

# *Kagawong Water Treatment*

Large Municipal Residential Drinking Water System

*January 1, 2015 – December 31, 2015*

***O.Reg 170/03 Schedule 22 Summary Report  
O.Reg 170/03 Section 11 Annual Report  
&  
O.Reg 387/04 Annual Record of Water Taking***

Prepared by the Ontario Clean Water Agency  
For The Corporation of the Township of Billings



**Ontario Clean Water Agency  
Agence Ontarienne Des Eaux**



*Drinking-Water System Number: 220003084*  
*Drinking-Water System Name: KAGAWONG DRINKING WATER SYSTEM*  
*Drinking-Water System Owner: The Corporation of the Township of Billings*  
*Drinking-Water System Category: Large Municipal Residential*

## **SECTION 1: INTRODUCTION**

This document is prepared in accordance with Section 11 and Schedule 22 of O.Reg.170/03 under the Safe Drinking Water Act and with Section 9 of O.Reg.387/04 under the Ontario Water Resources Act. The reports are prepared by the Ontario Clean Water Agency. Acronyms and definitions can be found at the end of the report.

A copy of the Summary Report must be provided to the members of the municipal council by March 31, [2016](#).

## **SECTION 2: REQUIREMENTS OF THE REPORTS**

### **Schedule 22 Report**

The report must list the requirements of the Act, the regulations, the system's approval and any order that the system **failed to meet** at any time during the period covered by the report. It must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

For the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and future planned water uses, the following information is required to be included in this report:

- A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
- A comparison of the summary to the rated capacity and flow rates approved in the systems approval.

### **Section 11 Report**

The annual report must contain the following:

- A brief description of the drinking water system and a list of chemicals used by the system.
- A description of any major expenses incurred during the period covered by the report to install, repair or replace required equipment.
- A summary of all adverse water quality incidents (AWQI) reported to the Ministry
- A summary of corrective actions taken in response all AWQIs
- A summary of all test results required under the regulation, under an approval, municipal drinking water licence or order, including an OWRA order.
- A statement of where a Schedule 22 report will be available for inspection.

The report must be prepared not later than February 28 of the following year.

### **Regulation 387 Report**

On or before March 31 in every year, every holder of a permit to take water (PTTW) shall submit to a Director the data collected and recorded for the previous year.

A record of annual water taking can be found in [Appendix A](#).



## **SECTION 3: SCHEDULE 22 REPORT**

### **Flows**

In accordance with the Municipal Drinking Water License (MDWL), the Kagawong WTP shall not be operated to exceed a maximum daily volume of 1002 m<sup>3</sup>/d to the distribution system.

Daily raw maximum instantaneous flow is stated in the PTTW at a maximum rate of flow of 11.67 L/s and a maximum daily volume of 1008 m<sup>3</sup>/d.

