

2019 Annual Compliance Report

**Operation & Maintenance
Of
Tara Wastewater System**

February 2020

13-028

**Prepared for:
Municipality of Arran-Elderslie
1925 Bruce Road 10
Box 70
Chesley, ON
N0G 1L0**

**Prepared by:
GSS Engineering Consultants Ltd.
Unit 104D
1010 9th Ave. W
Owen Sound, ON
N4K 5R7**

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1.0 INTRODUCTION

The Tara Sewage Works, in the Municipality of Arran-Elderslie, is comprised of a wastewater treatment plant and a sewage pumping station. The wastewater generated within Tara is collected in the sewer system and is pumped to the wastewater treatment plant by way of a 200 mm diameter forcemain. The wastewater treatment plant comprises of two (2) waste stabilization ponds equipped with season discharge provisions. The plant has influent and effluent structures and a 400 mm diameter outfall sewer to the Sauble River.

The Municipality of Arran-Elderslie has retained the services of GSS Engineering Consultants Ltd. to prepare the Annual Compliance Report for the Tara Sewage Works. The Ministry of Environment issued an Amended Certificate of Approval # 9456-659N92 dated January 18, 2005, for this facility which revoked and replaced the Certificate of Approval # 1-704-80-006 dated July 2, 1980. Refer to **Appendix A** for Certificate of Approval. The Certificate of Approval stipulated preparation of an annual report addressing the following items:

- Summary of all monitoring data and a comparison to the effluent limits.
- Summary of operational problems encountered, and corrective actions taken.
- Summary of maintenance carried out.
- Summary of complaints received, and steps taken to address the complaints.
- Summary of all by-pass, spill or abnormal discharge events.

During the reporting period of this Annual Report (January 1, 2019 to December 31, 2019), the Tara Sewage Works was operated by the Municipality of Arran-Elderslie operators namely Mark O’Leary, who has WWT II and WWC II License, Trevor Sweiger, who has WWT I License. Chris Legge, who has WWT I and WWC I License and Ted Knapp, who has WWT III and WWCII License. Scott McLeod of Arran-Elderslie, who has WWC II and WWT II Licenses was the back-up Overall Responsible Operator (ORO), whereas Rakesh Sharma, was the Overall Responsible Operator.

This report has been prepared based on the information provided by the Municipality of Arran-Elderslie.

2.0 DESCRIPTION OF FACILITIES

2.1 Wastewater Treatment Plant

The wastewater treatment plant comprises of two (2) waste stabilization ponds, each with an area of 3.95 Ha. The depth of the cells is approximately 1.5 m and are provided with influent and effluent structures and associated piping. A 200 mm diameter inlet forcemain carries sewage to the waste stabilization ponds. A 400 mm diameter outfall sewer discharges the treated effluent from the waste stabilization ponds to the Sauble River during the spring and fall discharge periods.

2.2 Sewage Pumping Station

The sewage pumping station is located north of Mill Street and is equipped with two (2) vertical, centrifugal, dry pit, non-clog pumps (one duty and one standby) each capable of pumping 27.4 L/s against a total dynamic head of 21.5 m. The discharge forcemain at the sewage pumping station has a 150 mm magnetic flow meter and an emergency bypass connection. Two (2) positive displacement diaphragm-type chemical metering pumps (one duty and one standby), each capable of pumping 40 L/h of Alum for phosphorous removal, provide alum dosing into the forcemain. An emergency overflow, which permits overflow to the Sauble River, is provided from a manhole located in the inlet sewer. A 50kW diesel generator is also installed at this facility to provide standby power.

3.0 SUMMARY OF WASTE WATER FLOW

A summary of the wastewater flows received at the wastewater treatment plant is provided in **Table 1**. As can be noted from **Table 1**, the average daily flow was 382.3 m³/day and the maximum daily flow was 1218.4 m³/day which occurred on March 15, 2019. The total annual flow was 140,048.4 m³. The design capacity of the treatment plant is 650 m³/day. The capacity utilization of the plant was 58.8% of the design capacity.

Enclosed **Table 1A** provides a summary of plant capacity utilization since 2012. The table is self-explanatory.

In April 2019, the flow meter was checked for calibration by Flowmetrix. The calibration check result was "Pass".

