Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Bradley Subdivision Distribution System

2015 Annual/Summary Report

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

TABLE OF CONTENTS

LIST OF APPENDICES

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.

Section 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 2015 Annual/Summary Report.

Bradley Subdivision Distribution System

Section 11

2015 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, 2015 to December 31, 2015

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 www.charltonand dack.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 not provided to any other Drinking Water System owners.

The Ontario Clean Water Agency prepared the 2015 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 will be posted on Charlton and Dack's Community Bulletin (CJBB radio) and through public council meetings.

2.0 DESCRIPTION OF THE DRINKING WATER SYSTEM

The Bradley Subdivision distribution system is a standalone system that consists of approximately 1370 meters of distribution water mains. It was constructed in the early 1980's by a private developer, but is currently owned by the Corporation of the Municipality of Charlton and Dack. The Ontario Clean Water Agency (OCWA) assumed operational responsibility on March 23, 2010.

Based on the number of residential service connections (17), the Bradley Subdivision Distribution System is classified as a small municipal residential drinking water system.

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

- 6 inch PVC constructed water main located on the Old Ferguson Highway that connects to the Englehart Well Supply in the vicinity of Fifth Avenue, in front of the Grant Forest Products complex;

- 1½ inch PVC constructed water main connected to the 6 inch main, extending west along Highway 560 to service the residences in that area;

- 2 inch PVC constructed water main that connects to the 6 inch water main at Old Ferguson Highway, extending west down Christopher Street and north on Michael Street;

- a single fire hydrant located at the junction of Old Ferguson Highway and Christopher Street;

The system connects to and receives all water from the drinking water system owned by the Town of Englehart (Drinking Water System DWS # 220000353). It is a communal ground water well supply that services the Town of Englehart and six (6) neighbouring distribution systems. The Englehart drinking water system is operated by the Ontario Clean Water Agency with help from the Town of Englehart's Public Works department. 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 for primary disinfection, chloramination system for secondary disinfection, pump station and reservoir. A newly installed 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 2015 Annual/Summary Report which can be viewed at the Charlton & Dack Municipal Complex or the Englehart Town Office.

3.0 LIST OF WATER TREATMENT 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 for secondary disinfection 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 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, One (1) adverse water quality incident Was reported to the MOE's Spills Action Centre.

AWQI #	122263
Parameter	Total Trihalomethanes (TTHMs)
Sample Date/Location	January 8, 2015 at 1415 hours at 12 Christopher Street
Result	123 ug/L (single sample result); 123.9 ug/L (running average)
Maximum Allowable Limit	100 ug/L (running annual average)
Corrective Actions	The exceedance was reported to the MOE's Spills Action Centre and the Timiskaming Health Unit on January 13th. A re-sample was collected on January 14th at 12 Christopher Street (result = 102 ug/L). The local health unit was notified of the result and no further instructions were provided. The issue was resolved on January 20, 2015.

6.0 MICROBIOLOGICAL TESTING PERFORMED DURING THE REPORTING PERIOD

Summary of Microbiological Data

Sample Type	# of Samples	Range of *E. coli* Results *(min to max)*	Range of Total Coliform Results *(min to max)*	# of HPC Samples	Range of HPC Results *(min to max)*
Distribution	26	0 to 0	0 to 0	26	<10 to 10

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

Note: Bacteriological samples are 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).

Refer to *Appendix A* for a monthly summary of microbiological test results.

7.0 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
Free Chlorine Residual	28	0.120 to 0.840	mg/L	<0.05
Combined Chlorine Residual	77	0.73 to 1.97	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.

Refer to *Appendix B* for a monthly summary of chlorine residuals data.

Summary of Total Trihalomethane Data

Date of Sample	Result Value	Unit of Measure	Running Average	Exceedance
January 8	123	ug/L	58.1	No
January 14 (resample)	102			
April 13	40.2			
July 13	31.7			
October 5	37.3			

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

Note: Results from re-samples taken specifically for corrective action purposes are not used to calculate the running annual average and are not used to determine routine compliance to the Ontario Drinking Water Quality Standard

A chloramination/ammoniation process was implemented at the Englehart water plant (donor system) on April 8, 2015. Chloramination is effective in maintaining a long-lasting disinfection residual and does not lead to TTHM formation. This process has proven to be very successful in reducing high TTHM levels in the 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 13th and October 6th of 2015. Results are summarized in the table below.