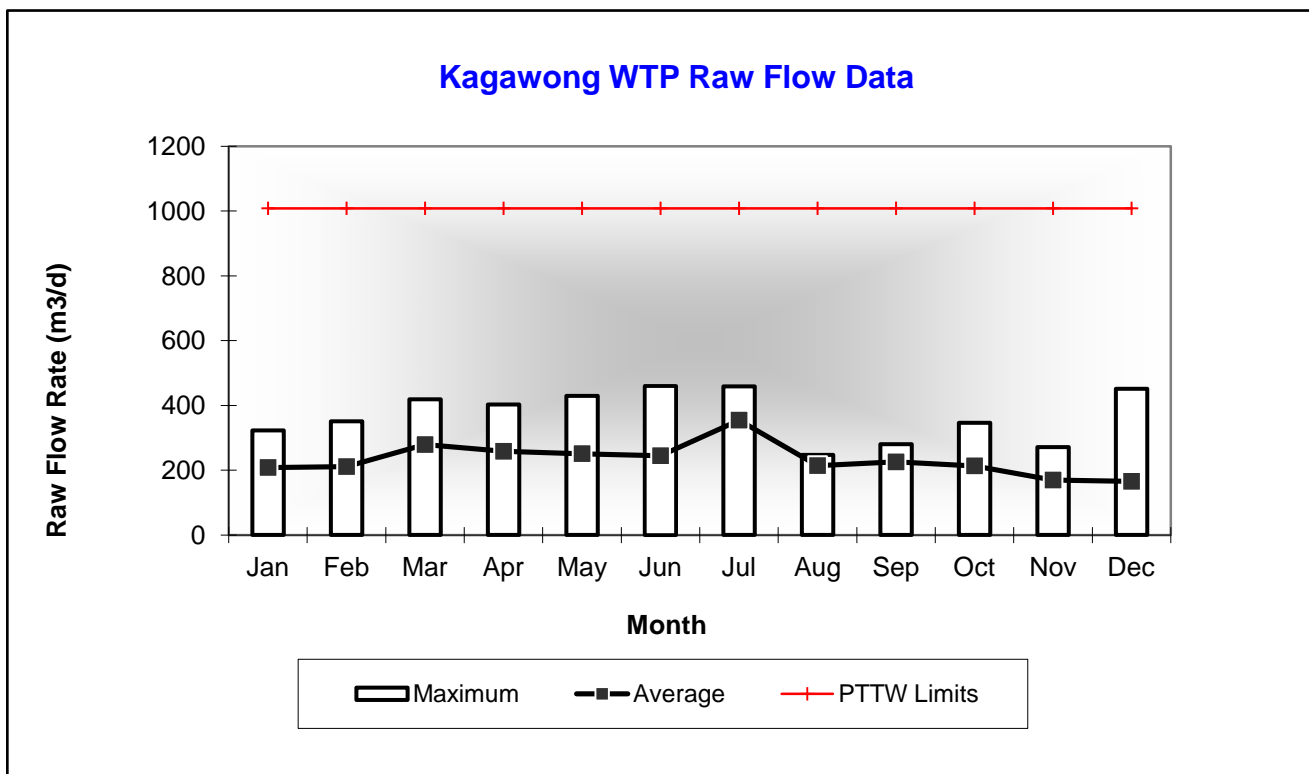
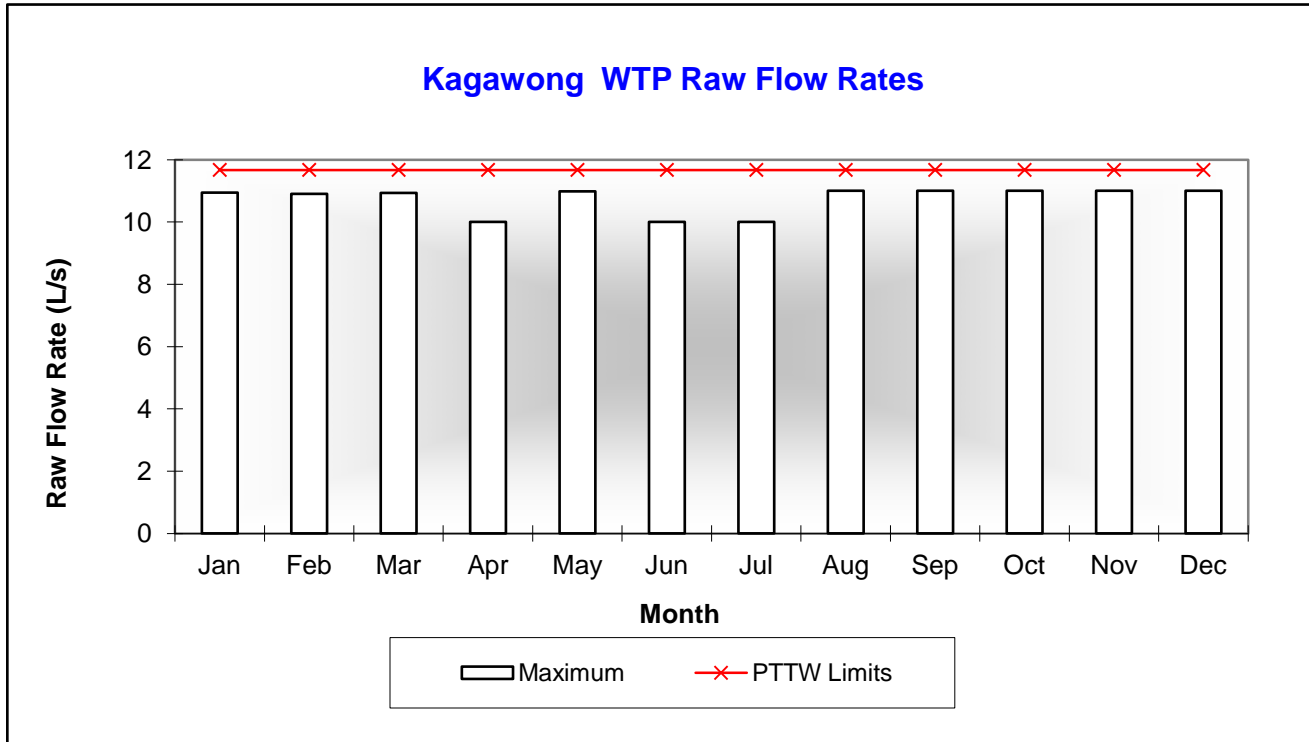
The daily treated water maximum flow was 427.6 m<sup>3</sup> in July and represents 42.7% of capacity.

The average monthly raw water flow for this reporting period was 232.23 m<sup>3</sup>/d. The maximum daily flow was 459.7 m<sup>3</sup>/d representing 45.6% of water taking limits.

The quantity of raw water taken **did not** exceed any limits stipulated within the PTTW based on the information available. After the original membrane system was taken offline and immediately following the commissioning of the new filter in August, flow data was not generated. Total raw flows as well as annual averages are skewed as a result of the missing data.

The quantity of treated water supplied during the reporting period **did not** exceed the rated maximum capacity.

<b>RAW WATER FLOW DATA - TOTAL ALL SOURCES</b>						
<b>Month</b>	<b>Total Monthly Flow (m<sup>3</sup>)</b>	<b>Average Flow (m<sup>3</sup>/d)</b>	<b>Maximum Flow (m<sup>3</sup>/d)</b>	<b>Maximum Flow Rate (L/s)</b>	<b>Limits</b>	
					<b>L/s (PTTW)</b>	<b>m<sup>3</sup>/d (PTTW)</b>
January	6,453.1	208.16	322.5	10.94	11.67	1,008
February	5,907.6	210.99	350.6	10.9	11.67	1,008
March	7,531.3	278.94	418.5	10.93	11.67	1,008
April	4,645.8	258.1	402.5	10.0	11.67	1,008
May	7,779.7	250.96	429.1	10.98	11.67	1,008
June	7,338.1	244.6	459.7	10.0	11.67	1,008
July	9,921.2	354.33	458.4	10.0	11.67	1,008
August	856	214.00	247	11.0	11.67	1,008
September	6,763	225.43	280	11.0	11.67	1,008
October	6,610	213.23	346	11.0	11.67	1,008
November	4,915	169.48	271	11.0	11.67	1,008
December	5,127	165.39	451	11.0	11.67	1,008
<b>Total</b>	<b>73,847.8</b>					
<b>Average</b>		<b>232.23</b>				
<b>Maximum</b>			<b>459.7</b>	<b>11.0</b>	11.67	1,008





## Annual Raw Water Review

Raw Water Taking	Total Taking m3/d	Average Day m3/d	Max Day m3/d	Max Day % of PTTW allowable 1008 m3/d
2015	73,847.8*	232	460	45.6%
2014	81,982.4	225	495	49.1%
2013	136,580.4	377	743	73.7%
2012	154,543.3	422	692	68.6%
2011	158,454.0	434	877	87.0%
2010	127,099.0	356	767	76.1%
2009	132,853.0	364	675	66.9%

\*Based on available flow data

## System Failures and Corrective Actions

The latest inspection of the drinking water facility took place on **June 9, 2015**. The facility scored **0/758** providing a rating of **100%**.

