinking-Water System Owner: The Corporation of the Municipality of Charlton & Dack
Drinking-Water System Category: Small Municipal, Residential System
Period being reported: January 1, 2016 to December 31, 2016

Does your Drinking Water System serve more than 10,000 people? No

Is your annual report available to the public at no charge on a web site on the Internet? Yes at <http://www.charltonanddack.com/>

Location where Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

Municipality of Charlton & Dack
#287237 Spruce Grove Road
Englehart ON P0J 1H0

Drinking Water Systems that receive drinking water from the Bradley Subdivision Distribution System

The Bradley Subdivision does not provide drinking water to any other system.

The Annual Report was provided to all other Connected Drinking Water System Owners.

The Ontario Clean Water Agency prepared the 2016 Annual/Summary Report for the Bradley Subdivision Distribution System and provided a copy to the system owner; the Municipality of Charlton and Dack as well as to the system's donor; the Town of Englehart.

Notification to system users that the Annual Report is available for viewing is accomplished through:

- A notice which will be posted on Charlton and Dack's Community Bulletin (CJBB radio)
- Discussions during public council meetings.



2.0 Description of Drinking Water System (DWS No. 260069927)

The Bradley Subdivision distribution system was constructed in the early 1980's by a private developer, with ownership later being assumed by the Municipality of Charlton and Dack.

The Bradley Subdivision distribution system amalgamated with the Clarksville Subdivision distribution system in August of 2016. The Clarksville Subdivision distribution system is located in the Municipality of Charlton and Dack, directly adjacent to the northwest boundary of the Town of Englehart. It was constructed in the early 1950's by a private developer and was later owned by each property owner in the subdivision.

The newly amalgamated Bradley Subdivision is a standalone system that joins through a connection at the intersection of Highway 560 and the Old Ferguson Highway and is owned by the Municipality of Charlton and Dack.

The Bradley Subdivision Distribution System is classified as a small municipal residential drinking water system with a total of 49 service connections.

The watermains and appurtenances that comprise this water distribution system are described as follows:

- 6 inch PVC constructed watermain located on the Old Ferguson Highway that connects to the Englehart Well Supply in the vicinity of Fifth Avenue, in front of the Georgia-Pacific Forest Products complex;
- 1½ inch PVC constructed watermain connected to the 6 inch main, extending west along Highway 560 to service the residences in that area
- 2 inch PVC constructed watermain that connects to the 6 inch watermain at Old Ferguson Highway, extending west down Christopher Street and north on Michael Street;
- 2 inch galvanized steel constructed water main that connects to the Englehart Well Supply at the west end of Second Avenue, in the area of the Junction Gas Bar and Restaurant.
- service connections consists of ¾ inch plastic constructed water line.
- a single fire hydrant located at the junction of Old Ferguson Highway and Christopher Street.

The map on page 5 illustrates the newly amalgamated Bradley Subdivision.

