

BALA

WATER

2014

ANNUAL AND SUMMARY

REPORT



DRINKING WATER WORKS PERMIT: 143-201
MUNICIPAL DRINKING WATER LICENCE: 143-101

M.O.E. WATERWORKS#: 220001888

INTRODUCTION

The Minto Street Water Treatment Plant (WTP) is owned and operated by the District Municipality of Muskoka.

The plant operates under licence 143-101 and permit 143-201, issued October 2010, under the Municipal Drinking Water Licensing Program. The plant also presently operates under new Permit To Take Water (PTW), #7701-97GFKM, is valid until April 20, 2023. The PTW allows water to be withdrawn from Lake Muskoka at a rate up to 2,000 cubic metres per day (m³/d). The Raw Water intake structure is located in Weismiller Bay on Lake Muskoka and is approximately 18 meters deep and about 500 meters from shore.

The Minto Street Water Treatment Plant began treating and supplying water to the Town of Bala on September 1, 1994, and has an initial design capacity of 1,942 m³/d. At design capacity, the plant is capable of servicing a population of 1,725 people. The water system currently serves a population of approximately 1,000 persons.

The plant process is a conventional filtration plant, with supplementary pH adjustment. The facility includes an intake crib, 400 mm intake pipe, fixed screen, and a low lift pumping station with three submersible pumps located on Currie Street. The treatment plant consists of two treatment process trains (each consisting of one lime mixing tank, one carbon dioxide mixing tank, one coagulant flash mixing tank, three flocculation tanks, one settling tank, and one dual media filter). Also located at the treatment plant are 2 backwash holding tanks, one clearwell, 3 high lift pumps, 2 backwash pumps, chemical storage, preparation, and feed equipment. Chemical treatment consists of sodium hypochlorite, (pre and post) sodium hydroxide (pH control), polyaluminum chloride (coagulation), and hydrated lime / carbon dioxide (corrosion control). The plant also has the facilities to accommodate fluoridation, which was implemented in August 2007.

Legislation Requirements

Safe Drinking Water Act

In the Part Two Report of the Walkerton Inquiry, Commissioner Dennis O'Connor recommended that the Ontario Government enact a Safe Drinking Water Act to deal with matters related to treatment and distribution of drinking water. The Safe Drinking Water Act received royal assent in December, 2002.

The purpose of the Act is to gather in one place all legislation and regulations relating to the treatment and distribution of drinking water. The Act serves to protect human health through the control and regulation of drinking water systems and drinking water testing.

The foundation provisions of the Safe Drinking Water Act include:

- Purpose of the Act
- Definitions
- Minister's Powers and Duties
- Inspections
- Compliance and Enforcement
- Appeals and Offences

Ontario Regulations

The Ontario Government has enacted several supporting regulations under the Safe Drinking Water Act (2000) SDWA. These regulations combine previous requirements under the Ontario Water Resources Act and the new requirements under the SDWA. Key components of the regulations include:

- System Categories
- Groundwater Under Direct Influence Of Surface Water (GUDI)
- Exemptions
- Approval of Systems
- Treatment
- Testing and Operational Checks (General Rules)
- Operational Checks
- Microbiological Testing
- Chemical Testing
- Adverse Conditions
- Corrective Action
- Engineer's and Summary Reports

Municipal Drinking Water Licenses / Certificates of Approval

The Municipal Drinking Water Licensing Program has replaced the Certificate of Approval program for municipal residential drinking water systems. The Ontario Government has implemented the Municipal Drinking Water Licensing Program (MDWLP) as recommended by Justice O'Connor in the Part II Report of the Walkerton Inquiry. Justice O'Connor recommended a new approvals framework for municipal drinking water systems, which would require owners to obtain a license to operate their systems as well as incorporate the concept of quality management into their operations.

A municipal drinking water license is an approval that is issued by the MOE to owners under the Safe Drinking Water Act, 2002 for the operation of municipal residential drinking water systems. The District of Muskoka operated under various Certificates of Approval until October 2010 when the operating licenses were issued.

Previous Certificates of Approval were required for the establishment, replacement or alteration of all municipal drinking water systems. The Ministry of Environment (MOE) issued Certificates of Approval to ensure that all undertakings comply with the legislation (i.e. Acts and Regulations) and the Ministry's Environmental Guidelines and Procedures developed to provide consistency of approach to various aspects of environmental protection throughout the province.

Municipal Drinking Water Licenses and Permits similar to previous Certificates of Approval provide specific details about the drinking water system including:

Drinking Water System Description

Definitions and Information

General Information – Compliance, Other Legal Requirements, Adverse Affects, Inspections

Performance – Rated Capacity, Management of Residue

Monitoring and Recording – Flow Measuring Devices, Sampling

Operations and Maintenance

Comparison to Rated Capacity and Flow Rate

The Minto Street water treatment plant has a rated capacity of 1,942 m³/day. In 2014, the total monthly average flow for the year was 391 m³/day. The maximum day flow for the year was 872 m³/day, however the 3-year average for maximum day flow is 965 m³/day, which represents 50% of the plant design capacity. (No problems have been associated with this flow).

Monthly flows are shown in the attached table.