### AWQIs reported to the Ministry

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
July 2015	Filter Efficiency	94.6	%	Failed monthly efficiency occurred during plant upgrades when facility was not running at optimal performance. No corrective actions were required.	N/A
August 2015	Filter Efficiency	98.82	%	Failed monthly efficiency occurred during plant upgrades when facility was not running at optimal performance. No corrective actions were required. New facility was online as of Aug 27, 2015	N/A
November 2015	Filter Efficiency	97.61	%	Failed monthly efficiency due to trial runs on filters. Trial runs found a crack in a fitting. Fitting was provided by GE.	4-Dec-15
21-Oct-15	TC	316	CFU/100mL	Operator believed labelling of samples was the problem. Health unit asked that a resample be taken.	26-oct-15
10-Nov-15	Pressure	0	PSI	BWA issued. A valve repair caused 2 homes to be without water. Bacti sampling took place after repairs.	13-Nov-15



## **SECTION 4: SECTION 11 REPORT**

### **Information to be provided**

Population Served	<b>350</b>
Does your Drinking-Water System serve more than 10,000 people?	<b>No</b>
Is your annual report available to the public at no charge on a web site on the Internet?	<b>Yes</b>
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	<b>Township of Billings, Township Office 15 Old Mill Road Kagawong, Ontario POP 1J0</b>
Number of Designated Facilities served:	<b>0</b>
Did you provide a copy of your annual report to all Designated Facilities you serve?	<b>NA</b>
Number of Interested Authorities you report to:	<b>0</b>
Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?	<b>NA</b>
List all Drinking-Water Systems (if any), and their DWS Number which receive all of their drinking water from your system:	<b>N/A</b>
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?	<b>N/A</b>
Indicate how you notified system users that your annual report is available, and is free of charge.	<b>Public access/notice via newspaper</b>
Indicate if you notified system users that your annual report is available and is free of charge using an alternate method	<b>Yes</b>

### **Facility Description**

The Kagawong Water treatment facility consists of a low lift pumping station with three submersible pumps. The low lift pumping station includes a zebra mussel control system utilizing sodium hypochlorite.

Prior to Aug 27, 2015, treatment consisted of membrane filtration comprised of two concrete tanks each having six ultrafiltration units. Each unit contained 12 modules with a filtering area of 23.23 m<sup>2</sup>. There were three permeate pumps used to push the water to the chlorine contact chamber.

An upgrade to the membrane system was completed in 2015. The membrane system now consists of 2 ultrafiltration zeebox package units. By August 2<sup>nd</sup>, 1 unit was online and providing water to the distribution while the second unit was online by November 2<sup>nd</sup>.

The contact chamber maintains a constant volume of 162 m<sup>3</sup>. Following the chlorine contact chamber there are two clear wells, each having a storage volume of 749.8 m<sup>3</sup>. The high lift pumping consists of four centrifugal high lift pumps, with two pumps having a capacity of 57.87 L/s and two pumps having a capacity of 28.94 L/s. The process back pulse & reject water from the plant is de-chlorinated and discharged back to the North Channel.



## Chemicals Used

Sodium Hypochlorite (12%)	Disinfection and clean-in-place
Sodium Hydroxide	Neutralization of wastewater
Citric Acid	Clean-in-place
Calcium Thiosulphate (Captor)	Dechlorination of reject water & wastewater

## Significant Expenses

Significant expenses incurred to

- Install required equipment
- Repair required equipment
- Replace required equipment

Work Order	Completion Date	Comment
3296882	25-June-15	DUAL CHEMICAL PUMP PANELS FOR MEMBRANE UPGRADE PROJECT
3296884	25-june-15	SPARE PARTS KIT FOR CHEMICAL PUMP PANELS
3368304	6-Jul-15	NEW SUMP PUMP FOR BASEMENT Had order 1 sump pump for basement .The lower cost units keep burning out.Bought a better quality ine.Then the other unit burnt out before the first new one arrived.Ordered a second unit.
7350	27-Oct-15	'FIRE ALARM PANEL REPLACED Replacement of faulty fire alarm panel by SPI.
	2015	'MEMBRANE UPGRADE PROJECT
17416	08-Dec-15	'RAW WATER PH PROBE
6669	15-Sep-15	Rebuild and retest Backflow preventer on tempered water system

## Adverse Water Quality Incidents

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	Comment / Corrective Action	Corrective Action Date
July 2015	Filter Efficiency	94.6	%	Failed monthly efficiency occurred during plant upgrades when facility was not running at optimal performance. No corrective actions were required.	N/A
August 2015	Filter Efficiency	98.82	%	Failed monthly efficiency occurred during plant upgrades when facility was not running at optimal performance. No corrective actions were required.	N/A
November 2015	Filter Efficiency	97.61	%	Failed monthly efficiency due to trial runs on filters. Trial runs found a crack in a fitting. Fitting was provided by GE.	4-Dec-15
21-Oct-15	TC	316	CFU/100 mL	Operator believed labelling of samples was the problem. Resample was performed.	26-oct-15
10-Nov-15	Pressure	0	PSI	BWA issued. A valve repair caused 2 homes to be without water. Bacti sampling took place after repairs.	13-Nov-15



**Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03.**

	No. of Samples Collected	Range of E.Coli		Range of Total Coliform Results		Number of HPC Samples	Range of HPC Results	
		Min #	Max #	Min #	Max #		Min #	Max #
Raw Water	54	0	46	0	150	N/A	N/A	N/A
Treated Water	54	0	0	0	0	54	0	1420
Distribution	130	0	0	0	0	55	0	480

**Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03**

	No. of Samples Collected	Range of Results		Units of Measure
		Minimum	Maximum	
Turbidity – Filter 1 (Jan – Aug)	8760	0	0.07	(NTU)
Turbidity – Filter 2 (Jan – Aug)	8760	0	2	(NTU)
Turbidity – Filter 3 (Jan – Aug)	8760	0	2	(NTU)
Turbidity – Filter 1 (Sep – Dec)	8760	0	0.29	(NTU)
Turbidity – Filter 2 (Sep – Dec)	8760	0	0.69	(NTU)
Free Chlorine Residual – TW	8760	0	3.42	(mg/L)
Free Chlorine Residual, Distribution Location 1	92	0.69	2.01	(mg/L)
Free Chlorine Residual, Distribution Location 2	94	0.6	2.06	(mg/L)
Free Chlorine Residual, Distribution Location 3	89	0.66	1.88	(mg/L)
Free Chlorine Residual, Distribution Location 4	40	0.77	1.83	(mg/L)

**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 and limits	Month Sampled	Day Sampled	Result	Unit of Measure
255-101 Issue 1  May 24, 2011	Point of discharge from the backwash reservoir Total Suspended Solids  25 mg/L (annual average)	Jan	5	2.0	mg/L
		Feb	2	2.0	mg/L
		Mar	2	2.0	mg/L
		Apr	7	2.0	mg/L
		May	4	2.0	mg/L
		Jun	1	2.0	mg/L
		Jul	6	2.0	mg/L
		Aug	4	2.0	mg/L
		Sep	8	10.0	mg/L
		Oct	5	13.0	mg/L
		Nov	2	3.0	mg/L
		Dec	7	4.0	mg/L
		<b>Annual Average</b>			





**Summary of Inorganic parameters tested during this reporting period or the most recent sample results**

TREATED WATER	Sample Date (mm/dd/yyyy)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	1/5/2015	0.09	6.0	No	No
Arsenic: As (ug/L) - TW	1/5/2015	0.5	25.0	No	No
Barium: Ba (ug/L) - TW	1/5/2015	28.2	1000.0	No	No
Boron: B (ug/L) - TW	1/5/2015	75.3	5000.0	No	No
Cadmium: Cd (ug/L) - TW	1/5/2015	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	1/5/2015	<MDL 0.03	50.0	No	No
Mercury: Hg (ug/L) - TW	1/5/2015	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	1/5/2015	<MDL 1.0	10.0	No	No
Uranium: U (ug/L) - TW	1/5/2015	0.176	20.0	No	No

TREATED WATER	Sample Date (mm/dd/yyyy)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Fluoride (mg/L) - TW	1/8/2013	0.07	1.5	No	No
Nitrite (mg/L) - TW	1/7/2015	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	4/9/2015	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	7/13/2015	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	10/13/2015	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	1/7/2015	0.204	10.0	No	No
Nitrate (mg/L) - TW	4/9/2015	0.223	10.0	No	No
Nitrate (mg/L) - TW	7/13/2015	0.17	10.0	No	No
Nitrate (mg/L) - TW	10/13/2015	0.137	10.0	No	No
Sodium: Na (mg/L) - TW	1/17/2011	6.16	20*	No	No

\*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

**Summary of Lead testing under Schedule 15.1 during this reporting period**

Location Type	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
		Minimum	Maximum		
Distribution - Lead Results (ug/L)	0	N/A	N/A	10	0
Distribution - Alkalinity (mg/L)	2	66	71	N/A	N/A
Distribution - pH In-House	2	8.1	8.4	N/A	N/A



**Summary of Organic parameters sampled during this reporting period or the most recent results**

TREATED WATER	Sample Date (mm/dd/yyyy)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	1/5/2015	<MDL 0.02	5.00	No	No
Aldicarb (ug/L) - TW	1/5/2015	<MDL 0.01	9.00	No	No
Aldrin+Dieldrin (ug/L) - TW	1/5/2015	<MDL 0.01	0.70	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	1/5/2015	0.010	5.00	No	No
Azinphos-methyl (ug/L) - TW	1/5/2015	<MDL 0.02	20.00	No	No
Bendiocarb (ug/L) - TW	1/5/2015	<MDL 0.01	40.00	No	No
Benzene (ug/L) - TW	1/5/2015	<MDL 0.32	5.00	No	No
Benzo(a)pyrene (ug/L) - TW	1/5/2015	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	1/5/2015	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	1/5/2015	<MDL 0.01	90.00	No	No
Carbofuran (ug/L) - TW	1/5/2015	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	1/5/2015	<MDL 0.16	5.00	No	No
Chlordane: Total (ug/L) - TW	1/5/2015	<MDL 0.01	7.00	No	No
Chlorpyrifos (ug/L) - TW	1/5/2015	<MDL 0.02	90.00	No	No
Cyanazine (ug/L) - TW	1/5/2015	<MDL 0.03	10.00	No	No
Diazinon (ug/L) - TW	1/5/2015	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	1/5/2015	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	1/5/2015	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	1/5/2015	<MDL 0.36	5.00	No	No
DDT + metabolites (ug/L) - TW	1/5/2015	<MDL 0.01	30.00	No	No
1,2-Dichloroethane (ug/L) - TW	1/5/2015	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	1/5/2015	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	1/5/2015	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	1/5/2015	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	1/5/2015	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	1/5/2015	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	1/5/2015	<MDL 0.03	20.00	No	No
Dinoseb (ug/L) - TW	1/5/2015	<MDL 0.36	10.00	No	No
Diquat (ug/L) - TW	1/5/2015	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	1/5/2015	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	1/5/2015	<MDL 1.0	280.00	No	No
Heptachlor+hepachlor epoxide (ug/L) - TW	1/5/2015	<MDL 0.01	3.00	No	No
Lindane (ug/L) - TW	1/5/2015	<MDL 0.01	4.00	No	No
Malathion (ug/L) - TW	1/5/2015	<MDL 0.02	190.00	No	No
Methoxychlor (ug/L) - TW	1/5/2015	<MDL 0.01	900.00	No	No
Metolachlor (ug/L) - TW	1/5/2015	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	1/5/2015	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	1/5/2015	<MDL 0.3	80.00	No	No