Donor System

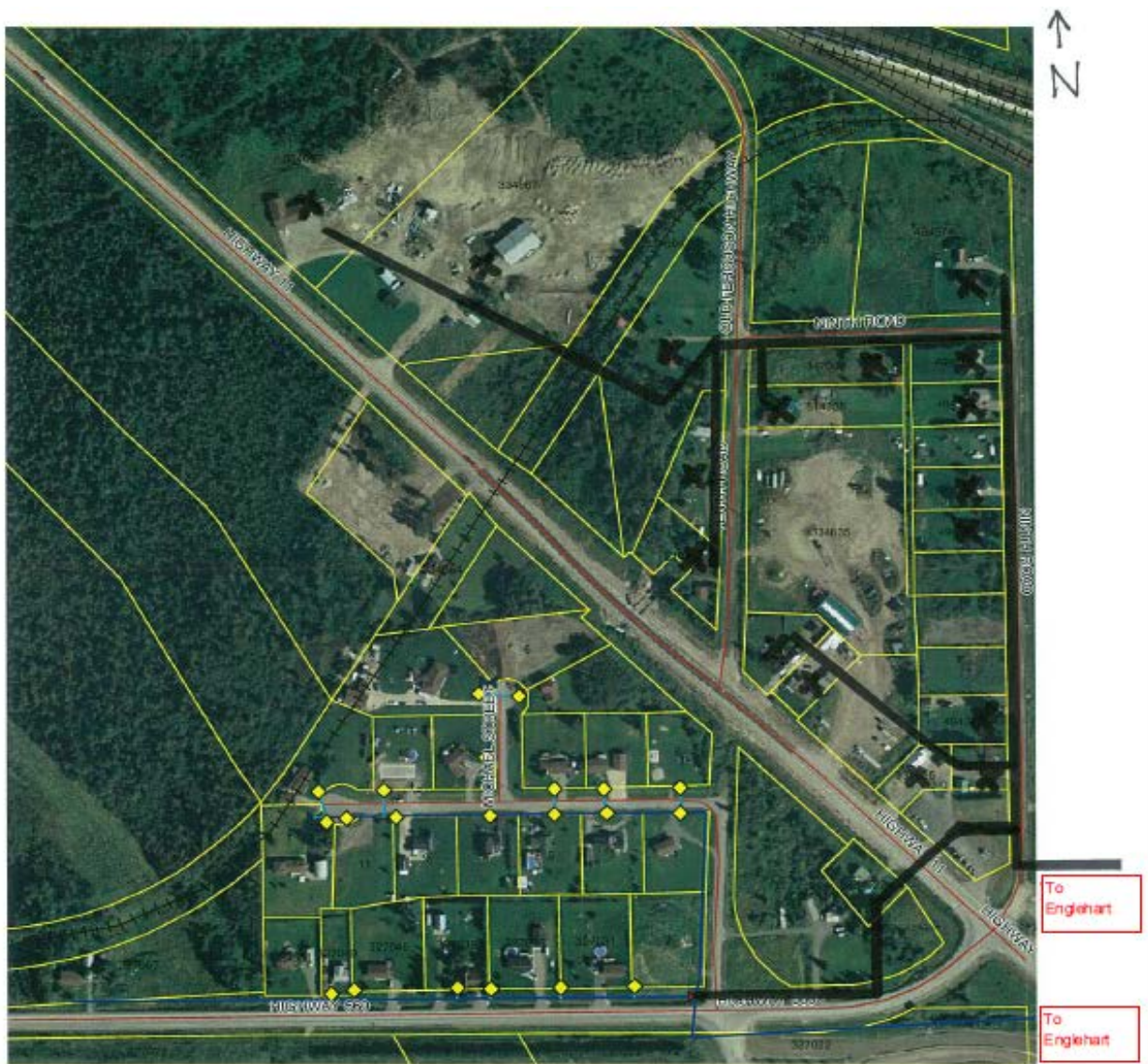
The system connects to and receives all water from the Englehart drinking water system owned by the Corporation of the Town of Englehart (DWS # 220000353). It is a communal ground water well supply that services the Town of Englehart and five neighbouring distribution systems. The Englehart Drinking Water System is operated by the Ontario Clean Water Agency (OCWA). The water treatment facility has a maximum rated capacity of 45.4 liters per second or 2,488

cubic meters per day. It is located on 56 First Street in Evanturel Township in the district of Timiskaming.

The Englehart water system consists of two deep-drilled wells that feed the main treatment building that houses the pressure filtration system, chlorination system, pump station and reservoir. A 150 kW diesel generator is in place and has the capacity to maintain all aspects of the operation during power outages.

More details on the Englehart Drinking Water System are available in the system's 2016 Annual/Summary Report which can be viewed at the Charlton & Dack Municipal Complex or the Englehart Town Office.

Map of the Amalgamated Bradley Subdivision





3.0 List of Chemicals Used Over the Reporting Period

No chemicals are used in the Bradley Subdivision, however sodium hypochlorite is used for primary disinfection and ammonia sulphate is used in the chloramination process at the Englehart Water Treatment Plant.

4.0 Significant Expenses Incurred in the Drinking Water System

There were no significant installations, replacements or repairs conducted in the system during the reporting period.

5.0 Drinking Water System Highlights

- The MOECC performed inspections of the system on January 5, 2016 and December 6, 2016. The system scored a rating of 100 per cent on both inspections having no non-compliance issues identified in the reports.
- SAI Global conducted a re-accreditation (verification) audit of the Charlton Drinking Water System and the Bradley Subdivision Distribution System's Quality and Environmental Management System (QEMS). The systems and processes associated with the QEMS were evaluated on May 31, 2016 to ensure implementation of the Operational Plan and procedures and conformance to the Drinking Water Quality Management Standard. Two (2) minor non-conformances and two (2) opportunities for improvement were identified during the audit and have been resolved. Re-accreditation was achieved on July 14, 2016
- Englehart's Chloramination/ammonation system was granted by the Ministry of the Environment's Approval Branch on May 26th. The system has proven effective in maintaining secondary disinfection and reducing trihalomethane (THM) levels in the Bradley distribution system.
- On August 3, 2016 the MOECC Approvals Branch approved the amalgamation of the Clarksville Subdivision distribution system, a privately owned system, and the Bradley Subdivision distribution system, owned by the Municipality of Charlton and Dack into one system owned by Charlton and Dack. At the same time, an agreement with the Municipality of Charlton and Dack and the Town of Englehart also went into effect which sees the Bradley and Englehart distribution systems as one combined system under O. Reg. 170/03. Starting September 5th, 2016, the "new" Bradley distribution system was sampled as part of the Englehart distribution system except for lead sampling under Schedule 15 of O. Reg. 170/03.