The Permit to Take Water (PTTW #7701-97GFKM) permits 2,000 m³/day; therefore there were no exceedances of this permit.

Summary of Analytical Results

A total of 688 microbiological regulatory tests were performed in 2014 and compliance with Provincial standards was achieved throughout with two exceptions.

On July 7 a routine distribution microbiological sample indicated a positive Total Coliform count of 1 CFU (colony forming units) per 100ml and on December 31, a routine distribution microbiological sample taken from a different location indicated a positive Total Coliform count of 3 CFU per 100ml. On both occasions resamples were collected immediately and neither test result was repeatable. Regulatory reporting protocols were followed and all resample results were satisfactory.

There were 169 free chlorine residual tests performed in the distribution system and all results were satisfactory.

A summary of other analytical results is also shown in this report.

Summary of Treatment Chemicals

The following chemicals are used for the treatment of drinking water at the Minto Street Water Treatment Plant:

Potassium Permanganate: Manganese Control

Sodium Hypochlorite: Disinfectant

Polyaluminum Chloride (Stern PAC): Primary Coagulant

Hydrated Lime: Alkalinity and pH adjustment

Carbon Dioxide: pH adjustment

Sodium Hydroxide: Final pH adjustment

Hydrofluorosilicic Acid: Fluoride to prevent tooth decay

A chart summarizing the chemical use and average dosages is included in this report.

Documentation of System Repairs and Upgrades

No significant capital expenses were incurred to conduct system repairs or upgrades in 2014.

OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number:	220001888
Drinking-Water System Name:	Minto Water Treatment Plant
Drinking-Water System Owner:	District Municipality of Muskoka
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 01 to December 31, 2014

<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;"> District Municipality of Muskoka 70 Pine Street Bracebridge, Ontario P1L 1N3 (705) 645-6764 www.muskoka.on.ca </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <div style="border: 1px solid black; padding: 2px; width: 100px; text-align: center;">N.A.</div> </p> <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; padding: 2px; width: 100px; text-align: center;">N.A.</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>
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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
N.A.	

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 water treatment plant serving the community of Bala was constructed in 1994. The treatment process consists of chemically assisted coagulation-flocculation, sedimentation and filtration using multi-media filters with a combination of gravel, sand and anthracite coal. Disinfection in a post-treatment chlorine contact chamber is followed by final pH adjustment and fluoridation before the treated water is pumped to our customers. Our waterworks currently serves a population of approximately 1000 persons. The rated water production capacity of the plant is 1942 cubic meters per day. Our raw water source is Lake Muskoka. Our intake is located two meters above the lakebed at a depth of 18 meters and about 500 meters from shore.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite, Polyaluminum Chloride, Sodium Hydroxide, Carbon Dioxide, Hydrated Lime, Potassium Permanganate, Fluoride.

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

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
17/07/14	Total Coliform	1	#/100 ml	Resample	17/07/14
31/12/14	Total Coliform	3	#/100 ml	Resample	31/12/14

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	52	0 - 27	0 - 114	0	NA
Treated	52	0 - 0	0 - 0	52	0 - 2
Distribution	162	0 - 0	0 - 3	104	0 - 34

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 #)	Geometric Average
Turbidity	8760	0.03 - 0.09 NTU	0.04 NTU
Chlorine	8760	0.80 - 1.59	1.19
Fluoride (If the DWS provides fluoridation)	8760	0.32 - 0.81	0.58

NOTE: For continuous monitors use 8760 as the number of samples.

NOTE: Record the unit of measure if it is **not** milligrams per litre.
MDL = Method Detection Limit

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	May 13/14	0.02<MDL	µg/L	No
Arsenic	May 13/14	0.3	µg/L	No
Barium	May 13/14	11.8	µg/L	No
Boron	May 13/14	4.9	µg/L	No
Cadmium	May 13/14	0.003	µg/L	No
Chromium	May 13/14	0.60	µg/L	No
*Lead	May 13/14	0.04	µg/L	No
Mercury	May 13/14	0.01<MDL	µg/L	No
Selenium	May 13/14	1<MDL	µg/L	No
Sodium	May 13/14	10.3	mg/L	No
Uranium	May 13/14	0.002<MDL	µg/L	No
Fluoride	May 13/14	0.63	mg/L	No
Nitrite	Feb 11/14	0.003<MDL	mg/L	No
Nitrate	Feb 11/14	0.174	mg/L	No

Nitrite	May 13/14	0.003<MDL	mg/L	No
Nitrate	May 13/14	0.195	mg/L	No
Nitrite	Aug 12/14	0.003<MDL	mg/L	No
Nitrate	Aug 12/14	0.124	mg/L	No
Nitrite	Nov 18/14	0.003<MDL	mg/L	No
Nitrate	Nov 18/14	0.152	mg/L	No

*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 #)	Unit of Measure	Number of Exceedances
Plumbing	0	N.A.	N.A.	N.A.
Distribution	1	0.04	µg/L	No

