

FAIRYVIEW HUNTSVILLE

WATER

2014

ANNUAL AND SUMMARY

REPORT



DRINKING WATER WORKS PERMIT: 143-203
MUNICIPAL DRINKING WATER LICENSE: 143-103
M.O.E. WATERWORKS# 220002093

INTRODUCTION

The Fairyview Water Treatment Plant (W.T.P.) is owned and operated by the District of Muskoka. The plant serving the Town of Huntsville, was constructed in 1988. The treatment process consists of chemically assisted coagulation-flocculation, sedimentation, filtration, disinfection by chlorination, fluoridation and pH adjustment. There are reservoirs located at the water treatment plant, Dufferin Street, Skyline Drive and Hanes Road. The Fairyview WTP has a rated capacity of 9,000 cubic meters per day (m³/day) and the water system currently serves a population of approximately 9,000 people.

The plant operates License 143-103 and Permit 143-203 issued in October 2010, under the Municipal Drinking Water Licensing Program. The plant also operates under MOE Permit To Take Water # 2801-8FNPSN (expires January, 2021), which allows a maximum of 22,500 m³/day to be taken from the source water, Fairy Lake.

The water intake to the plant is located in 15 metres of water, about 280 metres from shore.

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 Fairyview Water Treatment plant has a rated capacity of 9,000 m³/day. In 2014, the total monthly average flow for the year was 3,267 m³/day, which represents 36.3% of the plant's design capacity. The maximum day flow for the year was 4,138 m³/day, however, the 3 year average for maximum day flow is 5,554 m³/day, which represents 61.7% 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 #01-P-1091) permits 22,500 m³ /day to be withdrawn from the source water, therefore there were no exceedances of this permit.

Summary of Analytical Results

A total of 962 microbiological regulatory tests were performed in 2014. There were 456 free chlorine residual tests performed in the distribution system and all results were satisfactory. Response was carried out for all adverse results by proper notification and corrective actions.

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 Fairyview Water Treatment Plant:

Chlorine: Disinfectant

Polyaluminum Chloride (SternPAC): Primary coagulant

Hydrofluorosilicic Acid: Discontinued in January 2014.

Soda Ash: Alkalinity and pH adjustment

Documentation of System Repairs and Upgrades

A major capital project to upgrade the HVAC systems, process equipment and piping improvements was completed in 2014. The cost of this project was 3.75 million dollars.

Continuous Improvement Measures

Water Treatment Plant

Significant improvements were made to the treatment processes in 2014. The coagulant and flocculation filtration processes have been optimized to maximize natural organic matter (NOM) removal. Higher NOM removal efficiencies result in reducing the potential for Trihalomethane (THM) and Haloacetic Acid (HAA) formation at the plant.

Distribution System

Progress has always been made in reducing the water age throughout the distribution system. Modifications to reservoir operation and distribution system flow patterns has lowered the water age significantly. This again has had a positive effect on lowering the potential for THM and HAA formation within the distribution system.

Fluoride Addition Discontinued

On January 20, 2014, District Council passed By-law 2014-2, being a by-law to authorize fluoridation of municipal water supplies throughout Muskoka. This by-law did not authorize the practice of fluoridating the municipal water supply in the Town of Huntsville. Therefore, the addition of fluoride has been discontinued.



OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number:	220002093
Drinking-Water System Name:	Fairyview 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;"> <p>District Municipality of Muskoka 70 Pine Street Bracebridge, Ontario P1L 1N3 705-687-6764 www.muskoka.on.ca</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>N.A.</p> </div> <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; display: inline-block; width: 100px; height: 20px; vertical-align: middle;"></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 Town of Huntsville was constructed in 1988. The treatment process consists of chemically assisted coagulation-flocculation, sedimentation, filtration and disinfection by chlorination, fluoridation and pH adjustment. The capacity of the plant is 9000 cubic meters per day. The water source is Fairy Lake, a fairly large and clear body of water. The intake is located in 15 meters of water, about 280 meters from shore.