TABLE 1
 Summary of Wastewater Flows: 2019
 Tara Wastewater Treatment Plant
 Municipality of Arran-Elderslie

February. 2020

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Month	Total Flow (m ³)	Average Daily Flow (m ³ /day)	Maximum Daily Flow (m ³ /day)
January	11400.9	367.8	487.4
February	11551.7	412.6	1046.7
March	15526.8	500.9	1218.4
April	16732.5	557.8	1110.0
May	12617.4	407.0	538.8
June	11479.3	382.6	603.6
July	8999.2	290.3	361.4
August	8617.8	278.0	362.4
September	8754.4	282.4	373.7
October	10062.4	324.6	539.5
November	12113.7	390.8	631.9
December	12192.3	393.0	753.0
Total	140,048.4		
Average		382.3	
Maximum			1,218.4

TABLE 1A
Capacity Utilization Summary
Tara Wastewater Treatment Plant
Municipality of Arran-Elderslie

February, 2020

13-028

Year	Average Day Flow (m ³ /day)	Capacity Utilization %	Maximum Day Flow (m ³ /day)
2019	382.3	58.8%	1,218.4
2018	404.2	62.2	1,725.9
2017	408.8	62.9	1,871.9
2016	357.2	55.0	1,623.5
2015	344.8	53.1	781
2014	346.9	53.4	1,218
2013	354.8	54.6	1,298
2012	344.9	53.1	717.4
Rated Capacity	650		

4.0 SUMMARY OF RAW SEWAGE AND EFFLUENT MONITORING

The Certificate of Approval (C of A) requires that the raw sewage be tested for CBOD₅, Total Suspended Solids (TSS) and Total Phosphorous (TP) on a quarterly (once every three (3) months) basis. In 2019, raw sewage grab samples were collected in February, May, August, and November and tested for the above referenced parameters. **Table 2** shows the summary of raw sewage monitoring data.

The C of A also requires the testing of lagoon contents for CBOD₅, Total Suspended Solids and Total Phosphorous once, within one (1) week prior to each seasonal discharge. Spring discharge occurred during May month. Fall discharge occurred in November. The lagoon contents were sampled and tested for CBOD₅, Total Suspended Solids and Total Phosphorous before and during the discharge period. **Table 3** shows the summary of the average of monthly monitoring data for Cell #1 and Cell #2 contents during and prior to discharge. The effluent limits were met during both the spring and fall discharge periods.

The volume discharged from the Lagoons was 62,167 m³ in the spring of 2019 and 41,778 m³ in the fall. In 2019, a total of 103,945 m³ of treated effluent was discharged as compared to 140,048.4 m³ of raw sewage received at the plant.

4.1 De-Sludging of Lagoons

In 2019, Arran Elderslie undertook desludging of lagoons by hiring Geo-Dredging & Dewatering Inc. Approximately 18,485 m³ of material from lagoon's bottom was removed, processed by polymer treatment to promote solid-liquid separation and pumped into five (5) geotubes. The average solids concentration of material removed was 1.39% and it took approximately 221 hours (from June 20, 2010 to August 8, 2019) to complete desludging operation.

TABLE 2

Summary of Raw Sewage Monitoring Data: 2019

Tara Wastewater Treatment Plant

Municipality of Arran-Elderslie

February, 2020

13-028

Month	CBOD ₅	Total Suspended Solids	Total Phosphorous
	(mg/L)	(mg/L)	(mg/L)
Feb	380	631	3.55
May	166	226	4.80
AUG	191	236	5.00
Nov	231	388	4.66
AVG.	242	370	4.50

TABLE 3

Summary of Effluent Discharge Monitoring - Spring and Fall 2019

Tara Wastewater Treatment Plant

Municipality of Arran-Elderslie

February, 2020

13-028

Date	Cell #1			Cell # 2		
	CBOD ₅ (mg/L)	TSS (mg/L)	Total Phosphorous (mg/L)	CBOD ₅ (mg/L)	TSS (mg/L)	Total Phosphorous (mg/L)
APR	17	22	0.14	19	37	0.21
MAY	12	17	0.10	20	25	0.18
JUL						
SEP	26	26	0.26	4	4	0.32
OCT	13	15	0.23	4	3	0.23
NOV	10	19	0.38	6	18	0.31
DEC						
Average	16	20	0.22	11	17	0.25
C of A Objectives				25	30	0.8
C of A Limits				30	40	1
Compliance with Effluent Limits				Y	Y	Y

Note: All monthly results are average of all samples collected in that month.

