

**PORT SEVERN**

**WATER**

**2014**

**ANNUAL AND SUMMARY**

**REPORT**



**DRINKING WATER WORKS PERMIT:**  
**MUNICIPAL DRINKING WATER LICENCE:**  
**M.O.E. WATERWORKS#:**

**143-202**  
**143-102**  
**260001669**

## **INTRODUCTION**

The Lone Pine Road Water Treatment Plant (W.T.P.) in Port Severn is owned and operated by the District Municipality of Muskoka. The plants low lift pumping station is located on Bonneville Road, with the raw water supply coming from the Severn River (Little Lake). The raw water intake is approximately 4.5 meters deep and about 255 meters from shore.

The water treatment plant operates under licence 143-102 and permit 143-202, issued in October 2010, under the Municipal Drinking Water Licensing Program. The plant also operates under MOE Permit to Take Water M830-6KXPST (expires January 16, 2016). Design capacity according to the Environmental Study Report and Design Brief is 1,265 cubic metres per day (m<sup>3</sup>/day). The waterworks currently serves a population of approximately 500 persons.

The water treatment plant began treating and supplying potable water to the Port Severn water system on October 14, 1997. The treatment process consists of a Fiberglass Reinforced Plastic (FRP) screened intake hood, 300 mm High Density Polyethylene (HDPE) pipe intake line, and a 6mm screen at the low lift pumping station on Bonneville Road. Raw water is pumped with three submersible pumps to the treatment plant site on Lone Pine Drive. Located at the treatment plant site, are 2 Ecodyne Graver Monoplants, each with a rated design capacity of 1,000 m<sup>3</sup>/day. Also located at the plant is a 94 m<sup>3</sup> contact chamber, a 729 m<sup>3</sup> clearwell and five vertical turbine pumps to supply water to the distribution system. Chemical systems consist of metering pumps for coagulation (aluminum sulfate), chlorination (sodium hypochlorite), and pH adjustment (sodium hydroxide).

All treatment control systems use a Supervisory Control And Data Acquisition (SCADA) system for process control and monitoring.

## **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 Lone Pine water treatment plant has a rated capacity of 1,265 m<sup>3</sup>/day. In 2014, the average flow for the year was 146 m<sup>3</sup>/day, which represents 12% of the plant design capacity. The maximum day flow for the year was 402 m<sup>3</sup>/day, however, the 3-year average for maximum day flow is 411 m<sup>3</sup>/day, which represents 33% of the plant design capacity.

Monthly flows are shown in the attached table.

The Permit To Take Water (PTTW #1830-6KXPST) permits 1,900 m<sup>3</sup>/day; therefore there were no exceedances of this permit.

### **Summary of Analytical Results**

A total of 677 microbiological regulatory tests were performed in 2014 and compliance with Provincial standards was achieved throughout. There were 172 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 Lone Pine Road Water Treatment Plant:

Sodium Hypochlorite: Disinfectant

Aluminum Sulphate (alum): Primary coagulant

Sodium Hydroxide: Final pH adjustment

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**

<b>Drinking-Water System Number:</b>	260001669
<b>Drinking-Water System Name:</b>	Port Severn Water Treatment Plant
<b>Drinking-Water System Owner:</b>	District Municipality of Muskoka
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 01 to December 31, 2014

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></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><b><u>Complete for all other Categories.</u></b></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; display: inline-block;"></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 Port Severn was constructed in 1997. The treatment process consists of chemically assisted coagulation-flocculation, sedimentation and filtration using dual-media filters with a combination of sand and anthracite coal. Disinfection in a post-treatment chlorine contact chamber is followed by final pH adjustment before the treated water is pumped to our customers. Our waterworks currently serves a population of approximately 500 persons. The rated water production capacity of the plant is 1900 cubic meters per day. Our raw water source is Little Lake. Our intake is located two meters above the lakebed at a depth of 4.5 meters and about 255 meters from shore.

**List all water treatment chemicals used over this reporting period**

Sodium Hypochlorite, Aluminum Sulphate, Sodium Hydroxide.

**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
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 #) 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	52	0 - 4	0 - 24	0	N.A.
Treated	52	0 - 0	0 - 0	52	0 - 1
Distribution	156	0 - 0	0 - 0	105	0 - 84

### 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
<b>Turbidity</b>	8760	0.03 - 0.10 NTU	0.047 NTU
<b>Chlorine</b>	8760	1.89 - 3.11	2.62
<b>Fluoride</b> (If the DWS provides fluoridation)	N.A.	N.A.	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.  
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
N.A.				
N.A.				