List all water treatment chemicals used over this reporting period

Chlorine, Polyaluminum Chloride, Soda Ash, Hydrofluorosilicic acid (discontinued according to By-law 2014-2)

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
Jan 2 2014	Total Coliform	1	cfu/100 ml	resample	Jan 6 2014
Oct 27 2014	Total Coliform	1	cfu/100mL	resample	Oct 29 2014



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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 #) cfu/100 mL	Range of Total Coliform Results (min #)-(max #) cfu/100 mL	Number of HPC Samples	Range of HPC Results (min #)-(max #) cfu/100 mL
Raw	53	0- 4	0-70	0	0
Treated	53	0	0	52	0-29
Distribution	300	0	0-1	98	0-18

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	0.04- 0.27 NTU	0.06 NTU
Chlorine	8760	1.26 – 2.28 mg/L	1.76 mg/L
Fluoride (If the DWS provides fluoridation)		0-0.56	

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, NDOG = No Data, Over Grown*

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	Apr 14/14	0.02<MDL	ug/L	No
Arsenic	Apr 14/14	0.2<MDL	ug/L	No
Barium	Apr 14/14	14.2	ug/L	No
Boron	Apr 14/14	5.0	ug/L	No
Cadmium	Apr 14/14	0.009	ug/L	No
Chromium	Apr 14/14	0.24	ug/L	No
*Lead	Apr 14/14	0.01<MDL	ug/L	No
Mercury	Apr 14/14	0.01<MDL	ug/L	No
Selenium	Apr 14/14	1<MDL	ug/L	No
Sodium	Apr 14/14	16.6	mg/L	Yes

Uranium	Apr 14/14	0.002<MDL	ug/L	No
Fluoride	Apr 14/14	0.06<MDL	mg/L	No
Nitrite	Jan 13/14	0.003<MDL	mg/L	No
Nitrate	Jan 13/14	0.202	mg/L	No
Nitrite	Apr 14/14	0.003<MDL	mg/L	No
Nitrate	Apr 14/14	0.230	mg/L	No
Nitrite	Jul 02/14	0.003<MDL	mg/L	No
Nitrate	Jul 02/14	0.298	mg/L	No
Nitrite	Oct 20/14	0.003<MDL	mg/L	No
Nitrate	Oct 20/14	0.188	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 #)	Number of Exceedances
Plumbing			
Distribution	4	0.08-3.98 ug/L	0

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



1,2-Dichloroethane	Apr 14/14	0.35<MDL	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Apr 14/14	0.33<MDL	ug/L	No
Dichloromethane	Apr 14/14	0.35<MDL	ug/L	No
2-4 Dichlorophenol	Apr 14/14	0.15<MDL	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Apr 14/14	0.19<MDL	ug/L	No
Diclofop-methyl	Apr 14/14	0.40<MDL	ug/L	No
Dimethoate	Apr 14/14	0.03<MDL	ug/L	No
Dinoseb	Apr 14/14	0.36<MDL	ug/L	No
Diquat	Apr 14/14	1<MDL	ug/L	No
Diuron	Apr 14/14	0.03<MDL	ug/L	No
Glyphosate	Apr 14/14	1<MDL	ug/L	No
Heptachlor + Heptachlor Epoxide	Apr 14/14	0.01<MDL	ug/L	No
Lindane (Total)	Apr 14/14	0.01<MDL	ug/L	No
Malathion	Apr 14/14	0.02<MDL	ug/L	No
Methoxychlor	Apr 14/14	0.01<MDL	ug/L	No
Metolachlor	Apr 14/14	0.01<MDL	ug/L	No
Metribuzin	Apr 14/14	0.02<MDL	ug/L	No
Monochlorobenzene	Apr 14/14	0.30<MDL	ug/L	No
Paraquat	Apr 14/14	1<MDL	ug/L	No
Parathion	Apr 14/14	0.02<MDL	ug/L	No
Pentachlorophenol	Apr 14/14	0.15<MDL	ug/L	No
Phorate	Apr 14/14	0.01<MDL	ug/L	No
Picloram	Apr 14/14	1<MDL	ug/L	No
Polychlorinated Biphenyls(PCB)	Apr 14/14	0.04<MDL	ug/L	No
Prometryn	Apr 14/14	0.03<MDL	ug/L	No
Simazine	Apr 14/14	0.01<MDL	ug/L	No
THM (NOTE: annual average taken from Distribution System)	Samples Taken: Jan 13/14 Apr 14/14 Jul 02/14 Oct 20/14	62	ug/L	No
Temephos	Apr 14/14	0.01<MDL	ug/L	No
Terbufos	Apr 14/14	0.01<MDL	ug/L	No
Tetrachloroethylene	Apr 14/14	0.35<MDL	ug/L	No
2,3,4,6-Tetrachlorophenol	Apr 14/14	0.14<MDL	ug/L	No
Triallate	Apr 14/14	0.01<MDL	ug/L	No
Trichloroethylene	Apr 14/14	0.44<MDL	ug/L	No
2,4,6-Trichlorophenol	Apr 14/14	0.25<MDL	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Apr 14/14	0.22<MDL	ug/L	No
Trifluralin	Apr 14/14	0.02<MDL	ug/L	No
Vinyl Chloride	Apr 14/14	0.17<MDL	ug/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