6.0 Details on Notices of Adverse Test Results and Other Problems Reported to & Submitted to the Spills Action Center

Based on information kept on record by OCWA, the Bradley Subdivision distribution system was in full compliance in 2016 with no adverse water quality incidents reported to the MOE's Spills Action Centre.

7.0 Microbiological Testing Performed during the Reporting Period

Summary of Microbiological Data

Sample Type	# of Samples	Range of <i>E. coli</i> Results (min to max)	Range of Total Coliform Results (min to max)	# of HPC Samples	Range of HPC Results (min to max)
Distribution	20	0 to 0	0 to 0	20	<10 to 30

Maximum Allowable Concentration (MAC) for *E. coli* = 0 Counts/100 mL
 MAC for Total Coliforms = 0 Counts/100 mL

Notes: Microbiological samples were collected and tested as described in Schedule 11-2 of Ontario Regulation 170/03. At least one distribution sample was taken every two weeks and tested for *E. coli*, Total Coliforms and general bacteria population expressed as colony counts on a heterotrophic plate count (HPC). As of September 5th, microbiological samples were sampled as part of the Englehart distribution system.

"<" denotes less than the laboratory's method detection limit.

8.0 Operational Testing Performed during the Reporting Period

Summary of Chlorine Residual Data in the Distribution System

Parameter	# of Samples	Range of Results (min to max)	Unit of Measure	Standard
Combined Chlorine Residual	71	0.49 to 1.90	mg/L	0.25

Note: A total of two (2) operational checks for chlorine residual in the distribution system were taken each week. The samples were collected at least 48 hours apart. As of September 5th, combined chlorine residuals were sampled as part of the Englehart distribution system.

Refer to *Appendix A* for a monthly summary of the Microbiological and Chlorine Residual test results.

Summary of Total Trihalomethane Data (sampled in the distribution system)

Date of Sample	Result Value	Unit of Measure	Running Average	Exceedance
January 12	36.8	ug/L	39.0	No
April 11	49.1			
July 11	31.1			
October	see note			

Maximum Allowable Concentration (MAC) for Total Trihalomethanes = 100 ug/L (Four Quarter Running Average)



Note: An agreement with Municipality of Charlton and Dack and the Town of Englehart went into effect In August 2016 which sees the Bradley and Englehart distribution systems as one combined system. Starting on September 5th, THMs were sampled as part of the Englehart distribution system.

Summary of Most Recent Lead Data

(applicable to the following drinking water systems; large municipal residential systems, small, municipal residential systems, and non-municipal year-round residential systems)

The Bradley Subdivision Distribution System was eligible to follow the “Exemption from Plumbing Sampling” as described in section 15.1-5(9) and 15.1-5(10) of Schedule 15.1 of Ontario Regulation 170/03. The exemption applies to a drinking water system if, in two consecutive periods at reduced sampling, not more than 10% of all samples from plumbing exceed the maximum allowable concentration (MAC) of 10 ug/L for lead. As such, the system was required to test for total alkalinity and pH in one distribution sample collected during the periods of December 15 to April 15 (winter period) and June 15 to October 15 (summer period). This testing is required in every 12-month period with lead testing in every third 12-month period.

Two rounds of alkalinity and pH testing were carried out on April 11th and October 4th of 2016. Results are summarized in the table below.

Summary of pH & Alkalinity Data (sampled in the distribution system)

Date of Sample	# of Samples	Field pH	Field Temperature (°C)	Alkalinity (mg/L)
April 11	1	7.98	4.8	232
October 4	1	7.11	11.5	238

Inorganic or Organic Test Results that Exceeded Half the Standard Prescribed in Schedule 2 of the Ontario Drinking Water Quality Standards.

This section is not applicable to the Bradley Subdivision Distribution System. Inorganic (Schedule 24) and Organic (Schedule 23) parameters are tested on treated water entering a distribution system.

Summary of Additional Testing Performed in Accordance with a Legal Instrument.