### 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	0.2	µg/L	No
Barium	May 13/14	16.2	µg/L	No
Boron	May 13/14	7.1	µg/L	No
Cadmium	May 13/14	0.003<MDL	µg/L	No
Chromium	May 13/14	0.48	µg/L	No
*Lead	May 13/14	0.29	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	8.84	mg/L	No
Uranium	May 13/14	0.005	µg/L	No
Fluoride	May 13/14	0.06<MDL	mg/L	No
Nitrite	Feb 11/14	0.003<MDL	mg/L	No
Nitrate	Feb 11/14	0.092	mg/L	No
Nitrite	May 13/14	0.003<MDL	mg/L	No
Nitrate	May 13/14	0.149	mg/L	No
Nitrite	Aug 12/14	0.003<MDL	mg/L	No
Nitrate	Aug 12/14	0.048	mg/L	No
Nitrite	Nov 18/14	0.003<MDL	mg/L	No
Nitrate	Nov 18/14	0.086	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	NA	µg/L	0
Distribution	1	0.29	µg/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	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

<b>Lindane (Total)</b>	May 13/14	0.02<MDL	µg/L	No
<b>Malathion</b>	May 13/14	0.01<MDL	µg/L	No
<b>Methoxychlor</b>	May 13/14	0.01<MDL	µg/L	No
<b>Metolachlor</b>	May 13/14	0.02<MDL	µg/L	No
<b>Metribuzin</b>	May 13/14	0.02<MDL	µg/L	No
<b>Monochlorobenzene</b>	May 13/14	1<MDL	µg/L	No
<b>Paraquat</b>	May 13/14	0.02<MDL	µg/L	No
<b>Parathion</b>	May 13/14	0.15<MDL	µg/L	No
<b>Pentachlorophenol</b>	May 13/14	0.01<MDL	µg/L	No
<b>Phorate</b>	May 13/14	1<MDL	µg/L	No
<b>Picloram</b>	May 13/14	0.04<MDL	µg/L	No
<b>Polychlorinated Biphenyls(PCB)</b>	May 13/14	0.03<MDL	µg/L	No
<b>Prometryne</b>	May 13/14	0.01<MDL	µg/L	No
<b>Simazine</b>	May 13/14	0.02<MDL	µg/L	No
<b>THM</b> (NOTE: Annual average from Distribution system – 4 samples)	Samples Taken: Feb 11/14 May 13/14 Aug 12/14 Nov 18/14	46	µg/L	No
<b>Temphos</b>	May 13/14	0.01<MDL	µg/L	No
<b>Terbufos</b>	May 13/14	0.01<MDL	µg/L	No
<b>Tetrachloroethylene</b>	May 13/14	0.35<MDL	µg/L	No
<b>2,3,4,6-Tetrachlorophenol</b>	May 13/14	0.14<MDL	µg/L	No
<b>Triallate</b>	May 13/14	0.01<MDL	µg/L	No
<b>Trichloroethylene</b>	May 13/14	0.44<MDL	µg/L	No
<b>2,4,6-Trichlorophenol</b>	May 13/14	0.25<MDL	µg/L	No
<b>2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)</b>	May 13/14	0.22<MDL	µg/L	No
<b>Trifluralin</b>	May 13/14	0.02<MDL	µg/L	No
<b>Vinyl Chloride</b>	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 - Lone Pine Dr. WTP - Port Severn

### 1.0 Water Flow Summary - 2014

Month	Total Monthly (m <sup>3</sup> )	Average Day Flow (m <sup>3</sup> /d)	Maximum Day Flow (m <sup>3</sup> /d)	Minimum Day Flow (m <sup>3</sup> /d)	Comments
January	2,593	84	147	48	
February	2,094	75	117	39	
March	2,244	72	106	50	
April	2,197	73	143	50	
May	4,891	158	280	96	
June	6,998	233	402	135	
July	8,766	283	374	205	
August	8,957	289	401	181	
September	5,699	190	326	145	
October	5,059	163	228	84	
November	1,847	62	83	46	
December	2,090	67	168	52	