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	May 13/14	0.02<MDL	µg/L	No
Aldicarb	May 13/14	0.01<MDL	µg/L	No
Aldrin + Dieldrin	May 13/14	0.01<MDL	µg/L	No
Atrazine + N-dealkylated metabolites	May 13/14	0.01<MDL	µg/L	No
Azinphos-methyl	May 13/14	0.02<MDL	µg/L	No
Bendiocarb	May 13/14	0.01<MDL	µg/L	No
Benzene	May 13/14	0.32<MDL	µg/L	No
Benzo(a)pyrene	May 13/14	0.004<MDL	µg/L	No
Bromoxynil	May 13/14	0.33<MDL	µg/L	No
Carbaryl	May 13/14	0.01<MDL	µg/L	No
Carbofuran	May 13/14	0.01<MDL	µg/L	No
Carbon Tetrachloride	May 13/14	0.16<MDL	µg/L	No
Chlordane (Total)	May 13/14	0.01<MDL	µg/L	No
Chlorpyrifos	May 13/14	0.02<MDL	µg/L	No
Cyanazine	May 13/14	0.03<MDL	µg/L	No
Diazinon	May 13/14	0.02<MDL	µg/L	No
Dicamba	May 13/14	0.20<MDL	µg/L	No
1,2-Dichlorobenzene	May 13/14	0.41<MDL	µg/L	No
1,4-Dichlorobenzene	May 13/14	0.36<MDL	µg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	May 13/14	0.01<MDL	µg/L	No
1,2-Dichloroethane	May 13/14	0.35<MDL	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	May 13/14	0.33<MDL	µg/L	No
Dichloromethane	May 13/14	0.35<MDL	µg/L	No

2-4 Dichlorophenol	May 13/14	0.15<MDL	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	May 13/14	0.19<MDL	µg/L	No
Diclofop-methyl	May 13/14	0.40<MDL	µg/L	No
Dimethoate	May 13/14	0.03<MDL	µg/L	No
Dinoseb	May 13/14	0.36<MDL	µg/L	No
Diquat	May 13/14	1<MDL	µg/L	No
Diuron	May 13/14	0.03<MDL	µg/L	No
Glyphosate	May 13/14	1<MDL	µg/L	No
Heptachlor + Heptachlor Epoxide	May 13/14	0.01<MDL	µg/L	No
Lindane (Total)	May 13/14	0.01<MDL	µg/L	No
Malathion	May 13/14	0.02<MDL	µg/L	No
Methoxychlor	May 13/14	0.01<MDL	µg/L	No
Metolachlor	May 13/14	0.01<MDL	µg/L	No
Metribuzin	May 13/14	0.02<MDL	µg/L	No
Monochlorobenzene	May 13/14	0.30<MDL	µg/L	No
Paraquat	May 13/14	1<MDL	µg/L	No
Parathion	May 13/14	0.02<MDL	µg/L	No
Pentachlorophenol	May 13/14	0.15<MDL	µg/L	No
Phorate	May 13/14	0.01<MDL	µg/L	No
Picloram	May 13/14	1<MDL	µg/L	No
Polychlorinated Biphenyls(PCB)	May 13/14	0.04<MDL	µg/L	No
Prometryne	May 13/14	0.03<MDL	µg/L	No
Simazine	May 13/14	0.01<MDL	µg/L	No
THM (NOTE: Annual average of 4 samples – Distribution system)	Samples Taken: Feb 11/14 May 13/14 Aug 12/14 Nov 18/14	66	µg/L	No
Temphos	May 13/14	0.01<MDL	µg/L	No
Terbufos	May 13/14	0.01<MDL	µg/L	No
Tetrachloroethylene	May 13/14	0.35<MDL	µg/L	No
2,3,4,6-Tetrachlorophenol	May 13/14	0.14<MDL	µg/L	No
Triallate	May 13/14	0.01<MDL	µg/L	No
Trichloroethylene	May 13/14	0.44<MDL	µg/L	No
2,4,6-Trichlorophenol	May 13/14	0.25<MDL	µg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	May 13/14	0.22<MDL	µg/L	No
Trifluralin	May 13/14	0.02<MDL	µg/L	No
Vinyl Chloride	May 13/14	0.17<MDL	µg/L	No

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.			
N.A.			

District of Muskoka - Minto St. WTP - Bala

1.0 Water Flow Summary - 2014

Month	Total Monthly (m ³)	Average Day Flow (m ³ /d)	Maximum Day Flow (m ³ /d)	Minimum Day Flow (m ³ /d)	Comments
January	11,976	386	860	0	
February	10,068	360	845	0	
March	12,237	395	867	0	
April	10,761	359	782	0	
May	12,956	418	872	0	
June	14,151	472	860	30	
July	14,122	456	845	13	
August	16,056	518	848	109	
September	11,275	376	734	7	
October	11,308	365	837	0	
November	9,776	326	791	0	
December	9,056	292	849	0	