5.0 SUMMARY OF MAINTENANCE PROGRAM

January:

- * VS2 relay was replaced in transfer switch of Diesel Generator set.
- * Replaced battery of Diesel Generator at 1242.7 hrs.
- * An annual service of Diesel Generator set was performed at 1242.8 hrs.

February:

- * VS2 relay was repaired in transfer switch of Diesel Generator.

April:

- * Hour meter of Diesel Generator was replaced at 1248.6 hrs.
- * Decreased alum dosage by turning down pump control knobs by 1 turn each.
- * Decreased alum dosage by turning down pump control knobs by another ½ turn each.
- * Increased alum dosage by turning up pump control knobs by ½ turn each.

May:

- * Began spring discharge of cell 2.
- * Dewars was hired to replace transfer switch of Diesel Generator set.
- * Heat tracing wire on building roof drain was provided. A new electrical outlet was provided in pump room by Dewars.
- * Lower effluent valve on cell #2 was repaired.

June:

- * Greased pump shafts

August:

- * Sludge removal in cell #2 was completed.
- * Valve between cell #1 and cell #2 was opened.

September:

- * Increased alum dosage by turning up pump control knobs by ½ turn each.
- * Fuel tank was filled.
- * Fosters was hired to clean wet well and influent chamber at lagoons. They also flushed sewer at dead end located on Mill St and Brook St East.
- * Increased alum dosage by turning up pump control knobs ½ turn each.

October:

- * Sewage collection system was flushed utilizing municipal truck.

November:

- * Checked the roofs and roof drains and cleaned as needed.

December:

- * Fall discharge of cell #2 was completed.
- * Decreased alum dosage by turning down pump control knobs by ½ turn each.
- * Dewars installed a new float system, high alarm, high level turns on and low shut off and low level lock out.

6.0 SUMMARY OF COMPLAINTS RECEIVED

No Complaints were received in 2019 concerning the Tara Wastewater System.

7.0 ASSESSMENT OF SEPTAGE ACCEPTANCE

In January 2005, Henderson Paddon & Associates Ltd., produced a report entitled “Assessment of Wastewater Treatment Plants in the Municipality of Arran-Elderslie to Treat Septage”. This study concluded and recommended the following:

1. The Tara lagoons could accept 1.5 loads of septage at 13.6 m³ (3,000 1GAL) per load per week, from May 1 to October 31.
2. During the wintertime, this rate should be reduced to one (1) load every two (2) weeks.
3. Improvements to the lagoon to facilitate receiving this septage should be important.
4. It must be recognized that the receipt of septage at the lagoons will increase the sludge accumulation rate in the lagoons.

No septage was accepted at the Tara Wastewater Treatment Plant in 2019.

8.0 MINISTRY OF THE ENVIRONMENT INSPECTION

The MECP did not conduct any inspection of the Tara Sewage Lagoon System in 2019.

9.0 RECOMMENDATIONS

1. Sampling of raw sewage, lagoon contents and effluent during discharge to the stream should continue as required by the Certificate of Approval. Operator(s) should be careful while discharging the last portion of liquid from the lagoon. High velocity discharge should be avoided to prevent picking up of sludge solids from lagoon bottom.
2. A standard recording form for responding to complaints should be used for recording any complaints relating to the Tara Wastewater System.
3. The magnetic flow meter calibration should be done in April 2020.

Respectfully submitted:

GSS Engineering Consultants Ltd.



Rakesh Sharma, P. Eng., M.A.Sc.
Class IV License, WWC and WWT
Overall Responsible Operator

Municipality of Arran-Elderslie



Mark O'Leary, Water & Sewer Foreman
Class II License, WWC and WWT

Municipality of Arran-Elderslie



Scott McLeod, Public Works Manager
Class II WWC & Class II WWT, Backup ORO

Appendix A
Certificate of Approval (Sewage)



Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDED CERTIFICATE OF APPROVAL
MUNICIPAL AND PRIVATE SEWAGE WORKS
NUMBER 9456-659N92

RECEIVED

JAN 24 2005

ARRAN - ELDERSLIE

The Corporation of the Municipality of Arran-Elderslie
P.O. Box 70, 1925 County Road 10
Chesley, Ontario
N0G 1L0

Site Location: Tara Sewage Lagoon
Lot Pt Lt 28, Concession 7
Arran-Elderslie Municipality, County of Bruce