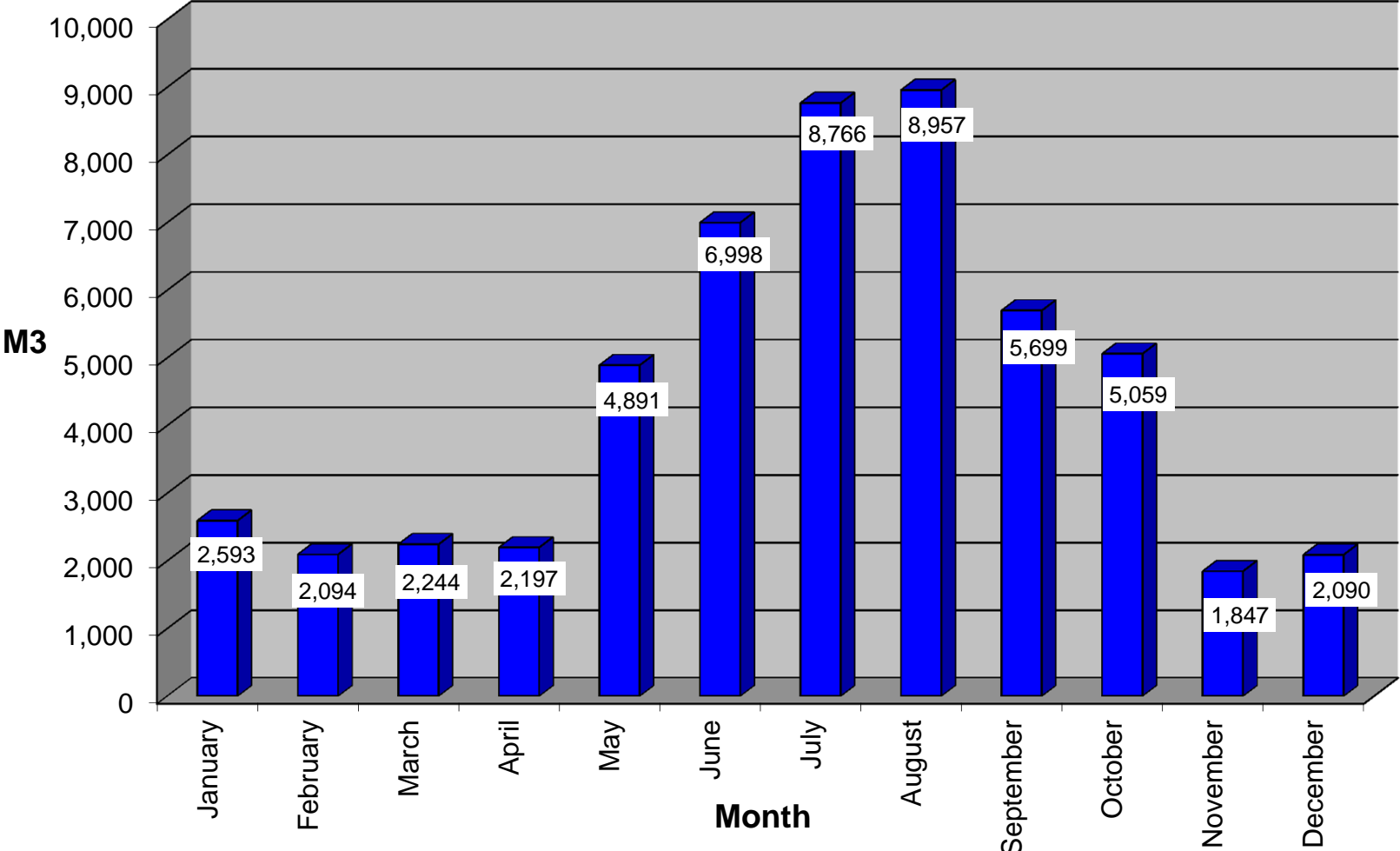
Total 53,437

Average Day 146

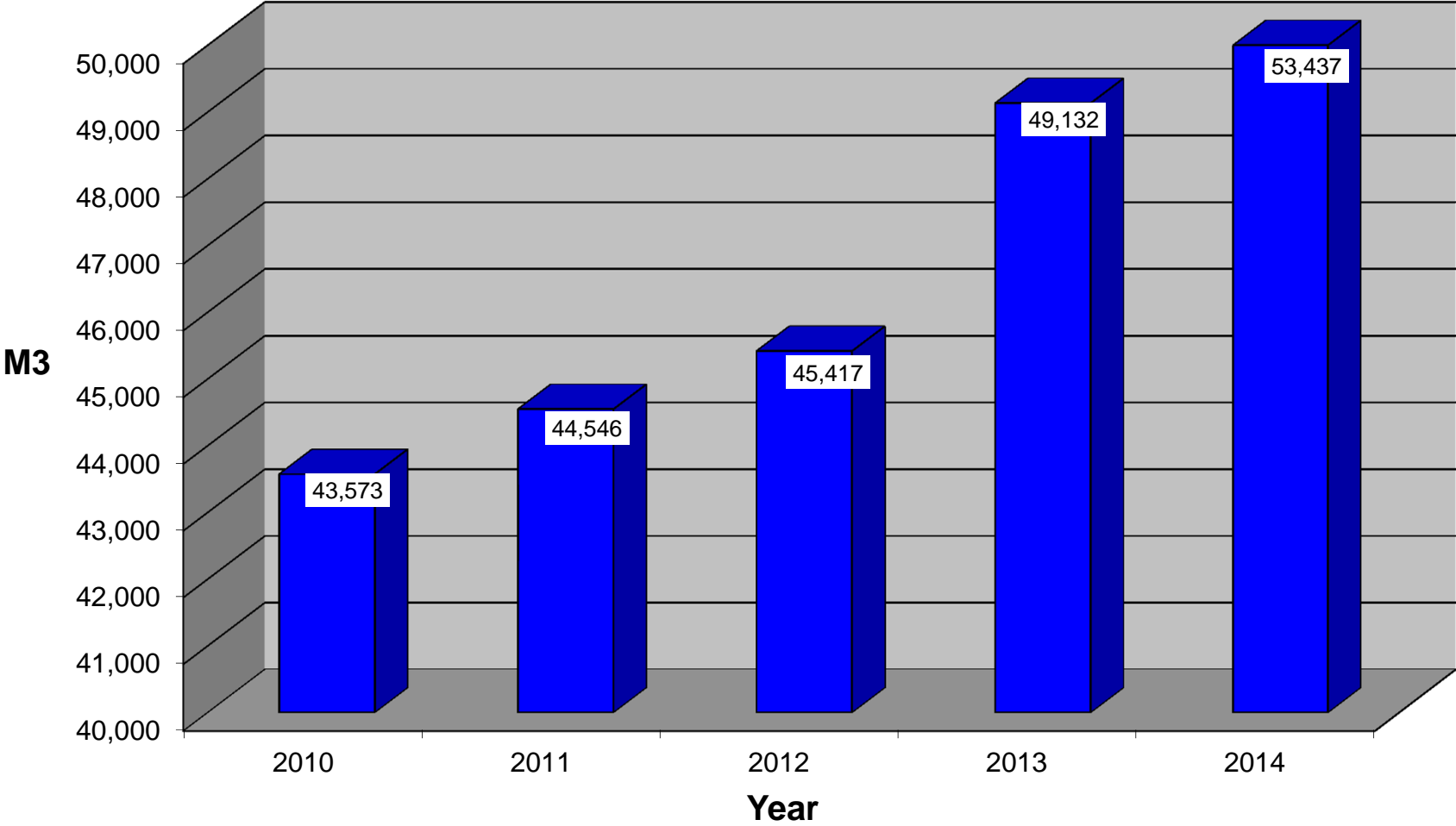
Maximum Day 402

Minimum Day 39

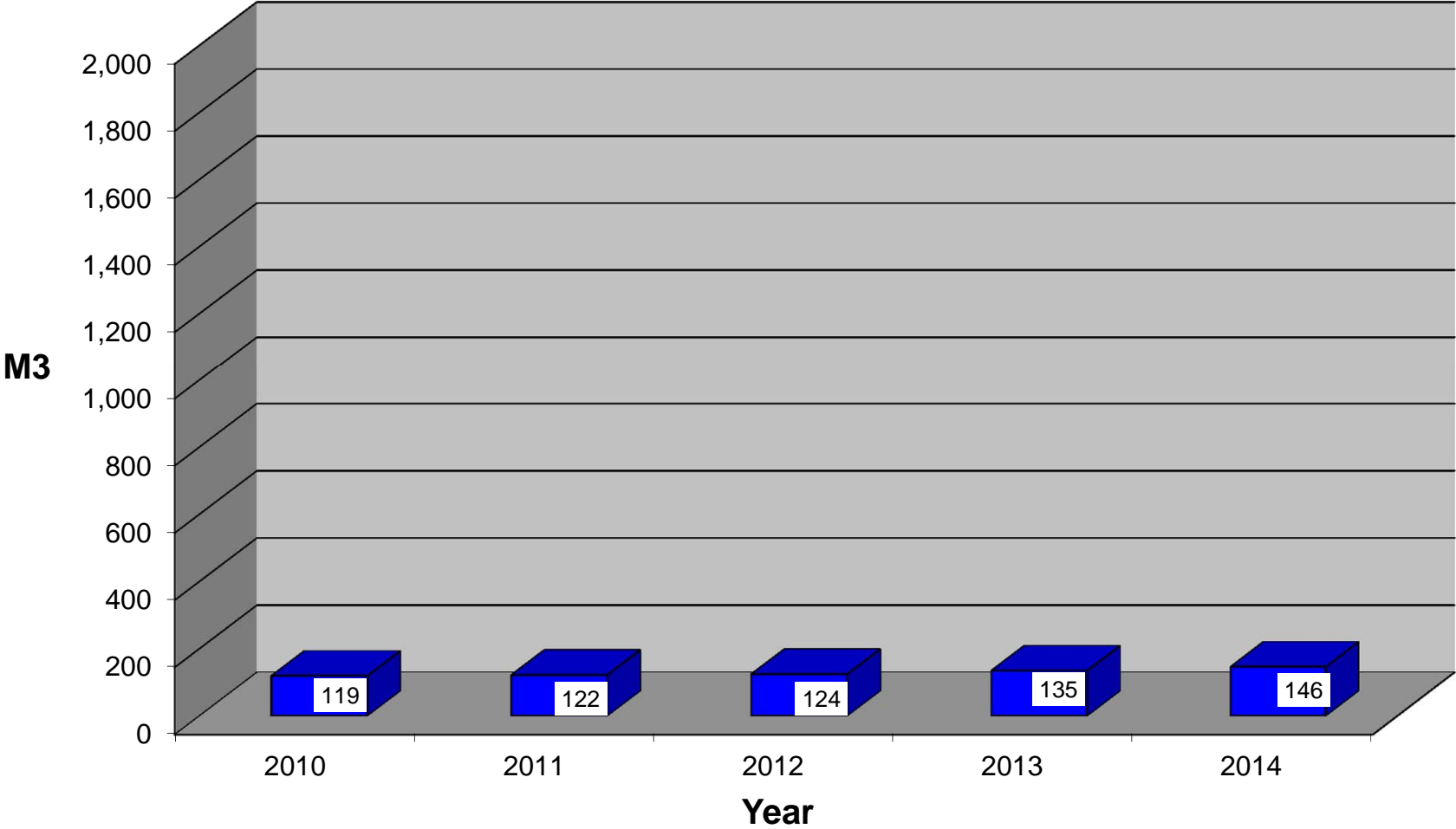
District Municipality of Muskoka  
Port Severn-Lone Pine Dr. Water Treatment Plant  
Monthly Water Production - 2014



District Municipality of Muskoka  
Port Severn-Lone Pine Dr. Water Treatment Plant  
Total Annual Flow 2010-2014



**District Municipality of Muskoka  
Port Severn-Lone Pine Dr. Water Treatment Plant  
Average Day Flow 2010-2014**



**Port Severn 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	~
February	4	4	0	~
March	4	4	0	~
April	5	5	0	~
May	4	4	0	~
June	4	4	0	~
July	5	5	0	~
August	4	4	0	~
September	5	5	0	~
October	4	4	0	~
November	4	4	0	~
December	5	5	0	~

**Port Severn 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	5	5	5	0
May	4	4	4	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 from microbiological results is colony forming units/100 mL (cfu/100/mL)

**Port Severn 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	15	15	10	0
August	12	12	9	0
September	15	15	10	0
October	12	12	8	0
November	12	12	8	0
December	15	15	10	0