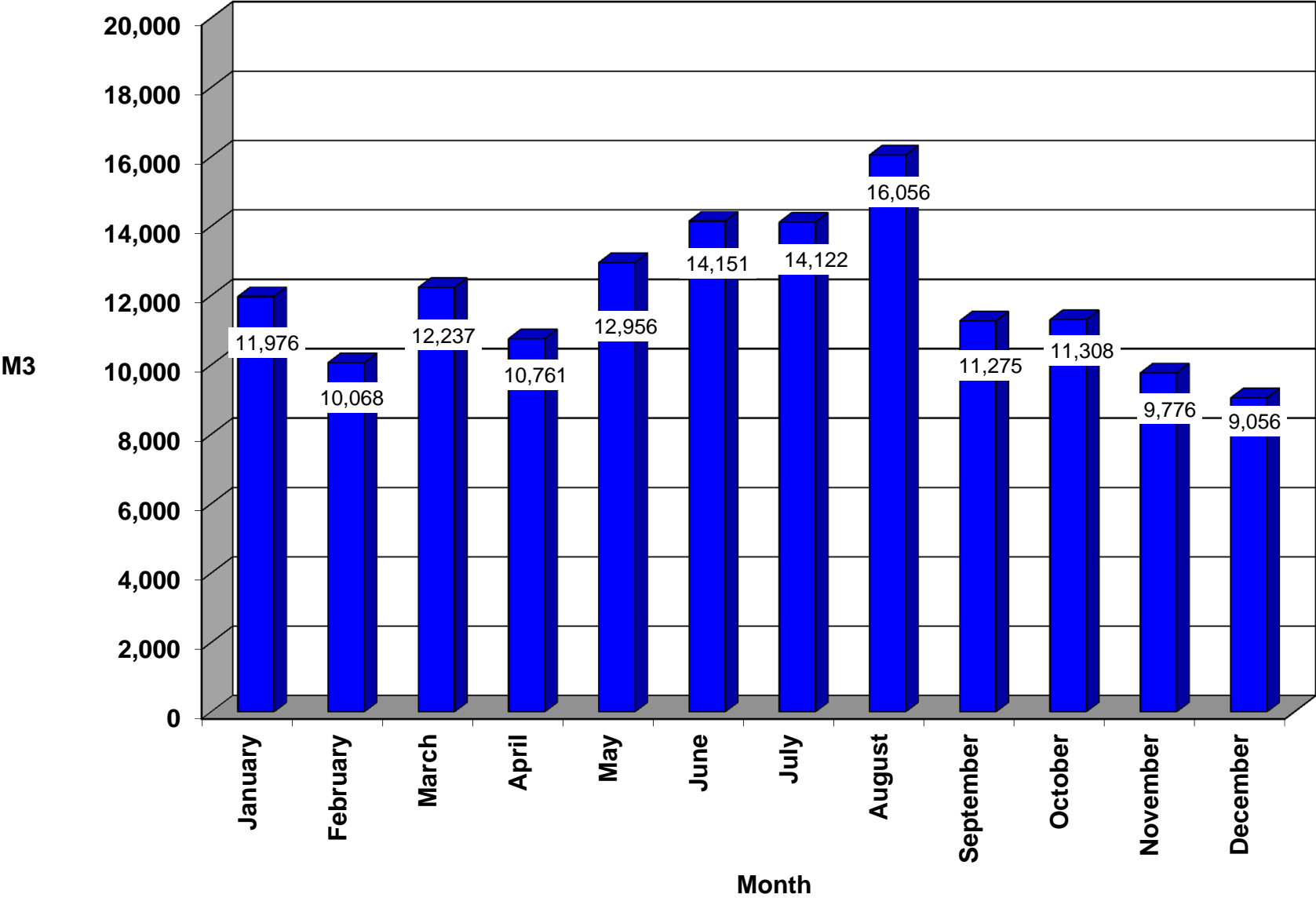
Total 143,741

Average Day 391

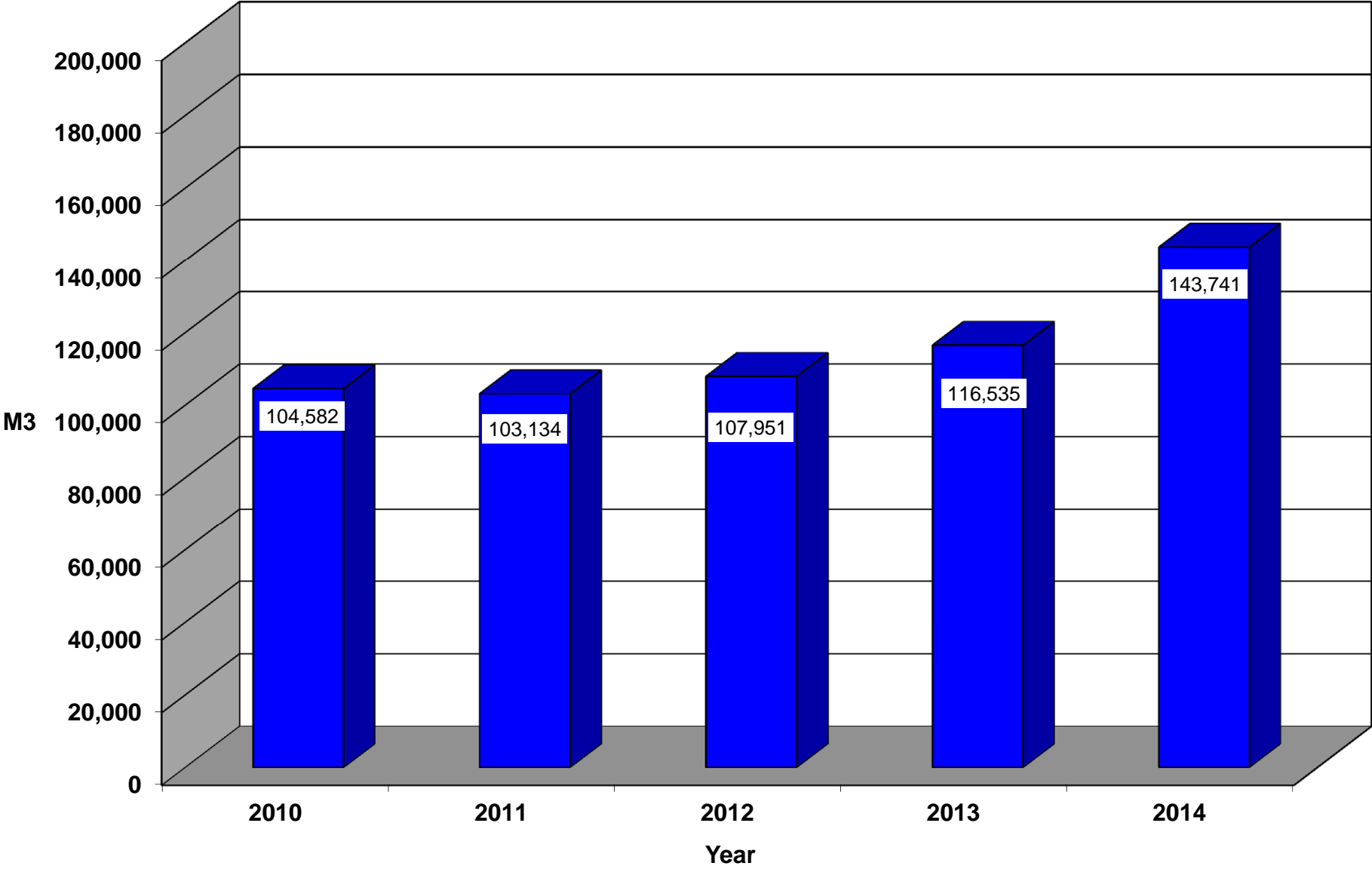
Maximum Day 872

Minimum Day 0