You have applied in accordance with Section 53 of the Ontario Water Resources Act for approval of:

the municipal sewage treatment works at the above site location for the collection, transmission, treatment and disposal of domestic sewage with a *Rated Capacity* of 650 m³/d, consisting of the following:

Inlet Forcemain

- approx. 307 m of 200 mm dia. inlet forcemain on site from the property limits to the influent works of the waste stabilization pond;

Waste Stabilization Pond

- a 7.9 ha waste stabilization pond (approx. area at 1.5 m depth) constructed in two equal cells, complete with influent works, interconnecting structures and effluent works, and with phosphorus removal accomplished by injection of phosphorus removal chemical during pump operation at the sewage pumping station located in the Village of Tara;

Outfall Sewer

- approx. 183 m of 400 mm dia. outfall sewer on site and easements from the effluent works of the waste stabilization pond to the Sauble River;

Miscellaneous

- all other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage works;

all in accordance with the following submitted supporting documents:

1. Final plans and specifications prepared by Henderson Paddon and Associates Limited.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

"Act" means the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended;

"Average Daily Flow" means the cumulative total sewage flow to the sewage works during a calendar year divided by the number of days during which sewage was flowing to the sewage works that year;

"By-pass" means any discharge from the *Works* that does not undergo any treatment before it is discharged to the environment;

"CBOD5" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;

"Certificate" means this entire certificate of approval document, issued in accordance with Section 53 of the *Act*, and includes any schedules;

"Daily Concentration" means the concentration of a contaminant in the effluent discharged over any single day, as measured by a composite or grab sample, whichever is required;

"Director" means any *Ministry* employee appointed by the Minister pursuant to section 5 of the *Act*;

"Discharge Season" means the Spring discharge period commencing after the liquid surface in the lagoon has become free of ice cover, terminating not later than May 14 or the Fall discharge period commencing not earlier than November 1 and terminating not later than December 15 in which discharge of effluent from the *Works* is permitted;

"District Manager" means the District Manager of the Barrie District Office of the Ministry;

"Ministry" means the Ontario Ministry of the Environment;

"Owner" means the Corporation of the Municipality of Arran-Elderslie and includes its successors and assignees;

"Rated Capacity" means the *Average Daily Flow* for which the *Works* are approved to handle;

"Regional Director" means the Regional Director of the Southwestern Region of the Ministry; and

"Seasonal Average Concentration" means the arithmetic mean of all *Daily Concentrations* of a contaminant in the effluent sampled or measured, or both, during a *Discharge Season*;

"Works" means the sewage works described in the *Owner's* application, this *Certificate* and in the supporting documentation referred to herein, to the extent approved by this *Certificate*.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

- (1) The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Works* is notified of this *Certificate* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
- (2) Except as otherwise provided by these Conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Certificate*, the application for approval of the works and the submitted supporting documents and plans and specifications as listed in this *Certificate*.
- (3) Where there is a conflict between a provision of any submitted document referred to in this *Certificate* and the Conditions of this *Certificate*, the Conditions in this *Certificate* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.
- (4) Where there is a conflict between the listed submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.
- (5) The requirements of this *Certificate* are severable. If any requirement of this *Certificate*, or the application of any requirement of this *Certificate* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this certificate shall not be affected thereby.

2. CHANGE OF OWNER

- (1) The *Owner* shall notify the *District Manager* and the *Director*, in writing, of any of the following changes within 30 days of the change occurring:
 - (a) change of *Owner*;
 - (b) change of address of the *Owner*;
 - (c) change of partners where the *Owner* is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c.B17 shall be included in the notification to the *District Manager*;
 - (d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Informations Act, R.S.O. 1990, c. C39 shall be included in the notification to the *District Manager*;
- (2) In the event of any change in ownership of the *Works*, other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Certificate*, and a copy of such notice shall be forwarded to the *District Manager* and the *Director*.

3. RECORD DRAWINGS

(1) A set of as-built drawings showing the works "as constructed" shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the *Works* for the operational life of the *Works*.

4. BY-PASSES

(1) Any *By-pass* of sewage from any portion of the *Works* is prohibited, except where:

(a) it is necessary to avoid loss of life, personal injury, danger to public health or severe property damage;

(b) the *District Manager* agrees that it is necessary for the purpose of carrying out essential maintenance and the *District Manager* has given prior written acknowledgment of the *by-pass*; or

(c) the *Regional Director* has given prior written acknowledgment of the *By-pass*.