<b>PSW1</b>	<b>Water Treatment Plant Raw Water</b>	<b>115 Lone Pine Road</b>
<b>PSW2</b>	<b>Water Treatment Plant Treated Water</b>	<b>115 Lone Pine Road</b>
<b>PSW3</b>	<b>Township of Georgian Bay Office</b>	<b>99 Lone Pine Road</b>
<b>PSW4</b>	<b>Baxter Hall</b>	<b>279 Honey Harbour Road</b>
<b>PSW5</b>	<b>Driftwood Cove</b>	<b>93 Port Severn Road</b>
<b>PSW6</b>	<b>Sewage Pumping Station #1</b>	<b>127 Honey Harbour Road</b>
<b>PSW7</b>	<b>H&amp;S Shell</b>	<b>60 Lone Pine Road</b>
<b>PSW8</b>	<b>Sewage Pumping Station #2</b>	<b>25 Morley's Lane</b>
<b>PSW9</b>	<b>Sample Tap</b>	<b>165 Pt Severn Road</b>
<b>PSW10</b>	<b>Christies Mill's Resort &amp; Spa</b>	<b>263 Port Severn Road</b>
<b>PSW11</b>	<b>Oak Bay Auto Flusher</b>	<b>90 Marina Village Drive</b>
<b>PSW12</b>	<b>Pt Severn Campers Assoc.</b>	<b>164 Lone Pine Road</b>
<b>PSW13</b>	<b>Bressette House</b>	<b>45 Lone Pine Road</b>
<b>PSW14</b>	<b>Township Splash Park</b>	<b>28 Minten's Lane</b>
<b>PSW15</b>	<b>Oak Bay Golf Club House</b>	<b>99 Links Trail</b>
<b>PSW16</b>	<b>Oak Bay Construction Office (house)</b>	<b>18 Country Trail</b>
<b>PSW17</b>	<b>Sunny Lea Cottages</b>	<b>117 Port Severn Road</b>
<b>PSW18</b>	<b>Petro-Can / Tim Horton's</b>	<b>35 Lone Pine Road</b>



## District of Muskoka - Lone Pine Dr. WTP - Port Severn

### 4.0 Treated Water Monthly Analysis Summary - 2014

Month	Alkalinity	Hardness	pH	Turbidity			TRUE Colour	Free Chlorine	Chlorine High	Low	TDS	Langliers Saturation Index	Total Coliforms	E-coli	Total Number of Samples	HPC	Total Number of Samples
Parameter	mg/l	mg/l	pH	ntu	ntu	ntu	tcu	mg/l	mg/l	mg/l	mg/l		CFU/100ml	CFU/100ml		CFU/1ml	
January	54.7	66.1	7.6	0.14	0.16	0.12	0	1.5	1.7	1.3	82	-1.0	0	0	4	0	4
February	61.8	65.3	7.6	0.14	0.17	0.12	0	1.5	1.8	1.3	93	-0.9	0	0	4	0	4
March	68.1	78.8	7.7	0.14	0.16	0.13	0	1.5	1.6	1.3	90.9	1.1	0	0	4	0	4
April	66.8	77.5	7.7	0.15	0.17	0.13	0	1.5	1.8	1.3	104	-0.6	0	0	5	1	5
May	30.7	44.8	7.2	0.13	0.16	0.11	0	1.8	2.4	1.4	47	-2.1	0	0	4	0	4
June	49.1	61.9	7.4	0.12	0.22	0.10	0	1.5	1.9	1.4	73	-1.2	0	0	4	0	4
July	49.7	63.5	7.4	0.12	0.14	0.11	0	1.3	1.6	1.0	173	-1.2	0	0	5	0	5
August	47.4	65.3	7.5	0.14	0.22	0.11	0	1.3	1.5	1.1	140	-1.2	0	0	4	1	4
September	56.5	77.8	7.7	0.15	0.18	0.11	0	1.5	1.8	1.3	90	-0.8	0	0	5	0	5
October	56.0	78.3	7.6	0.12	0.20	0.08	0	1.7	2.1	1.5	98	-0.9	0	0	4	0	4
November	49.3	79.1	7.8	0.13	0.11	0.15	0	1.3	1.6	1.1	92	-0.8	0	0	4	0	4
December	36.6	58.0	7.5	0.12	0.13	0.1	0	1.5	1.7	1.2	70	-1.2	0	0	5	0	5
Average	52.2	68.0	7.5	0.1	0.2	0.1	0.0	1.5	1.8	1.3	96.0	-0.9	0.0	0.0	4.3	0.1	4.3

## District of Muskoka - Lone Pine Dr. WTP - Port Severn

### 7.0 Distribution Water Quarterly Sampling Summary - 2014

<b>Trihalomethanes</b>		1	2	3	4	PSW4	PSW4	PSW4	PSW4		
<i>DW PSW4 Baxter Hall Tap</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>Nov18/14</i>	<i>Average</i>	<i>Max</i>