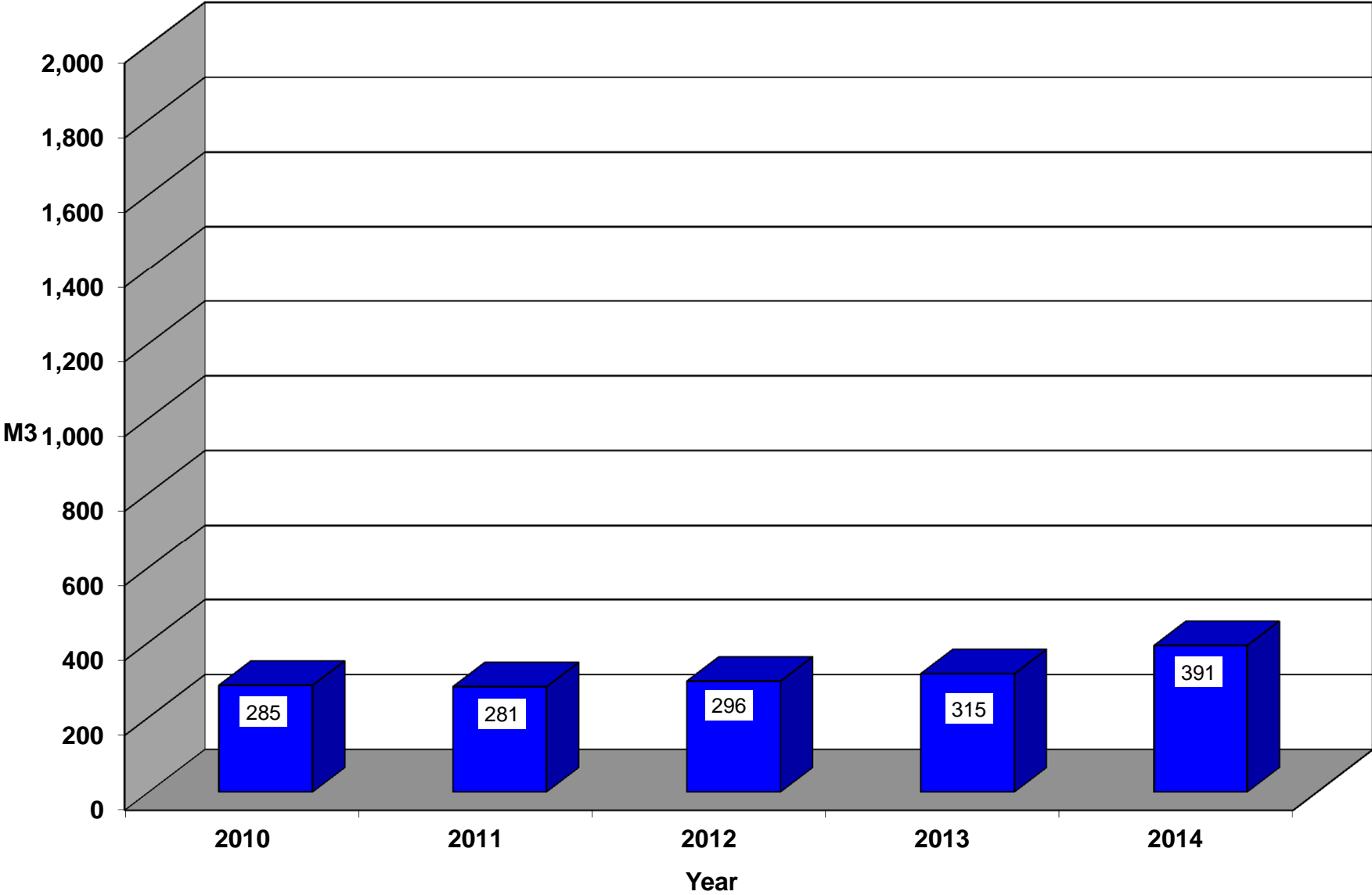
District Municipality of Muskoka
Bala - Minto Street Water Treatment Plant
Monthly Water Production - 2014