District of Muskoka - Hwy 60 WTP - Huntsville

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	105,491	3,403	4,260	2,222	Planned flushing event - not consumption related
February	95,015	3,393	3,856	3,001	
March	99,717	3,217	3,439	2,743	
April	90,805	3,027	3,399	2,852	
May	108,762	3,508	4,579	2,753	Planned flushing event - not consumption related
June	106,116	3,537	4,291	2,887	
July	109,476	3,531	4,138	3,095	Represents max. day customer consumption for the year
August	109,280	3,525	4,061	3,075	
September	95,597	3,187	3,561	2,848	
October	98,145	3,166	4,128	2,756	
November	84,977	2,833	3,178	2,467	
December	88,872	2,867	3,355	2,450	

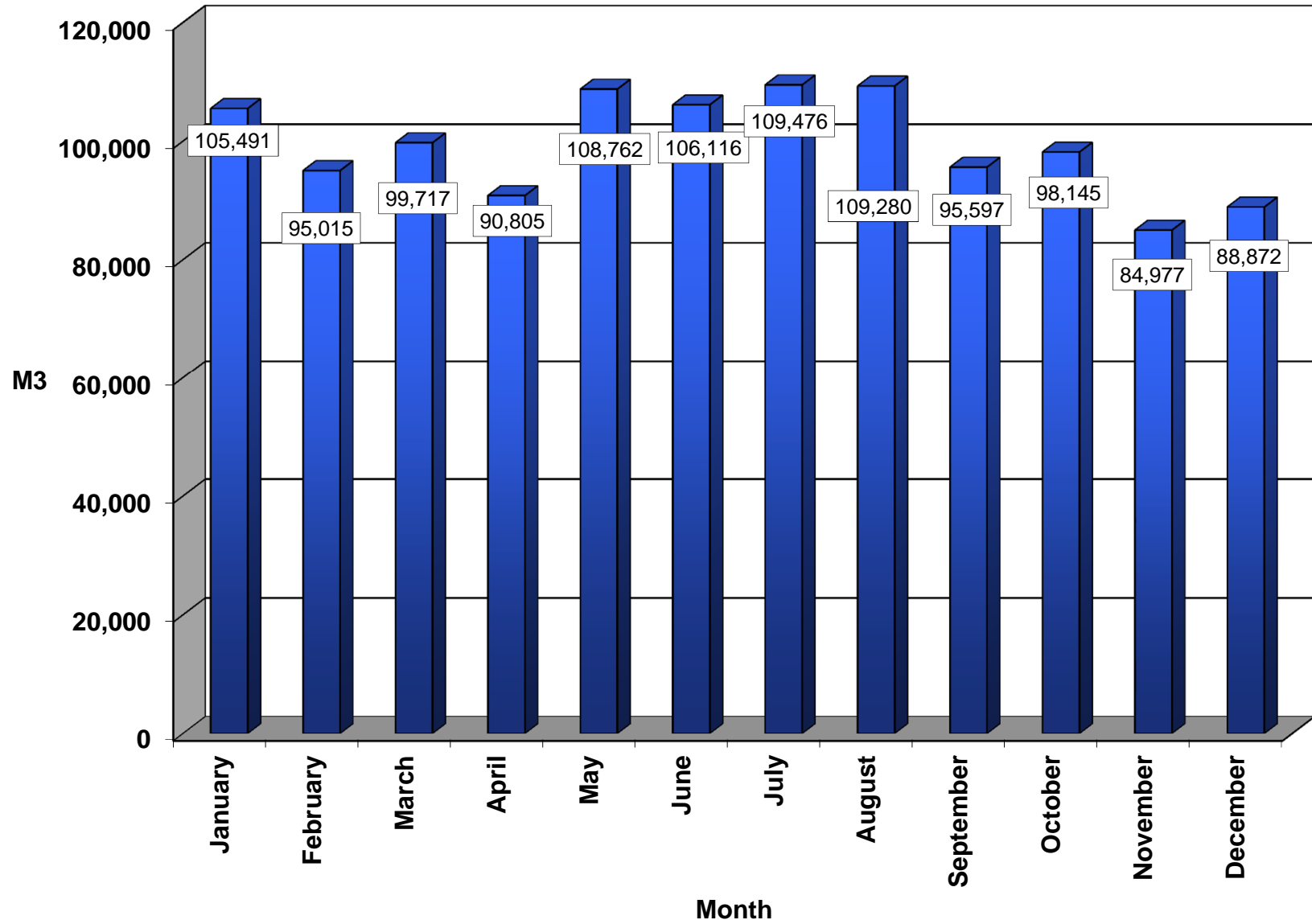
Total 1,192,253

Average Day 3,267

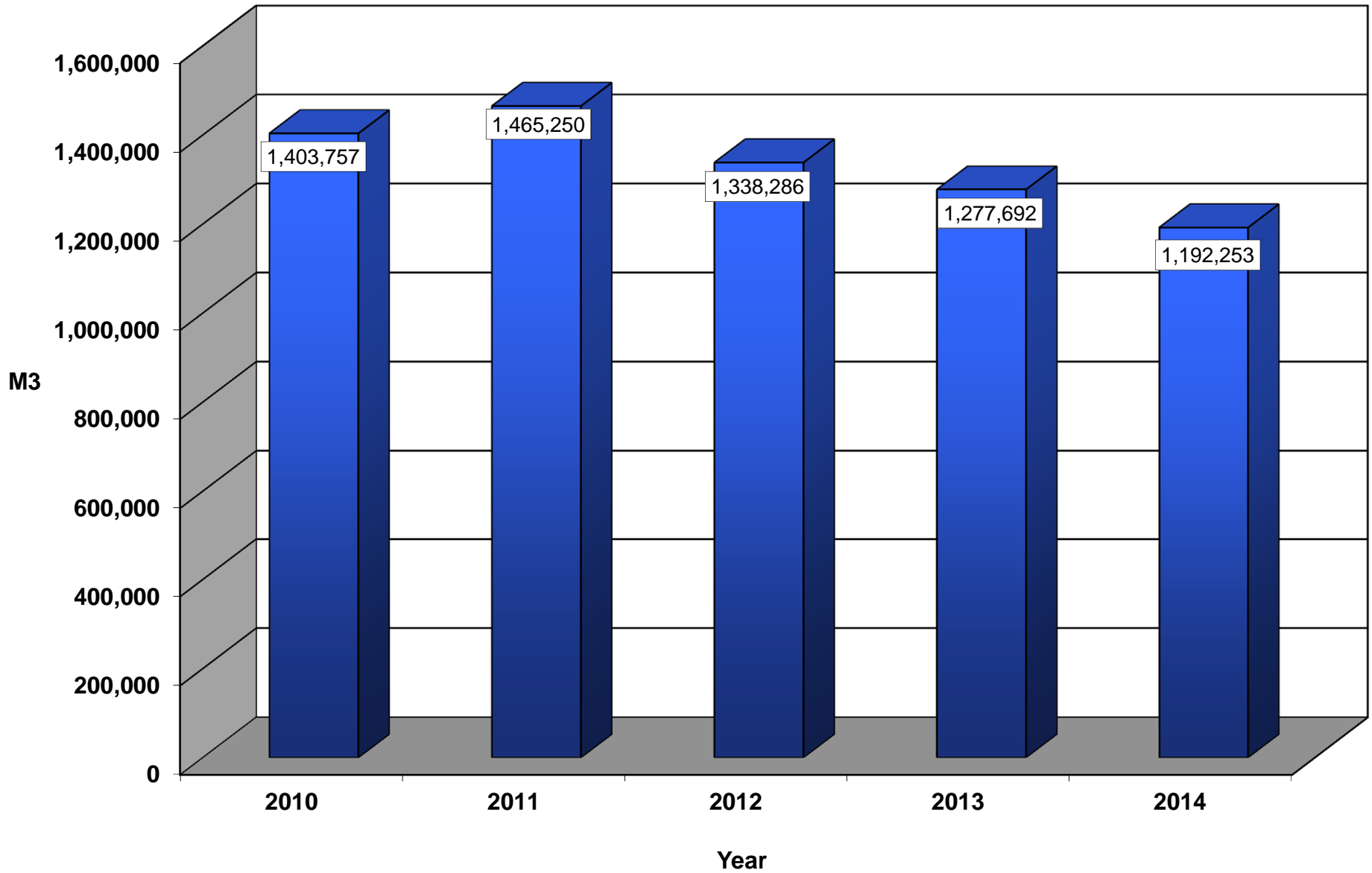
Maximum Day 4,138

Minimum Day 2,222

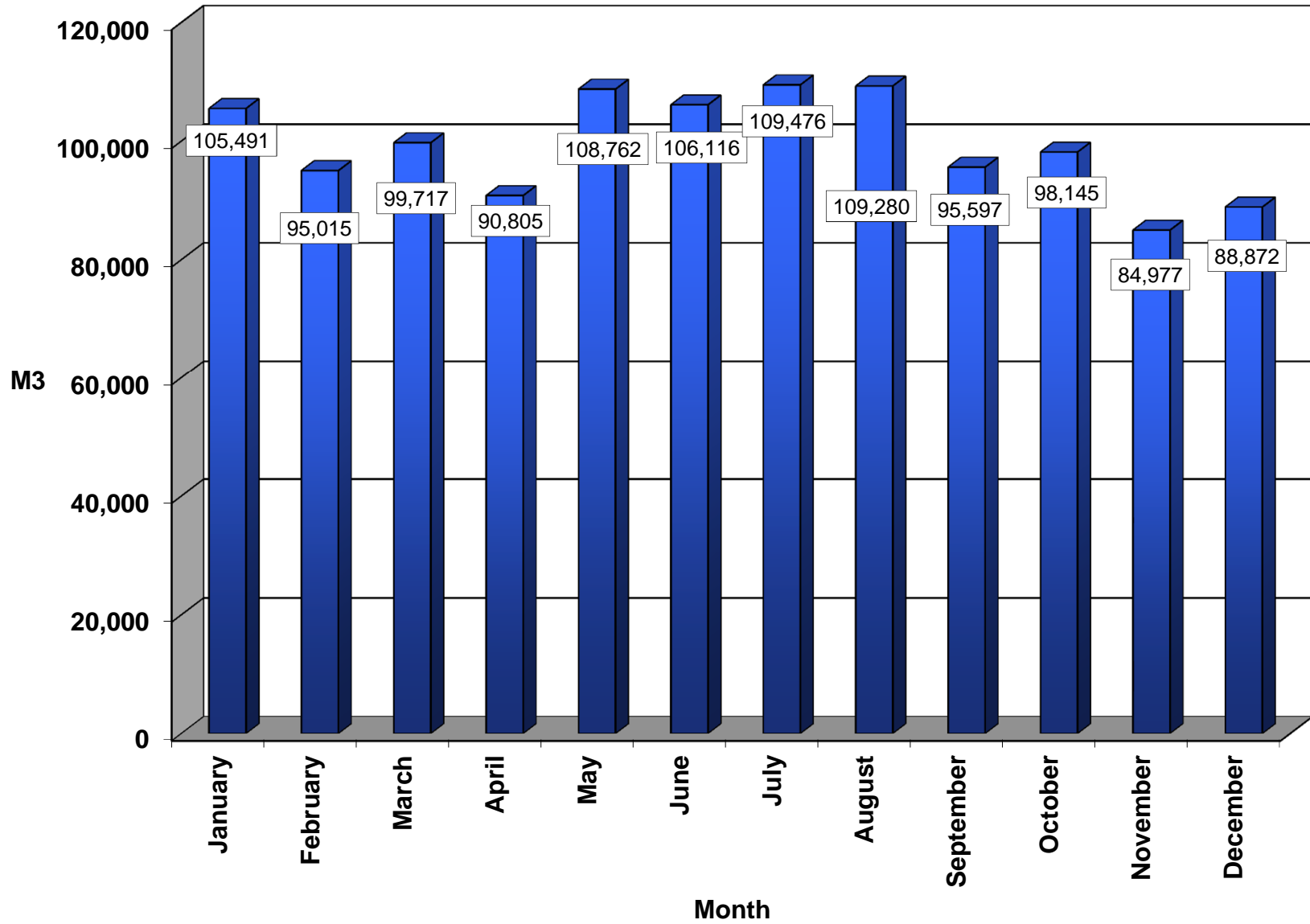
District Municipality of Muskoka
Huntsville-Fairyview Water Treatment Plant
Monthly Water Production 2014