Trihalomethanes Total	µg/L	100	-	10	8	53	45	85	62	46	85
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<b>Lead</b>		1	2	3	4		PSW4				
<i>DW PSW4 Baxter Hall Tap</i>	<i>Units</i>	<i>MAC/IMAC</i>	<i>AO/OG</i>	<i>ODWS RDL</i>	<i>LRL MDL</i>	<i>Date 1 Q</i>	<i>May 13/14</i>	<i>Date 3 Q</i>	<i>Date 4 Q</i>	<i>Average</i>	<i>Max</i>

Lead	µg/L	-	300	150	20		0.29			0.29	0.29
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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 - Lone Pine Dr. WTP - Port Severn

### 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	0.0	0.0	0.0	0.0	34.5	131
February	0.0	0.0	0.0	0.0	0.0	0.0	34.5	112
March	0.0	0.0	0.0	0.0	0.0	0.0	33.7	118
April	0.0	0.0	0.0	0.0	0.0	0.0	34.6	118
May	0.0	0.0	0.0	0.0	0.0	0.0	35.3	226
June	0.0	0.0	0.0	0.0	0.0	0.0	39.2	343
July	0.0	0.0	0.0	0.0	0.0	0.0	35.9	380
August	0.0	0.0	0.0	0.0	0.0	0.0	38.6	417
September	0.0	0.0	0.0	0.0	0.0	0.0	39.3	290
October	0.0	0.0	0.0	0.0	0.0	0.0	42.4	278
November	0.0	0.0	0.0	0.0	0.0	0.0	36.3	110
December	0.0	0.0	0.0	0.0	0.0	0.0	34.1	116
Average Monthly	0.0	0.0	0.0	0.0	0	0.0	36.5	220
Total Yearly		0		0		0		2,640

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	0.0	0	0.00	0.0	5.86	21.4	0.00	0.0
February	0.0	0	0.00	0.0	5.68	17.4	0.00	0.0
March	0.0	0	0.00	0.0	5.61	18.5	0.00	0.0
April	0.0	0	0.00	0.0	5.68	18.4	0.00	0.0
May	0.0	0	0.00	0.0	3.95	24.0	0.00	0.0
June	0.0	0	0.00	0.0	4.13	35.5	0.00	0.0
July	0.0	0	0.00	0.0	5.46	57.6	0.00	0.0
August	0.0	0	0.00	0.0	5.49	59.2	0.00	0.0
September	0.0	0	0.00	0.0	5.43	38.9	0.00	0.0
October	0.0	0	0.00	0.0	5.18	33.3	0.00	0.0
November	0.0	0	0.00	0.0	5.26	15.2	0.00	0.0
December	0.0	0	0.00	0.0	5.13	16.6	0.00	0.0
Average Monthly	0.0	0	0.00	0	5.08	33	0	0
Total Yearly		0		0		356		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	0.0	0	0.0	0
September	0.0	0	0.0	0
October	0.0	0	0.0	0
November	0.0	0	0.0	0
December	0.0	0	0.0	0
Average Monthly	0.0	0	0.0	0
Total Yearly		0		0

## **Port Severn Water Distribution Summary 2014**

### **New Services:**

Sixteen (16) new customers applied for a permit to connect to existing municipal water services in 2014. All of these new customers are part of the Oak Bay Development,

### **Broken Watermains:**

There were no broken watermains to report in 2014.

### **Service Leaks:**

There were no Municipal services leaks to report in 2014.

### **Frozen services:**

There were no frozen Municipal services to report in 2014.

### **Replacement watermains:**

There were no replacement watermains installed in 2014.

### **New watermains:**

There were no new watermains installed in 2014.

### **Valve Replacement:**

No mainline valve replacements took place in 2014.

### **Fire Hydrants:**

Each of the 39 municipally maintained hydrants in Pt Severn were inspected, operated, and flushed at least once during 2014. All hydrants were pumped dry in the fall, and inspected at least once during the winter months to ensure they are not susceptible to freezing.

### **Meter Installations:**

Sixteen (16) water meters were delivered, to be installed by the contractors building the new Condominiums on Mulligan Lane within the Oak Bay development in 2014.

### **Service Box Maintenance**

No service box repairs were required in 2014.

### **Air-Vacuum Release Valves:**

Six air release/drain chambers were pumped out and the air-vacuum release valves were inspected and checked for proper operation at least once in 2014.

### **Locates:**

Field staff addressed 29 locate requests in 2014.