(2) The *Owner* shall collect at least one (1) grab sample of the *By-pass* and have it analyzed for the parameters outlined in Condition 6 using the protocols in Condition 9.

(3) The *Owner* shall maintain a logbook of all *By-pass* events which shall include, at a minimum, the time, location, duration, quantity of *By-pass*, the authority for *By-pass* pursuant to subsection (1), and the reasons for the occurrence.

5. EFFLUENT OBJECTIVES

(1) The *Owner* shall use best efforts to design, construct and operate the *Works* with the objective that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the *Works*.

Effluent Parameter	Average Concentration (milligrams per litre unless otherwise indicated)
Column 1	Column 2
<i>CBOD5</i>	25.0
Total Suspended Solids	30.0
Total Phosphorus	0.8

(2) The *Owner* shall use best efforts to:

(a) maintain the pH of the effluent from the *Works* within the range of 6.5 to 9.0, inclusive, at all times;

(b) operate the works within the *Rated Capacity* of the *Works*;

(c) ensure that the effluent from the *Works* is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

(3) The *Owner* shall include in all reports submitted in accordance with Conditions 9 and 10 a summary of the efforts made and results achieved under this Condition.

6. EFFLUENT LIMITS

(1) The *Owner* shall operate and maintain the *Works* such that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the *Works*.

Effluent Parameter	Average Concentration (milligrams per litre unless otherwise indicated)
Column 1	Column 2
<i>CBOD5</i>	30.0
Total Suspended Solids	40.0
Total Phosphorus	1.0

(2) For the purposes of determining compliance with and enforcing subsection (1):

(a) The *Seasonal Average Concentration* of a parameter named in Column 1 of subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of subsection (1).

(3) Paragraph (a) of subsection (2) shall apply upon the issuance of this certificate.

7. OPERATION AND MAINTENANCE

(1) The *Owner* shall exercise due diligence in ensuring that, at all times, the *Works* and the related equipment and appurtenances used to achieve compliance with this *Certificate* are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding, adequate operator staffing and training, including training in all procedures and other requirements of this *Certificate* and the *Act* and regulations, adequate laboratory facilities, process controls and alarms and the use of process chemicals and other substances used in the *Works*.

(2) The *Owner* shall maintain an operations manual, that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the *Works*;

(b) inspection programs, including frequency of inspection, for the *Works* and the methods or

tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the *Works*;

(d) procedures for the inspection and calibration of monitoring equipment;

(e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the *District Manager*; and

(f) procedures for receiving, responding and recording public complaints, including recording any followup actions taken.

(3) The *Owner* shall maintain the operations manual current and retain a copy at the location of the *Works* for the operational life of the *Works*. Upon request, the *Owner* shall make the manual available to *Ministry* staff.

(4) The *Owner* shall provide for the overall operation of the *Works* with an operator who holds a licence that is applicable to that type of facility and that is of the same class as or higher than the class of the facility in accordance with Ontario Regulation 129/04.

8. SPECIAL OPERATIONS - SEASONAL DISCHARGE

(1) The *Owner* shall operate the *Works* such that discharge is conducted on a semi-annual discharge basis with the effluent being discharged in the spring and the fall as follows:

spring: discharge commencing after the liquid surface in the lagoon has become free of ice cover, terminating not later than May 14, and

fall: discharge commencing not earlier than November 1 and terminating not later than December 15.

9. EFFLUENT MONITORING AND RECORDING

The *Owner* shall, upon commencement of operation of the *Works*, carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this *Certificate* are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) For the purposes of this condition, the following definitions apply:

(a) Quarterly means once every three months;

(3) Samples shall be collected at the following sampling points, at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 3 - Raw Sewage Monitoring	
Frequency	Quarterly
Sample Type	Grab
Parameters	CBOD5, Total Suspended Solids, Total Phosphorus

Table 4 - Lagoon Contents (within one week prior to each seasonal discharge)		
Parameters	Sample Type	Frequency
CBOD5	Grab	once
Total Suspended Solids	Grab	once
Total Phosphorus	Grab	once

Table 5 - Effluent Monitoring (beginning, during and at the end of each discharge season)		
Parameters	Sample Type	Frequency
CBOD5	Grab	2 times a week
Total Suspended Solids	Grab	2 times a week
Total Phosphorus	Grab	2 times a week

(4) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

- * (a) the Ministry's Procedure F-10-1, "Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;
- * (b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions;
- * (c) the publication "Standard Methods for the Examination of Water and Wastewater" (20th edition), as amended from time to time by more recently published editions;

(5) The measurement frequencies specified in subsection (2) in respect to any parameter are minimum requirements which may, after 6 months of monitoring in accordance with this Condition, be modified by the *District Manager* in writing from time to time.