Paraquat (ug/L) - TW	1/5/2015	<MDL 1.0	10.00	No	No
Parathion (ug/L) - TW	1/5/2015	<MDL 0.02	50.00	No	No
PCB (ug/L) - TW	1/5/2015	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	1/5/2015	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	1/5/2015	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	1/5/2015	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	1/5/2015	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	1/5/2015	<MDL 0.01	10.00	No	No
Temephos (ug/L) - TW	1/5/2015	<MDL 0.01	280.00	No	No
Terbufos (ug/L) - TW	1/5/2015	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	1/5/2015	<MDL 0.35	30.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	1/5/2015	<MDL 0.14	100.00	No	No
Triallate (ug/L) - TW	1/5/2015	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	1/5/2015	<MDL 0.44	50.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	1/5/2015	<MDL 0.25	5.00	No	No
2,4,5-T (ug/L) - TW	1/5/2015	<MDL 0.22	280.00	No	No
Trifluralin (ug/L) - TW	1/5/2015	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	1/5/2015	<MDL 0.17	2.00	No	No
<b>DISTRIBUTION WATER</b>					
Trihalomethane: Total (ug/L) Annual Average - DW	12/31/2015	64.75	100.00	No	Yes

## **SECTION 5: RAW WATER SUBMISSIONS**

Raw water flows have not yet been submitted. Information has been uploaded to the MOECC's Water Taking Reporting System however the data cannot be submitted due to errors within their system. Flow submissions are required to be completed by March 31, 2016.

## **SECTION 6: CONCLUSION**

The Kagawong WTP delivers water that, in all its treated and distribution samples, indicates the water to be free of bacteriological contamination.

For the 2015 operating year, the Kagawong WTP was able to meet the demand of water use without exceeding the PTTW or the MDWL based on information available.



## List of Acronyms and Definitions

Alkalinity	The capacity of water for neutralizing an acid solution
AWQI	Adverse Water Quality Incident- when a water sample test result exceeds the Ontario Drinking Water Quality Standards
Backwash	Water pumped backwards to clean filters
BWA	Boil Water Advisory; Issued when risk of contamination is possible in drinking water
CFU	Colony Forming Units
Chlorine Residual	A low level of chlorine remaining in water after disinfection occurs
DW	Distribution Water
DWA	Drinking Water Advisory; Issued when water cannot be consumed by any means
DWWP	Drinking Water Works Permit - provides a description of the overall system
E.Coli	Bacteria used as indicators to measure the degree of pollution and sanitary quality of water
GUDI	Groundwater Under Direct Influence – Considered to be surface water under O.Reg 170/03
HPC	Heterotrophic Plant Count
L/s	Litres per Second
m <sup>3</sup> /d	Cubic Metres per Day
MAC	Maximum Acceptable Concentration
MDL	Minimum Detection Level
MDWL	Municipal Drinking Water Licence - relates to the operation and performance requirements
mg/L	Miligrams per Litre
Ministry	Ministry of the Environment and Climate Change
MOECC	Ministry of the Environment and Climate Change
O.Reg	Ontario Regulation
PTTW	Permit to Take Water – Permit which allows water taking from groundwater or surface water
RW	Raw Water
TC	Total Coliforms
TSS	Total Suspended Solids
Turbidity	Cloudiness or haziness of water
TW	Treated Water



# **Appendix A**

## **Raw Water Flows**

**Ontario Clean Water Agency**  
**Annual Water Taking and Transfer Report**

From 01/01/2015 To 12/31/2015

Facility: KAGAWONG DRINKING WATER SYSTEM-1010  
Tag: Raw Flow: Sum (m3/d)  
Tag Group: Raw Water

Permit#: 7363-7SXNEP  
Source Name: North Channel of Lake Huron (Mudge Bay)  
Source: Lake  
Type:  
Purpose: Municipal

Coordinate Zone: 17  
Easting: 401405  
Northing: 5085124  
Method deter: Metered