**District Municipality of Muskoka
Huntsville-Fairyview Water Treatment Plant
Total Water Production 2010 - 2014**



District Municipality of Muskoka
Huntsville-Fairyview Water Treatment Plant
Monthly Water Production 2014



District of Muskoka - Hwy 60 WTP - Huntsville

2.0 Raw Water Monthly Analysis Summary - 2014

Month	Alkalinity	Hardness	pH	Turbidity	True Colour	Temperature	Cond	Langliers Saturation Index	AVG Total Coliform	AVG E-coli	Total Number of samples taken
<i>Parameter</i>	<i>mg/l</i>	<i>mg/l</i>	<i>pH</i>	<i>ntu</i>	<i>tcu</i>	<i>Celcius</i>			<i>CFU/100ml</i>	<i>CFU/100ml</i>	
January	18	17	6.67	0.62	48	2.9	40.8	-2.8	37	1	5
February	17	19	6.66	0.54	37	3.0	37.9	-2.8	23	0	4
March	12	15	6.77	0.43	30	2.2	35.8	-2.8	9	0	5
April	14	14	6.69	0.77	40	2.6	37.8	-3.0	39	1	4
May	12	13	6.63	1.00	35	3.0	37.1	-3.2	26	2	4
June	13	15	6.55	0.64	39	5.7	64.7	-3.1	11.3	1	4
July	12	12	6.50	0.63	31	7.0	60.8	-3.2	4.6	1	5
August	13	15	6.30	0.52	44	8.5	61.4	-3.3	6.3	1	4
September	16	16	6.28	0.50	31	9.2	43.3	-3.2	10.2	1	5
October	19	20	6.81	0.64	51	12.0	38.8	-2.4	26.8	4	4
November	15	20	6.65	0.56	45	6.1	35.8	-2.8	28.5	8	4
December	18	26	6.53	0.81	58	3.6	31.8	-2.7	33.8	3	5
Average	15	17	6.59	0.64	41	5.5	43.8	-2.9	39	8	53