District Municipality of Muskoka
Bala - Minto Street Water Treatment Plant
Total Water Production 2010 - 2014



**District Municipality of Muskoka
Bala - Minto Street Water Treatment Plant
Average Day Flow 2010- 2014**



**Bala Water System
Summary of Microbiological Raw Analysis - 2014**

Month	Total Coliforms Total for 2014	E. Coli Total for 2014	HPC Total for 2014	Adverse Total for 2014
January	4	4	0	0
February	4	4	0	0
March	4	4	0	0
April	4	4	0	0
May	5	5	0	0
June	4	4	0	0
July	5	5	0	0
August	4	4	0	0
September	5	5	0	0
October	4	4	0	0
November	4	4	0	0
December	5	5	0	0

**Bala Water System
Summary of Microbiological Treated Water Analysis - 2014**

Month	Total Coliforms Total for 2014	E. Coli Total for 2014	HPC Total for 2014	Adverse Total for 2014
January	4	4	4	0
February	4	4	4	0
March	4	4	4	0
April	4	4	4	0
May	5	5	5	0
June	4	4	4	0
July	5	5	5	0
August	4	4	4	0
September	5	5	5	0
October	4	4	4	0
November	4	4	4	0
December	5	5	5	0

Unit of measure for microbiological results is colony forming units/100 mL (cfu/100 mL)

**Bala Water System
Summary of Microbiological Distribution Analysis - 2014**

Month	Total Coliforms Total for 2014	E. Coli Total for 2014	HPC Total for 2014	Adverse Total for 2014
January	12	12	8	0
February	12	12	8	0
March	12	12	8	0
April	15	15	10	0
May	12	12	8	0
June	12	12	8	0
July	18	18	10	1
August	12	12	8	0
September	15	15	10	0
October	12	12	8	0
November	12	12	8	0
December	18	18	10	1

BAW1	Water Treatment Plant Raw Water	1012 Minto Street
BAW2	Water Treatment Plant Treated Water	1012 Minto Street
BAW3	Bala Elevated Tower	1007 Tower Road
BAW4	Bala General store	1004 Maple Street
BAW5	Hydrant # 5 Blowoff	2948 District Rd # 169
BAW6	Bala Post Office	3208 District Rd # 169
BAW7	Jaspen Park Tap	1005 Pineridge Road
BAW8	Windsor Park Tap	3040 District Rd # 169
BAW9	Lorval Plaza	3007 District Rd # 169
BAW10	Partage Landing	3117 District Rd # 169
BAW11	Superior Propane	1021 Gordon Street
BAW12	Gidley Real Estate	3122 District Rd # 169
BAW13	Cottage Cravings	3181 District Rd # 169
BAW14	Bala Community Centre Tap	1008 Maple Street
BAW15	River St Pump Station	1017 River Street
BAW16	Sutton Drive - Vacant Lot	1027 Sutton Drive
BAW17	MR # 169 Bleeder	3244 District Rd # 169
BAW18	MR # 38 Bleeder	1068 District Rd # 38

District of Muskoka - Minto St. WTP - Bala

2.0 Raw Water Monthly Analysis Summary - 2014

Month	Alkalinity	Hardness	pH	Turbidity	True Colour	Temperature	TDS	Langliers Saturation Index	Total Coliform	E-coli	Total Number of Samples
<i>Parameter</i>	<i>mg/l</i>	<i>mg/l</i>	<i>pH</i>	<i>ntu</i>	<i>tcu</i>	<i>Celcius</i>	<i>mg/l</i>		<i>CFU/100ml</i>	<i>CFU/100ml</i>	
January	7	13	6.9	0.4	15	3.0	16	-3.4	7	0	4
February	7	13	6.7	0.4	16	2.4	16	-3.6	9	0	4
March	6	14	6.6	0.4	18	2.6	16	-3.5	3	1	4
April	7	14	6.7	0.4	17	3.6	17	-3.6	7	2	4
May	9	12	6.7	0.5	19	8.5	16	-3.3	14	0	5
June	6	14	6.5	0.4	19	14.0	17	-3.2	5	0	4
July	7	13	6.7	0.5	17	20.4	34	-3.6	6	0	5
August	7	13	6.5	1.0	19	19.0	57	-3.5	42	7	4
September	7	14	6.7	0.5	16	19.4	16	-3.3	59	8	5
October	7	15	6.8	0.5	19	15.4	17	-3.0	20	6	4
November	7	12	6.9	0.5	16	9.8	17	-3.2	33	1	4
December	6	15	7.0	0.43	17	4.7	17	-3.6	10	0	5
Average	7	13	6.7	0.5	17.3	10.2	21	-3.4	18	2	4