<u>Date Measured</u>	<u>Value (m<sup>3</sup>/d)</u>	<u>Value (Litres)</u>
1/01/2015	151.2000	151200.0000
1/02/2015	212.3000	212300.0000
1/03/2015	133.7000	133700.0000
1/04/2015	219.3000	219300.0000
1/05/2015	322.0000	322000.0000
1/06/2015	151.4000	151400.0000
1/07/2015	274.1000	274100.0000
1/08/2015	198.0000	198000.0000
1/09/2015	215.1000	215100.0000
1/10/2015	223.8000	223800.0000
1/11/2015	189.5000	189500.0000
1/12/2015	131.9000	131900.0000
1/13/2015	201.8000	201800.0000
1/14/2015	209.5000	209500.0000
1/15/2015	171.0000	171000.0000
1/16/2015	322.5000	322500.0000
1/17/2015	148.2000	148200.0000
1/18/2015	222.0000	222000.0000
1/19/2015	238.0000	238000.0000
1/20/2015	139.9000	139900.0000
1/21/2015	238.6000	238600.0000
1/22/2015	253.1000	253100.0000
1/23/2015	189.5000	189500.0000
1/24/2015	224.7000	224700.0000
1/25/2015	138.5000	138500.0000
1/26/2015	220.9000	220900.0000
1/27/2015	261.6000	261600.0000
1/28/2015	209.5000	209500.0000
1/29/2015	215.3000	215300.0000
1/30/2015	211.9000	211900.0000
1/31/2015	214.3000	214300.0000
2/01/2015	203.1000	203100.0000
2/02/2015	199.5000	199500.0000

# Ontario Clean Water Agency Annual Water Taking and Transfer Report

From 01/01/2015 To 12/31/2015

Facility: KAGAWONG DRINKING WATER SYSTEM-1010  
Tag: Raw Flow: Sum (m3/d)  
Tag Group: Raw Water

Permit#: 7363-7SXNEP  
Source Name: North Channel of Lake Huron (Mudge Bay)  
Source: Lake  
Type:  
Purpose: Municipal

Coordinate Zone: 17  
Easting: 401405  
Northing: 5085124  
Method deter: Metered

2/03/2015	172.3000	172300.0000
2/04/2015	166.9000	166900.0000
2/05/2015	167.3000	167300.0000
2/06/2015	236.9000	236900.0000
2/07/2015	208.8000	208800.0000
2/08/2015	206.2000	206200.0000
2/09/2015	214.9000	214900.0000
2/10/2015	138.6000	138600.0000
2/11/2015	208.6000	208600.0000
2/12/2015	243.3000	243300.0000
2/13/2015	204.8000	204800.0000
2/14/2015	208.2000	208200.0000
2/15/2015	209.2000	209200.0000
2/16/2015	209.3000	209300.0000
2/17/2015	283.2000	283200.0000
2/18/2015	240.9000	240900.0000
2/19/2015	230.9000	230900.0000
2/20/2015	126.8000	126800.0000
2/21/2015	208.8000	208800.0000
2/22/2015	207.8000	207800.0000
2/23/2015	217.8000	217800.0000
2/24/2015	201.5000	201500.0000
2/25/2015	350.6000	350600.0000
2/26/2015	280.9000	280900.0000
2/27/2015	149.1000	149100.0000
2/28/2015	211.4000	211400.0000
3/01/2015	262.4000	262400.0000
3/02/2015	329.0000	329000.0000
3/03/2015	116.3000	116300.0000
3/04/2015	223.6000	223600.0000
3/05/2015	276.8000	276800.0000
3/06/2015	315.9000	315900.0000
3/07/2015	162.1000	162100.0000
3/08/2015	291.0000	291000.0000
3/09/2015	304.5000	304500.0000

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From 01/01/2015 To 12/31/2015

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Purpose: Municipal

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Easting: 401405  
Northing: 5085124  
Method deter: Metered

3/10/2015	279.8000	279800.0000
3/11/2015	171.3000	171300.0000
3/12/2015	217.7000	217700.0000
3/13/2015	345.1000	345100.0000
3/14/2015	347.5000	347500.0000
3/15/2015	206.1000	206100.0000
3/16/2015	341.8000	341800.0000
3/17/2015	344.7000	344700.0000
3/18/2015	217.1000	217100.0000
3/19/2015	252.2000	252200.0000
3/20/2015	299.5000	299500.0000
3/21/2015	347.5000	347500.0000
3/22/2015	129.0000	129000.0000
3/23/2015	323.4000	323400.0000
3/24/2015	326.9000	326900.0000
3/25/2015		
3/26/2015	379.4000	379400.0000
3/27/2015		
3/28/2015		
3/29/2015		
3/30/2015	302.2000	302200.0000
3/31/2015	418.5000	418500.0000
4/01/2015		
4/02/2015		
4/03/2015		
4/04/2015		
4/05/2015	402.5000	402500.0000
4/06/2015		
4/07/2015		
4/08/2015		
4/09/2015		
4/10/2015	340.1000	340100.0000
4/11/2015		
4/12/2015		
4/13/2015		



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Purpose: Municipal

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Method deter: Metered

4/14/2015		
4/15/2015	235.6000	235600.0000
4/16/2015	235.6000	235600.0000
4/17/2015	210.6000	210600.0000
4/18/2015	213.1000	213100.0000
4/19/2015	185.1000	185100.0000
4/20/2015	248.2000	248200.0000
4/21/2015	250.8000	250800.0000
4/22/2015	187.2000	187200.0000
4/23/2015	258.6000	258600.0000
4/24/2015	285.4000	285400.0000
4/25/2015	287.9000	287900.0000
4/26/2015	183.2000	183200.0000
4/27/2015	306.6000	306600.0000
4/28/2015	309.2000	309200.0000
4/29/2015	334.5000	334500.0000
4/30/2015	171.6000	171600.0000
5/01/2015	174.1000	174100.0000
5/02/2015	288.9000	288900.0000
5/03/2015	1.4000	1400.0000
5/04/2015	253.4000	253400.0000
5/05/2015	294.9000	294900.0000
5/06/2015	240.8000	240800.0000
5/07/2015	243.3000	243300.0000
5/08/2015	244.7000	244700.0000
5/09/2015	247.4000	247400.0000
5/10/2015	290.8000	290800.0000
5/11/2015	23.8000	23800.0000
5/12/2015	211.8000	211800.0000
5/13/2015	364.8000	364800.0000
5/14/2015	367.4000	367400.0000
5/15/2015	252.2000	252200.0000
5/16/2015	228.5000	228500.0000
5/17/2015	115.4000	115400.0000
5/18/2015	218.8000	218800.0000