District of Muskoka - Hwy 60 WTP - Huntsville

4.0 Treated Water Monthly Analysis Summary - 2014

Month	Alkalinity	Hardness	pH	Turbidity			True Colour	Iron	Temperature	Chlorine			Con	Langliers Saturation Index	Total Coliform	E-coli	Total Number of Samples	HPC	Total Number of Samples
				Average	High	Low				Free	High	Low							
Parameter	mg/l	mg/l	pH	ntu	ntu	ntu	tcu	mg/l	C	mg/l	mg/l	mg/l		CFU/100ml	CFU/100ml		CFU/1ml		
January	29.8	17.0	7.28	0.06	0.18	0.04	0		10.0	1.89	2.10	1.56	66.9	-1.8	0	0	5	29	5
February	31.0	19.0	7.39	0.05	0.06	0.04	0		10.1	2.06	2.28	1.70	71.1	-1.6	0	0	4	0	4
March	30.0	18.0	7.53	0.05	0.08	0.04	0		8.8	1.77	2.26	1.54	67.0	-1.6	0	0	5	0	5
April	29.0	18.0	7.21	0.06	0.07	0.04	0		9.2	1.58	1.88	1.46	71.3	-2.0	0	0	4	1	4
May	31.0	19.0	7.30	0.06	0.10	0.06	0		10.4	1.82	1.97	1.53	69.9	-1.7	0	0	4	2	4
June	26.7	15.0	7.40	0.06	0.11	0.05	0		12.9	1.90	2.07	1.56	75.3	-1.8	0	0	4	1	4
July	28.3	14.0	7.52	0.07	0.16	0.05	0		14.2	1.93	2.28	1.64	80.9		0	0	5	0	5
August	30.7	15.0	7.61	0.07	0.21	0.04	0		15.1	1.75	1.88	1.55	93.8	-1.6	0	0	4	0	4
September	34.1	18.0	7.52	0.06	0.09	0.05	0		15.9	1.62	1.91	1.27	93.0	-0.5	0	0	5	0	5
October	28.7	18.0	7.46	0.06	0.15	0.05	0		16.6	1.46	2.11	1.26	79.8	-1.5	0	0	4	0	4
November	29.0	23.0	7.40	0.06	0.27	0.04	0		14	1.74	1.99	1.42	71.5	-1.5	0	0	4	0	4
December	29.1	21.0	7.53	0.06	0.145	0.042	0		12.2	1.65	1.84	1.35	68.4	-1.5	0	0	5	2	4
Average	29.8	17.9	7.43	0.06	0.14	0.04	0.0		12.5	1.76	2.05	1.49	75.7	-1.5	0	0	53	29.0	52

District of Muskoka -Huntsville WTP 220002093
7.0 DISTRIBUTION SAMPLING SUMMARY - 2014
Regulation Requirements

<i>Parameter</i>	<i>I.D.</i>						DDW HW6 Dufferin Reservoir	DDW HW11 Syline Reservoir	DDW HW15 Hanes Reservoir	DW HW6 Dufferin Reservoir	DDW HW6 Dufferin Reservoir	DDW HW6 Dufferin Reservoir	Average
<i>DDW</i>	<i>Units</i>	<i>MAC</i>	<i>Half MAC</i>	<i>AO/OG</i>	<i>RDL</i>	<i>MDL</i>	Jan 13/14 10:15	Jan 13/14 11:50	Jan 13/14 11:10	Apr 14/14 11:10	Jul 02/14 10:15	Oct 20/14 13:00	
Trihalomethanes Total	µg/L	100	50	-	10	0.37	49			56	54	87	62
Lead	µg/L	10	5	-	2	0.01	0.10	3.98	0.09	0.05			
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 - Hwy 60 WTP - Huntsville

9.0 Chemical Usage Summary - 2014

Month	Powdered Activated Carbon			CO2		Hydrated Lime		Coagulant	
	Average Dosage mg/L	Total kg	Estimated Monthly Cost	Average Dosage mg/L	Total kg	Average Dosage mg/L	Total kg	Average Dosage mg/L	Total Kg
January	0.0	0.0	\$0	0.0	0.0	0.0	0.0	16.5	1,872
February	0.0	0.0	\$0	0.0	0.0	0.0	0.0	16.4	1,648
March	0.0	0.0	\$0	0.0	0.0	0.0	0.0	16.4	1,741
April	0.0	0.0	\$0	0.0	0.0	0.0	0.0	16.3	1,581
May	0.0	0.0	\$0	0.0	0.0	0.0	0.0	16.3	1,862
June	0.0	0.0	\$0	0.0	0.0	0.0	0.0	16.3	1,813
July	0.0	0.0	\$0	0.0	0.0	0.0	0.0	16.2	1,859
August	0.0	0.0	\$0	0.0	0.0	0.0	0.0	16.2	1,847
September	0.0	0.0	\$0	0.0	0.0	0.0	0.0	16.3	1,625
October	0.0	0.0	\$0	0.0	0.0	0.0	0.0	14.8	1,527
November	0.0	0.0	\$0	0.0	0.0	0.0	0.0	13.9	1,338
December	0.0	0.0	\$0	0.0	0.0	0.0	0.0	14.1	1,316
Average Monthly	0.0	0.0	\$0	0.0	0.0	0	0.0	15.8	1669
Total Yearly		0	\$0		0		0		20,027