The Englehart drinking water system provides potable water to the Bradley Subdivision distribution system. On April 8, 2015, the Englehart system was approved to undertake a one-year trial pilot project which involved the implementation of a chloramination/ammoniation process as secondary disinfection and to help reduce THM concentrations in the Englehart distribution system and connected distribution systems.

Additional weekly sampling and testing for monochloramines in the Bradley Subdivision was a requirement of the donor’s system Drinking Water Works Permit (DWWP 209-201 Schedule C



Issue-1). Sampling for free ammonia was also done. A summary of the results are presented below.

Permanent implementation of chloramination/ammoniation system was approved by the Ministry of the Environment's Approval Branch on May 26th. After this date, sampling for monochloramines were no longer a requirement.

Summary of Monochloramine & Free Ammonia Data (sampled as part of the chloramination trial)

Sample Type	# of Monochloramine Samples	Range of Monochloramine Results (min to max)	# of Free Ammonia Samples	Range of Free Ammonia Results (min to max)
Distribution	23	0.72 to 1.67	23	0.03 to 0.30



Bradley Subdivision Distribution System

Schedule 22

2016 SUMMARY REPORT

FOR MUNICIPALITIES



Schedule 22 - SUMMARY REPORTS FOR MUNICIPALITIES

1.0 Introduction

Drinking-Water System Name:	BRADLEY SUBDIVISION DISTRIBUTION SYSTEM
Municipal Drinking Water Licence (MDWL) No.:	271-102-2 (issued February 16, 2016)
Drinking Water Work Permit (DWWP) No.:	271-202-2 (issued February 8, 2016)
Period being reported:	January 1, 2016 to December 31, 2016

2.0 Requirements the System Failed to Meet

According to information kept on record by OCWA, the Bradley Subdivision Distribution System has complied with all the requirements set out in the system's MDWL, its DWWP, the Act and its Regulations.

3.0 Summary of Quantities and Flow Rates

The water volumes and flow rates supplied to the Bradley Subdivision Distribution System are unknown. The Bradley Subdivision Distribution System is connected to and receives all water from the Englehart Drinking Water System.

Further details on the Englehart Drinking Water System are available in the 2016 Annual/Summary Report which can be viewed at the Charlton & Dack Municipal Complex or the Englehart Municipal Office.

CONCLUSION

The Bradley Subdivision Distribution System complied with the regulatory requirements of the Safe Drinking Water Act and its Regulations and met the terms and conditions outlined in its site specific licence and permit having no incidents of non-compliance during the reporting period.



APPENDIX A

Monthly Summary of Microbiological and
Chlorine Residual Results

**BRADLEY SUBDIVISION DISTRIBUTION SYSTEM
MONTHLYSUMMARY REPORT**

Facility Org Number: 5049A
Facility Works Number: 260069927
Facility Name: BRADLEY SUBDIVISION DISTRIBUTION SYSTEM
Facility Owner: Municipality: Municipality of Charlton and Dack
Facility Classification: N/A
From: 01/01/2016 to 04/09/2016

	01/2016	02/2016	03/2016	04/2016	05/2016	06/2016	07/2016	08/2016	09/2016	Total	Avg	Max	Min
Distribution Water / Cl Residual: Combined - mg/L													
Count IH	8	9	9	9	9	9	8	9	1	71			
Max IH	1.73	1.65	1.60	1.74	1.60	1.90	1.89	1.65	1.48			1.90	
Mean IH	1.55	1.28	1.43	1.34	1.28	1.27	1.54	1.45	1.48		1.39		
Min IH	1.42	0.49	0.91	0.69	0.65	0.57	1.26	0.80	1.48				0.49
Distribution Water / E. Coli - cfu/100mL													
Count Lab	2	3	4	2	2	2	2	3	0	20			
Max Lab	0	0	0	0	0	0	0	0				0	
Mean Lab	0	0	0	0	0	0	0	0			0		
Min Lab	0	0	0	0	0	0	0	0					0
Distribution Water / Total Coliform: TC - cfu/100mL													
Count Lab	2	3	4	2	2	2	2	3	0	20			
Max Lab	0	0	0	0	0	0	0	0				0	
Mean Lab	0	0	0	0	0	0	0	0			0		
Min Lab	0	0	0	0	0	0	0	0					0
Distribution Water / HPC - cfu/mL													
Count Lab	2	3	4	2	2	2	2	3	0	20			
Max Lab	< 10	< 10	< 10	< 10	< 10	< 10	< 10	30				30	
Mean Lab	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 16.7			< 11		
Min Lab	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					< 10