(6) The *Owner* shall install and maintain (a) continuous flow measuring device(s), to measure the flowrate of the influent to the *Works* with an accuracy to within plus or minus 15 per cent (+/- 15%) of the actual flowrate for the entire design range of the flow measuring device, and record the flowrate at a

daily frequency.

(7) The *Owner* shall measure and record the flowrate and quantity of effluent from the *Works* during each *Discharge Season*.

10. REPORTING

(1) Ten (10) days prior to the date of a planned *By-pass* being conducted pursuant to Condition 4 and as soon as possible for an unplanned *By-pass*, the *Owner* shall notify the *District Manager* (in writing) of the pending start date, in addition to an assessment of the potential adverse effects on the environment and the duration of the *By-pass*.

(2) The *Owner* shall report to the *District Manager* or designate, any exceedence of any parameter specified in Condition 6 orally, as soon as reasonably possible, and in writing within seven (7) days of the exceedence.

(3) In addition to the obligations under Part X of the Environmental Protection Act, the *Owner* shall, within 10 working days of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the *District Manager* describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

(4) The *Owner* shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to *Ministry* staff.

(5) The *Owner* shall prepare, and submit to the *District Manager*, a performance report, on an annual basis, within ninety (90) days following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the *Works* and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 6, including an overview of the success and adequacy of the *Works*;

(b) a description of any operating problems encountered and corrective actions taken;

(c) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the *Works*;

(d) a summary of any effluent quality assurance or control measures undertaken in the reporting period;

(e) a summary of the calibration and maintenance carried out on all effluent monitoring equipment; and

(f) a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 5.

(g) a summary of any complaints received during the reporting period and any steps taken to address the complaints;

(h) a summary of all *By-pass*, spill or abnormal discharge events; and

(i) any other information the *District Manager* requires from time to time.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Certificate* and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this *Certificate* the existence of this *Certificate*.
2. Condition 2 is included to ensure that the *Ministry* records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the *Works* are made aware of the *Certificate* and continue to operate the *Works* in compliance with it.
3. Condition 3 is included to ensure that record drawings of the *Works* "as constructed" are maintained for future references.
4. Condition 4 is included to indicate that by-passes of untreated sewage to the receiving watercourse is prohibited, save in certain limited circumstances where the failure to *By-pass* could result in greater injury to the public interest than the *By-pass* itself where a *By-pass* will not violate the approved effluent requirements, or where the *By-pass* can be limited or otherwise mitigated by handling it in accordance with an approved contingency plan. The notification and documentation requirements allow the *Ministry* to take action in an informed manner and will ensure the *Owner* is aware of the extent and frequency of *By-pass* events.
5. Condition 5 is imposed to establish non-enforceable effluent quality objectives which the *Owner* is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs and before the compliance limits of Condition 6 are exceeded.
6. Condition 6 is imposed to ensure that the effluent discharged from the *Works* to the Sauble River meets the *Ministry's* effluent quality requirements thus minimizing environmental impact on the receiver and to protect water quality, fish and other aquatic life in the receiving water body.
7. Condition 7 is included to require that the *Works* be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person

or property is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the *Ministry*. Such a manual is an integral part of the operation of the *Works*. Its compilation and use should assist the *Owner* in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for *Ministry* staff when reviewing the *Owner's* operation of the work.

8. Condition 8 is included to ensure that the treated effluent is discharged to the receiver during periods and at rates that minimizes the environmental impact on the receiver.
9. Condition 9 is included to enable the *Owner* to evaluate and demonstrate the performance of the *Works*, on a continual basis, so that the *Works* are properly operated and maintained at a level which is consistent with the design objectives and effluent limits specified in the *Certificate* and that the *Works* does not cause any impairment to the receiving watercourse.
10. Condition 10 is included to provide a performance record for future references, to ensure that the *Ministry* is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this *Certificate*, so that the *Ministry* can work with the *Owner* in resolving any problems in a timely manner.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 1-704-80-006 issued on July 2, 1980.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., 12th Floor
P.O. Box 2382

AND

The Director
Section 53, *Ontario Water Resources Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A

Toronto, Ontario
M4P 1E4

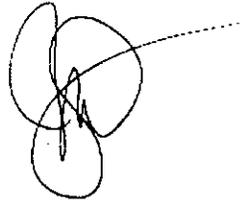
Toronto, Ontario
M4V 1L5

* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the

Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca

The above noted sewage works are approved under Section 53 of the Ontario Water Resources Act.