Month	Sodium Hydroxide			Fluoride		Chlorine		Soda Ash	
	Average Dosage mg/L	Total Kg	Estimated Monthly Cost	Average Dosage mg/L	Total kg	Average Dosage mg/L	Total Kg	Average Dosage mg/L	Total Kg
January	0.0	0	\$0	0.47	209.4	0.43	81.5	25.46	0.0
February	0.0	0	\$0	0.00	0.0	0.43	73.7	24.68	2,218.9
March	0.0	0	\$0	0.00	0.0	0.43	81.5	25.64	2,405.4
April	0.0	0	\$0	0.00	0.0	0.43	78.9	9.34	644.7
May	0.0	0	\$0	0.00	0.0	0.43	85.9	3.80	124.5
June	0.0	0	\$0	0.00	0.0	0.43	83.6	3.94	127.5
July	0.0	0	\$0	0.00	0.0	0.23	78.0	4.25	150.5
August	0.0	0	\$0	0.00	0.0	0.00	89.1	4.33	156.1
September	0.0	0	\$0	0.00	0.0	0.00	87.6	4.55	139.9
October	0.0	0	\$0	0.00	0.0	0.00	90.5	2.63	112.5
November	0.0	0	\$0	0.00	0.0	0.00	87.5	2.52	97.0
December	0.0	0	\$0	0.00	0.0	0.00	90.5	2.60	99.0
Average Monthly	0.0	0	\$0	0.04	17	0.17	86	4	184
Total Yearly		0	\$0		209		1,008		6,276

Month	Potassium Permanganate			Polymer	
	Average Dosage mg/L	Total Kg	Estimated Monthly Cost	Average Dosage mg/L	Total Kg
January	0.0	0	\$0	0.0	0
February	0.0	0	\$0	0.0	0
March	0.0	0	\$0	0.0	0
April	0.0	0	\$0	0.0	0
May	0.0	0	\$0	0.0	0
June	0.0	0	\$0	0.0	0
July	0.0	0	\$0	0.0	0
August	0.0	0	\$0	0.0	0
September	0.0	0	\$0	0.0	0
October	0.0	0	\$0	0.0	0
November	0.0	0	\$0	0.0	0
December	0.0	0	\$0	0.0	0
Average Monthly	0.0	0	\$0	0.0	0
Unit Cost			<i>per kg</i>		
Total Yearly		0	\$0		0

HUNTSVILLE WATER DISTRIBUTION SUMMARY 2014

New Services

A total of 31 customers applied for connection to existing water services. 32 customers connected to water.

Broken Watermains

District staff repaired 3 watermain breaks during 2014. The average cost to repair each water main break was \$ 7,026.33

Service Leaks

District staff repaired a total of 8 service leaks at an average cost of \$3,159.44

Frozen Services

5 frozen services were reported in 2014.

New Watermains

No watermain was replaced in 2014. 403 meters of new main was installed.

Valve Replacement

7 valves were replaced. 26 main line valve boxes were repaired in 2014.

Curb stops

A total of 35 curb stops were repaired, raised or lowered . 1 curb stop valve was replaced in 2014.

Fire Hydrants

6 hydrants were flushed due to customer complaints about dirty water. All hydrants in Huntsville were flushed at least once in 2014. There are 603 hydrants, 66 of which are privately owned.

Water Meters

District staff replaced 95 water meters in 2014 under our scheduled meter change out program. Non-payment shut off requests totaled 53. We also reviewed high consumption complaints and responded to 9 emergency callouts and 114 scheduled shut offs / turn ons for internal plumbing problems.

Air Release Valves

All of the water Air Release Valves were inspected at least once in 2014.

Locates

643 locates were performed.