District of Muskoka - Minto St. WTP - Bala

6.0 Distribution Water Monthly Sampling Summary - 2014

Month	Alkalinity	Hardness	pH	Colour	Free Chlorine	Conductivity	Langliers Saturation Index	Total Coliforms	E-coli	HPC
<i>Parameter</i>	<i>mg/l</i>	<i>mg/l</i>	<i>TCU</i>	<i>mg/l</i>	<i>uS/cm</i>	<i>P/A</i>	<i>P/A</i>	<i>P/A</i>	<i>P/A</i>	<i>P/A</i>
January	46	35	7.8	1	1.40	50	-1.2	0	0	1
February	42	40	7.9	0	1.46	49	-1.16	0	0	1
March	43	43	7.6	0	0.96	49	-1.31	0	0	0
April	41	35	7.7	1	1.13	47	-1.5	0	0	0
May	41	40	7.9	0	1.03	47	-1.06	0	0	1
June	36	33	7.8	0	1.00	46	-1.26	0	0	0
July	47	45	7.8	0	1.36	52	-0.86	0	0	0
August	44	43	7.8	0	0.83	91	-0.9	0	0	0
September	42	40	7.7	0	0.88	48	-1.1	0	0	0
October	40	43	7.7	0	0.87	47	-1.06	0	0	0
November	43	43	7.7	0	1.01	49	-1.13	0	0	0
December	43	40	7.9	0	1.02	50	-1.17	0	0	0
Average	42	40	7.8	0.2	1.1	52	-1.1	0	0	0.2

District of Muskoka - Minto St. WTP - Bala

7.0 Distribution Water Quarterly Sampling Summary - 2014

Trihalomethanes		1	2	3	4	BAW3	BAW3	BAW3	BAW3		
<i>BAW3 Bala Water Tower</i>	<i>Units</i>	<i>MAC/IMAC</i>	<i>AO/OG</i>	<i>ODWS RDL</i>	<i>LRL MDL</i>	<i>Feb 11/14</i>	<i>May 13/14</i>	<i>Aug 12/14</i>	<i>Nov 18/14</i>	<i>Average</i>	<i>Max</i>

Trihalomethanes Total	µg/L	100	-	10	8	40	76	88	59	66	88
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Lead		1	2	3	4		BAW3				
<i>BAW3 Bala Water Tower</i>	<i>Units</i>	<i>MAC/IMAC</i>	<i>AO/OG</i>	<i>ODWS RDL</i>	<i>LRL MDL</i>		<i>May 13/14</i>			<i>Average</i>	<i>Max</i>

Lead	µg/L	-	300	150	20		0.040			0.04	0.04
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MAC - Maximum Acceptable Concentration	Half MAC - Half of the Maximum Acceptable Concentration
OG - Operational Guideline	AO - Aesthetic Objective
RDL - MOE Required Reporting Detection Limit	MDL - SGS Canada Inc. Method Detection Limit.

District of Muskoka - Minto St. WTP - Bala

9.0 Chemical Usage Summary - 2014

Month	Powdered Activated Carbon		CO2		Hydrated Lime		Coagulant	
	Average Dosage mg/L	Total kg	Average Dosage mg/L	Total kg	Average Dosage mg/L	Total kg	Average Dosage mg/L	Total Kg
January	0.0	0.0	35.7	436.8	20.7	253.4	18.2	222.6
February	0.0	0.0	35.8	339.9	20.3	192.7	17.7	168.3
March	0.0	0.0	34.1	396.6	19.8	230.9	17.8	207.3
April	0.0	0.0	34.3	355.4	19.6	202.5	18.7	193.7
May	0.0	0.0	30.4	377.5	18.5	229.4	17.2	214.0
June	0.0	0.0	31.7	416.1	20.5	268.9	16.7	218.8
July	0.0	0.0	35.7	474.9	21.2	282.7	17.9	238.3
August	0.0	0.0	32.5	498.8	20.9	320.7	16.9	259.3
September	0.0	0.0	31.1	368.1	19.3	229.0	16.6	196.2
October	0.0	0.0	35.1	383.8	18.0	197.2	16.7	182.4
November	0.0	0.0	35.0	331.7	18.0	171.0	16.9	160.3
December	0.0	0.0	36.7	315.9	17.7	152.4	17.7	152.7
Average Monthly	0.0	0.0	34.0	391.3	20	227.6	17.4	201.1
Total Yearly		0		4,695		2,731		2,414