Summary of pH & Alkalinity Data

Date of Sample	# of Samples	Field pH Results	Field Temperature (°C)	Alkalinity Results (mg/L)
April 13	1	7.00	6.4	232
October 6	1	7.61	10.1	232

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. A new chloramination/ ammoniation process was implemented at the Englehart water treatment plant on April 8, 2015. Additional sampling and testing for monochloramines in the Bradley Subdivision is a requirement of the donor's system Drinking Water Works Permit (DWWP 209-201 Schedule C Issue-1). Samples are also collected and tested for free ammonia. Sampling is conducted weekly and a summary of the results are presented below.

Summary of Monochloramine & Free Ammonia Data

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	36	0.28 to 1.96	35	0.06 to 0.28

Bradley Subdivision Distribution System

Schedule 22

2015 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 (issued March 11, 2011)
Drinking Water Work Permit (DWWP) No.:	271-202 (issued March 3, 2011)
Period being reported:	January 1, 2015 to December 31, 2015

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.

However, it should be noted that, one (1) water sample result exceeded the Total Trihalomethane (TTHM) maximum allowable concentration of the Ontario Drinking Water Quality Standard during the reporting period. Refer to Section 5.0 - DETAILS ON NOTICES OF ADVERSE TEST RESULTS AND OTHER PROBLEMS REPORTED TO & SUBMITTED TO THE SPILLS ACTION CENTER on page 5 of this report for details.

3.0 SUMMARY OF QUANTITIES & 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 2015 Annual/Summary Report which can be viewed at the Charlton & Dack Municipal Complex or the Englehart Town Office.

4.0 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.

One (1) adverse Total Trihalomethane results was reported to the MOE's Spills Action Centre in January 2015. Elevated TTHMs were an ongoing issue in the distribution system and in response to these elevated results, the MOECC's Approvals and Licencing Department

approved a process change in the donor's treatment system. Chloramination was implemented at the Englehart water plant on April 8th, 2015 which has successfully reduced the TTHM levels in the Bradley distribution system.

APPENDIX A

Monthly Summary of Microbiological Test Results

MONTHLY MICROBIOLOGICAL 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:
Service Population: 100
From: 01/01/2015 to 31/12/2015

	01/2015	02/2015	03/2015	04/2015	05/2015	06/2015	07/2015	08/2015	09/2015	10/2015	11/2015	12/2015	Total	Avg	Max	Min
E. Coli - cfu/100mL																
Count Lab	2	2	3	2	2	2	2	3	2	2	2	2	26			
Max Lab	0	0	0	0	0	0	0	< 0	< 0	< 0	< 0	< 0			0	
Mean Lab	0	0	0	0	0	0	0	< 0	< 0	< 0	< 0	< 0		0		
Min Lab	0	0	0	0	0	0	0	< 0	< 0	< 0	< 0	< 0				0
Total Coliform: TC - cfu/100mL																
Count Lab	2	2	3	2	2	2	2	3	2	2	2	2	26			
Max Lab	0	0	0	0	0	0	0	< 0	< 0	< 0	< 0	< 0			0	
Mean Lab	0	0	0	0	0	0	0	< 0	< 0	< 0	< 0	< 0		0		
Min Lab	0	0	0	0	0	0	0	< 0	< 0	< 0	< 0	< 0				0
HPC - cfu/mL																
Count Lab	2	2	3	2	2	2	2	3	2	2	2	2	26			
Max Lab	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	10	10	< 10	< 10			10	
Mean Lab	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		< 10		
Min Lab	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10				< 10

APPENDIX B

Monthly Summary of Chlorine Residual Data

MONTHLY PROCESS DATA 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:
Service Population: 100
From: 01/01/2015 to 31/12/2015

	01/2015	02/2015	03/2015	04/2015	05/2015	06/2015	07/2015	08/2015	09/2015	10/2015	11/2015	12/2015	Total	Avg	Max	Min
Cl Residual: Free - mg/L																
Count IH	9	8	9	2	0	0	0	0	0	0	0	0	28			
Max IH	0.84	0.74	0.63	0.75											0.84	
Mean IH	0.468	0.444	0.422	0.705										0.463		
Min IH	0.34	0.12	0.23	0.66												0.12
Cl Residual: Combined - mg/L																
Count IH	0	0	0	7	8	9	9	9	8	9	9	9	77			
Max IH				1.72	1.79	1.88	1.97	1.71	1.88	1.58	1.86	1.78			1.97	
Mean IH				1.29	1.53	1.59	1.55	1.48	1.46	1.30	1.59	1.40		1.468		
Min IH				0.78	0.8	1.11	0.89	0.91	1.14	0.94	1.37	0.73				0.73

Note: A chloramination/ammoniation process was implemented at the Englehart water plant (donor system) on April 8, 2015. From January 1st to April 8th free chlorine residuals were collected and tested in the distribution system. From April 9th to December 31st combined chlorine residuals were collected and tested in the distribution system.