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From 01/01/2015 To 12/31/2015

Facility: KAGAWONG DRINKING WATER SYSTEM-1010  
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Source: Lake  
Type:  
Purpose: Municipal

Coordinate Zone: 17  
Easting: 401405  
Northing: 5085124  
Method deter: Metered

5/19/2015	346.2000	346200.0000
5/20/2015	348.9000	348900.0000
5/21/2015	0.0000	0.0000
5/22/2015	299.3000	299300.0000
5/23/2015	426.5000	426500.0000
5/24/2015	429.1000	429100.0000
5/25/2015	279.1000	279100.0000
5/26/2015	319.5000	319500.0000
5/27/2015	322.5000	322500.0000
5/28/2015	239.9000	239900.0000
5/29/2015	281.0000	281000.0000
5/30/2015	206.6000	206600.0000
5/31/2015	218.7000	218700.0000
6/01/2015	220.1000	220100.0000
6/02/2015	226.3000	226300.0000
6/03/2015	23.7000	23700.0000
6/04/2015	275.9000	275900.0000
6/05/2015	350.6000	350600.0000
6/06/2015	168.0000	168000.0000
6/07/2015	218.3000	218300.0000
6/08/2015	241.8000	241800.0000
6/09/2015	216.8000	216800.0000
6/10/2015	219.6000	219600.0000
6/11/2015	202.9000	202900.0000
6/12/2015	200.0000	200000.0000
6/13/2015	139.6000	139600.0000
6/14/2015	0.0000	0.0000
6/15/2015	447.2000	447200.0000
6/16/2015	450.1000	450100.0000
6/17/2015	311.8000	311800.0000
6/18/2015	219.3000	219300.0000
6/19/2015	210.2000	210200.0000
6/20/2015	214.4000	214400.0000
6/21/2015	217.2000	217200.0000
6/22/2015	136.5000	136500.0000

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Permit#: 7363-7SXNEP  
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Source: Lake  
Type:  
Purpose: Municipal

Coordinate Zone: 17  
Easting: 401405  
Northing: 5085124  
Method deter: Metered

6/23/2015	289.2000	289200.0000
6/24/2015	311.8000	311800.0000
6/25/2015	223.5000	223500.0000
6/26/2015	226.5000	226500.0000
6/27/2015	1.0000	1000.0000
6/28/2015	456.8000	456800.0000
6/29/2015	459.7000	459700.0000
6/30/2015	459.3000	459300.0000
7/01/2015	307.1000	307100.0000
7/02/2015	279.0000	279000.0000
7/03/2015	282.1000	282100.0000
7/04/2015	416.3000	416300.0000
7/05/2015	419.4000	419400.0000
7/06/2015	455.9000	455900.0000
7/07/2015	458.4000	458400.0000
7/08/2015	14.4000	14400.0000
7/09/2015	218.0000	218000.0000
7/10/2015	421.0000	421000.0000
7/11/2015	424.1000	424100.0000
7/12/2015	424.0000	424000.0000
7/13/2015	421.3000	421300.0000
7/14/2015	400.3000	400300.0000
7/15/2015	377.9000	377900.0000
7/16/2015	391.4000	391400.0000
7/17/2015	394.5000	394500.0000
7/18/2015	317.6000	317600.0000
7/19/2015	320.7000	320700.0000
7/20/2015	302.3000	302300.0000
7/21/2015	300.9000	300900.0000
7/22/2015	341.5000	341500.0000
7/23/2015	381.7000	381700.0000
7/24/2015	392.5000	392500.0000
7/25/2015	393.9000	393900.0000
7/26/2015	393.6000	393600.0000
7/27/2015	395.4000	395400.0000

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Source: Lake  
Type:  
Purpose: Municipal

Coordinate Zone: 17  
Easting: 401405  
Northing: 5085124  
Method deter: Metered

7/28/2015	276.0000	276000.0000
7/29/2015		
7/30/2015		
7/31/2015		
8/01/2015		
8/02/2015		
8/03/2015		
8/04/2015		
8/05/2015		
8/06/2015		
8/07/2015		
8/08/2015		
8/09/2015		
8/10/2015		
8/11/2015		
8/12/2015		
8/13/2015		
8/14/2015		
8/15/2015		
8/16/2015		
8/17/2015		
8/18/2015		
8/19/2015		
8/20/2015		
8/21/2015		
8/22/2015		
8/23/2015		
8/24/2015		
8/25/2015		
8/26/2015		
8/27/2015		
8/28/2015	164.0000	164000.0000
8/29/2015	238.0000	238000.0000
8/30/2015	247.0000	247000.0000
8/31/2015	207.0000	207000.0000

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Source: Lake  
Type:  
Purpose: Municipal

Coordinate Zone: 17  
Easting: 401405  
Northing: 5085124  
Method deter: Metered