Month	Sodium Hydroxide		Fluoride		Chlorine		Soda Ash	
	Average Dosage mg/L	Total Kg	Average Dosage mg/L	Total kg	Average Dosage mg/L	Total Kg	Average Dosage mg/L	Total Kg
January	6.0	71.3	0.58	6.9	3.01	39.6	0.00	0.0
February	5.4	54.7	0.62	6.2	2.66	27.3	0.00	0.0
March	5.4	66.4	0.57	7.0	2.80	35.2	0.00	0.0
April	5.5	59.3	0.64	6.9	2.61	29.4	0.00	0.0
May	4.2	54.9	0.52	6.8	2.99	40.2	0.00	0.0
June	4.3	60.2	0.62	8.7	3.25	46.7	0.00	0.0
July	4.3	60.5	0.64	9.0	4.10	60.0	0.00	0.0
August	4.6	73.5	0.62	10.0	4.23	71.1	0.00	0.0
September	4.7	52.5	0.60	6.7	4.06	51.2	0.00	0.0
October	5.3	60.0	0.54	6.1	3.99	46.7	0.00	0.0
November	5.7	55.6	0.59	5.8	3.50	35.5	0.00	0.0
December	6.4	57.5	0.60	5.4	3.24	30.4	0.00	0.0
Average Monthly	5.1	60.5	0.59	7	3.55	45.7	0	0
Total Yearly		726		86		513		0

Month	Potassium Permanganate		Polymer	
	Average Dosage mg/L	Total Kg	Average Dosage mg/L	Total Kg
January	0.0	0	0.0	0
February	0.0	0	0.0	0
March	0.0	0	0.0	0
April	0.0	0	0.0	0
May	0.0	0	0.0	0
June	0.0	0	0.0	0
July	0.0	0	0.0	0
August	0.3	5.3	0.0	0
September	0.3	4.0	0.0	0
October	0.3	3.6	0.0	0
November	0.0	0	0.0	0
December	0.0	0	0.0	0
Average Monthly	0.1	4.3	0.0	0
Total Yearly		13		0

District of Muskoka - Minto St. WTP - Bala

10.0 Adverse Water Quality Summary - 2014

Sample		Lab ID #	Location	Parameter	Result	Mac / Imac	Comments
Date	Time						

1	JULY 15/14	10:40	CA17132	BAW18 - MR # 38 BLEEDER	TOTAL COLIFORM	1	0	NOT ABLE TO SAMPLE UPSTREAM AND DOWNSTREAM AS BAW18 IS LOCATED AT THE DEAD END OF THE WATERMAIN
R1	JULY 17/14	14:35	CA17259	BAW18 - MR # 38 BLEEDER	TOTAL COLIFORM	0	0	
R2	JULY 17/14	14:45	CA17259	BAW7 - JASPEN PK TAP	TOTAL COLIFORM	0	0	
R3								

Sample		Lab ID #	Location	Parameter	Result	Mac / Imac	Comments
Date	Time						

2	DEC. 29/14	11:35	CA18239	BAW13 - COTT. CRAVING	TOTAL COLIFORM	3	0	
R1	DEC. 31/14	13:10	CA17500	BAW4 - GENERAL STORE	TOTAL COLIFORM	0	0	
R2	DEC. 31/14	13:19	CA17500	BAW13 - COTT. CRAVING	TOTAL COLIFORM	0	0	
R3	DEC. 31/14	13:30	CA17500	BAW6 - POST OFFICE	TOTAL COLIFORM	0	0	

Sample		Lab ID #	Location	Parameter	Result	Mac / Imac	Comments
Date	Time						

3								
R1								
R2								
R3								

Sample		Lab ID #	Location	Parameter	Result	Mac / Imac	Comments
Date	Time						

4								
R1								
R2								
R3								

Bala Water Distribution Summary 2014

New Services:

No new customers applied for a permit to connect to existing municipal water services in 2014.

Broken Watermains:

A broken watermain occurred in the Weismiller Timbermart yard. The aged 150 mm cast iron pipe was excavated and the 'ring break' repaired by Operations staff at a total cost of approximately \$1500.00.

A leak was also reported on Portage Street and the 50 mm polyethylene line was repaired by Operations staff at a total cost of approximately \$3700.00.

Service Leaks:

No Municipal service leaks occurred in 2014.

Frozen services:

No Municipal water services were frozen in 2014.

Replacement watermains:

There were no replacement watermains installed in 2014.

New watermains:

There were no new watermains installed in 2014.

Valve Replacement:

One 50 mm valve on Portage St was found to be inoperable and was replaced in 2014.

Fire Hydrants:

The 105 municipally owned fire hydrants were inspected, operated and flushed at least once during 2014. All hydrants were pumped dry in the fall, and scoped twice during the winter months to ensure they are not susceptible to freezing. Each of the hydrants in Bala were also painted in 2014.

Meter Installations:

A total of seven (7) water meters were installed in Bala in 2014. Of these, three (3) were scheduled change outs as part of the "aged meter change out program", three (3) as a result of customers going from flat rate to metered rate and one (1) which had been damaged.

Service Box Maintenance:

District field staff excavated and repaired 13 curb stop boxes in 2014. Field staff also responded to 232 water turn on/off requests in 2014.

Air-Vacuum Release Valves:

Seven (7) air release valves were inspected and tested for proper operation in 2014. Each of the chambers was inspected and pumped out as required in 2014.

Locates:

Field staff addressed 42 locate requests in 2014.