DATED AT TORONTO this 11th day of January, 2005



Mohamed Dhalla, P.Eng.
Director
Section 53, *Ontario Water Resources Act*

FL/

c: District Manager, MOE Owen Sound
Matt G. Prentice, Henderson Paddon & Associates Ltd.
Drinking Water, Wastewater and Watershed Section, MOE Standards Development Branch

Appendix B
Flow Meter Calibration



AS FOUND CERTIFICATION

PASS

CLIENT DETAIL

CUSTOMER Municipality of Arran-Elderslie
CONTACT Mark O'leary
Water Foreman
T: 519-363-3039
C: 519-270-1929
E: water@arran-elderslie.ca

EQUIPMENT DETAIL

MODEL WaterMaster
SENSOR SERIAL NUMBER 3K620000155000
CONVERTER SERIAL NUMBER 3K220000229674
SENSOR SIZE (DN) 150

PLANT ID Tara Sewage PS (Mill St.)
METER ID Station Flow Meter
FIT ID N/A
CLIENT TAG N/A
OTHER N/A
GPS COORDINATES N44 28.646 W081 08.839

VERIFICATION DATE April 23, 2019
CAL. FREQUENCY Annual
CAL. DUE DATE April, 2020

VER. BY - FM Paris Machuk

Quality Management Standards Information -
Reference equipment and instrumentation used to
conduct this verification test is found in our AC-
QMS document at the time this test was

SENSOR INFORMATION

Q3 I/sec 175
CALIBRATION ACCURACY OIML Class 2
SENSOR CAL. ACCURACY % 135
mm/sec 0
~ 11
DATE OF MANUFACTURE Jan 07, 2014
RUN HOURS d/h/m 1686/17/15

TRANSMITTER INFORMATION

APPLICATION VERSION V01.05.00 12/07/12
MSP VERSION 00.00.04
DATE OF MANUFACTURE Jan 07, 2014
RUN HOURS d/h/m 2011/04/30

ALLOWABLE TOLERANCE % 5.0

CURRENT OUTPUT

OUTPUT TEST	4.00 20.00	READING mA	ERROR %	PASS FAIL
4.0 mA	4.00	3.997	-0.08	PASS
12.0 mA	12.00	11.976	-0.20	PASS
20.0 mA	20.00	19.986	-0.07	PASS

PULSE OUTPUT

OUTPUT TEST	READING mA	ERROR %	PASS FAIL
OUTPUT 1, Hz 100	N/A	N/A	N/A
OUTPUT 1, Hz 50	N/A	N/A	N/A
OUTPUT 2, Hz 100	N/A	N/A	N/A
OUTPUT 2, Hz 50	N/A	N/A	N/A

VERIFICATION HISTORY

OIML Accuracy Alarms 0

TOTALIZER INFORMATION

FORWARD 644626.63 m3
REVERSE 0 m3
NET 644626.63 m3

SENSOR DATA

COIL CURRENT 179.9 mA
COIL INDUCTANCE 158.7 mH
COIL SHIFT 0.1 %
COIL/LOOP RESISTANCE 35.1 ohm

TRANSMITTER DATA

TX GAIN - ADJUSTMENT 0 %

VeriMASTER INFORMATION

VERSION 01.00.03
LIMIT VERSION 01.00.01

CONFIGURATION SETTINGS

MAINS/FREQUENCY 60 Hz
QMAX 100 I/sec
PULSES/UNIT 30
PULSES LIMIT FREQUENCY 1200 Hz
SENSOR USER SPAN 100 %
ZERO 0 mm/s
USER FLOW CUTOFF 1 %
HYSTERESIS 20 %
METER MODE Forward Flow

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	ABBWM	1
PROCESS METER	DMM	11

The information contained within this report was produced by "VeriMASTER - Flow Meter Verification Report". The AS LEFT information is the same as the AS FOUND information within this report. If changes have been made relative to the accuracy of the calibration, an AS LEFT certificate will be issued.