9/01/2015	200.0000	200000.0000
9/02/2015	229.0000	229000.0000
9/03/2015	225.0000	225000.0000
9/04/2015	249.0000	249000.0000
9/05/2015	233.0000	233000.0000
9/06/2015	280.0000	280000.0000
9/07/2015	227.0000	227000.0000
9/08/2015	182.0000	182000.0000
9/09/2015	225.0000	225000.0000
9/10/2015	214.0000	214000.0000
9/11/2015	178.0000	178000.0000
9/12/2015	261.0000	261000.0000
9/13/2015	192.0000	192000.0000
9/14/2015	249.0000	249000.0000
9/15/2015	205.0000	205000.0000
9/16/2015	229.0000	229000.0000
9/17/2015	224.0000	224000.0000
9/18/2015	206.0000	206000.0000
9/19/2015	216.0000	216000.0000
9/20/2015	227.0000	227000.0000
9/21/2015	223.0000	223000.0000
9/22/2015	246.0000	246000.0000
9/23/2015	210.0000	210000.0000
9/24/2015	207.0000	207000.0000
9/25/2015	210.0000	210000.0000
9/26/2015	240.0000	240000.0000
9/27/2015	256.0000	256000.0000
9/28/2015	252.0000	252000.0000
9/29/2015	233.0000	233000.0000
9/30/2015	235.0000	235000.0000
10/01/2015	264.0000	264000.0000
10/02/2015	216.0000	216000.0000
10/03/2015	257.0000	257000.0000
10/04/2015	205.0000	205000.0000
10/05/2015	233.0000	233000.0000

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Purpose: Municipal

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Northing: 5085124  
Method deter: Metered

10/06/2015	232.0000	232000.0000
10/07/2015	346.0000	346000.0000
10/08/2015	341.0000	341000.0000
10/09/2015	269.0000	269000.0000
10/10/2015	221.0000	221000.0000
10/11/2015	255.0000	255000.0000
10/12/2015	270.0000	270000.0000
10/13/2015	244.0000	244000.0000
10/14/2015	187.0000	187000.0000
10/15/2015	197.0000	197000.0000
10/16/2015	195.0000	195000.0000
10/17/2015	201.0000	201000.0000
10/18/2015	202.0000	202000.0000
10/19/2015	146.0000	146000.0000
10/20/2015	140.0000	140000.0000
10/21/2015	207.0000	207000.0000
10/22/2015	210.0000	210000.0000
10/23/2015	229.0000	229000.0000
10/24/2015	203.0000	203000.0000
10/25/2015	166.0000	166000.0000
10/26/2015	141.0000	141000.0000
10/27/2015	194.0000	194000.0000
10/28/2015	194.0000	194000.0000
10/29/2015	144.0000	144000.0000
10/30/2015	144.0000	144000.0000
10/31/2015	157.0000	157000.0000
11/01/2015		
11/02/2015	188.0000	188000.0000
11/03/2015	132.0000	132000.0000
11/04/2015	160.0000	160000.0000
11/05/2015	252.0000	252000.0000
11/06/2015	178.0000	178000.0000
11/07/2015	182.0000	182000.0000
11/08/2015	199.0000	199000.0000
11/09/2015	192.0000	192000.0000

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Type:  
Purpose: Municipal

Coordinate Zone: 17  
Easting: 401405  
Northing: 5085124  
Method deter: Metered

11/10/2015	217.0000	217000.0000
11/11/2015	133.0000	133000.0000
11/12/2015	159.0000	159000.0000
11/13/2015	107.0000	107000.0000
11/14/2015	234.0000	234000.0000
11/15/2015	150.0000	150000.0000
11/16/2015	133.0000	133000.0000
11/17/2015	129.0000	129000.0000
11/18/2015	271.0000	271000.0000
11/19/2015	127.0000	127000.0000
11/20/2015	164.0000	164000.0000
11/21/2015	129.0000	129000.0000
11/22/2015	215.0000	215000.0000
11/23/2015	166.0000	166000.0000
11/24/2015	121.0000	121000.0000
11/25/2015	132.0000	132000.0000
11/26/2015	202.0000	202000.0000
11/27/2015	161.0000	161000.0000
11/28/2015	134.0000	134000.0000
11/29/2015	127.0000	127000.0000
11/30/2015	221.0000	221000.0000
12/01/2015	126.0000	126000.0000
12/02/2015	125.0000	125000.0000
12/03/2015	123.0000	123000.0000
12/04/2015	104.0000	104000.0000
12/05/2015	307.0000	307000.0000
12/06/2015	451.0000	451000.0000
12/07/2015	92.0000	92000.0000
12/08/2015	177.0000	177000.0000
12/09/2015	181.0000	181000.0000
12/10/2015	141.0000	141000.0000
12/11/2015	143.0000	143000.0000
12/12/2015	198.0000	198000.0000
12/13/2015	113.0000	113000.0000
12/14/2015	212.0000	212000.0000

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Source Name: North Channel of Lake Huron (Mudge Bay)  
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Type:  
Purpose: Municipal

Coordinate Zone: 17  
Easting: 401405  
Northing: 5085124  
Method deter: Metered

12/15/2015	112.0000	112000.0000
12/16/2015	184.0000	184000.0000
12/17/2015	113.0000	113000.0000
12/18/2015	221.0000	221000.0000
12/19/2015	140.0000	140000.0000
12/20/2015	194.0000	194000.0000
12/21/2015	162.0000	162000.0000
12/22/2015	179.0000	179000.0000
12/23/2015	218.0000	218000.0000
12/24/2015	115.0000	115000.0000
12/25/2015	140.0000	140000.0000
12/26/2015	193.0000	193000.0000
12/27/2015	112.0000	112000.0000
12/28/2015	110.0000	110000.0000
12/29/2015	105.0000	105000.0000
12/30/2015	219.0000	219000.0000
12/31/2015	117.0000	117000.0000