



The Corporation of the  
Municipality of Wawa

# 2016

# Annual Sewage

# Performance Report



# Wawa

Prepared by:  
Water & Sewer Department  
Infrastructure Services

February 2017

**SIGNATURE PAGE**

**Wawa Townsite  
2016 Annual Sewage Performance Report**

**Prepared by: Municipality of Wawa  
Infrastructure Services  
Water & Sewer Department**

\_\_\_\_\_  
**Mark McRae, Water and Wastewater Lead Hand**

\_\_\_\_\_  
**Date**

**Marc Liard, Water and Wastewater Operator**

**Gary Mercier, Water and Wastewater Operator**

**Received and Reviewed on behalf of  
The Corporation of the Municipality of Wawa**

\_\_\_\_\_  
**Cory Stainthorpe, Director  
Infrastructure Services**

\_\_\_\_\_  
**Date**

**Presented to Council:**

\_\_\_\_\_  
**Date**

**Presentation Confirmed by Resolution**

\_\_\_\_\_

# 2016 Annual Sewage Performance Report

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**Name of Sewage Plant:** Municipality of Wawa Sewage Lagoons

**Address:** Golf Course Road  
Wawa, Ontario  
District of Algoma

**MOE Works Number:** 110000454

**Report Period:** January 01, 2016 to December 31, 2016

**Prepared by:** Municipality of Wawa – Infrastructure Services  
Water & Sewer Department

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**Indicate how you notified system users that your annual report is available, and is free of charge.**

- Public access at Town Hall, Notice via the local newspaper (Algoma News Review) and Internet ([www.myalgoma.ca](http://www.myalgoma.ca)).
- Also available on-line on the Municipality of Wawa website @ [www.wawa.cc](http://www.wawa.cc).

## **1.0 Introduction**

### **1.1 Facility Description**

The Wawa Sewage Treatment Plant was constructed in 1986-1987 and officially opened August 09, 1988, in partnership with the Ministry of the Environment, Ministry of Northern Development and Mines, and The Corporation of the Municipality of Wawa.

Wawa Sewage Collection is a Class 2 System, consisting of a gravity feed system with the exception of a forced sewer main at the west end of Government Road. Approximately 20 homes are on the forced main, each home is equipped with a holding tank (consisting of solid side and grey water side) and each with its own sewage pump on the grey water side of the tank, which pumps the grey water into the force main.

Sewage is pumped into the force main to the intersection of Government Road and Tamarack Street, where a gravity sewer system takes over.

The Wawa Sewage Treatment Plant is a Class 1 plant which consists of 2 aeration ponds that are used for primary treatment. Aluminum Sulphate is added at the end of the second aeration pond before going into the polishing ponds to aid in phosphorus removal. Aluminum Sulphate is considered our secondary treatment. Once the treated effluent is transferred into the polishing ponds for a predetermined amount of time, then it is discharged into the Magpie River on a continuous basis.

The Sewage Treatment Plant building is equipped with two blowers for the aeration ponds, two chemical feed pumps for Aluminum Sulphate and a milltronics OCM II (open channel monitor) for data logging. An open channel flow meter is used to monitor treated effluent leaving the aeration system before being transferred to the polishing pond.

**List all sewage treatment chemical used over this reporting period.**

Aluminum Sulphate (Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>) used at the Wawa Sewage Treatment Plant for phosphorus removal.

**Were any significant expenses incurred?**

- Installed required equipment
- Repaired required equipment
- Replaced required equipment

**Please provide a brief description and breakdown of monetary expenses.**

- Replaced all laterals and headers for the aerate system
- Replace both blowers with variable speed blowers
- Drain both cells and desludge cell #1
- Sludge is in geotubes for dewatering and will be tested and then disposed in summer of 2017
- Approximately - \$ 129500.00

**1.2 Certificates**

An Amended Environmental Compliance Approval (#6343-9VLPM9) was issued on July 13, 2015.

**2.0 Monitoring Data**

**2.1 Monitoring Program – Environmental Compliance Approval # 6343-9VLPM9**

**Table 2.1 – Effluent Objectives**

Effluent Parameters	Concentration Objectives
CBOD5	20.0 mg/l
Total Suspended Solids	25.0 mg/l
Total Phosphorus	0.8 mg/l

**Table 2.2 – Effluent Limits**

<b>Effluent Parameters</b>	<b>Average Concentration Limits</b>
CBOD5	25.0 mg/l
Total Suspended Solids	30.0 mg/l
Total Phosphorus	1.0 mg/l

**Table 2.3 – Raw Sewage Monitoring**

<b>Parameters</b>	<b>Sample Type</b>	<b>Frequency</b>
BOD5	Composite	Monthly
Total Suspended Solids	Composite	Monthly
Total Phosphorus	Composite	Monthly
Total Kjeldahl Nitrogen (mg/l)	Composite	Monthly

**Table 2.4 – Aerated Lagoon Cells Content Monitoring**

<b>Parameters</b>	<b>Sample Type</b>	<b>Frequency</b>
Dissolved Oxygen	Grab	Weekly

**Table 2.5 – Final Effluent Monitoring**

<b>Parameters</b>	<b>Sample Type</b>	<b>Frequency</b>
CBOD5	Composite	Weekly
Total Suspended Solids	Composite	Weekly
Total Phosphorus	Composite	Weekly
Total Ammonia Nitrogen	Composite	Weekly
E.coli	Grab	Weekly
Temperature	Grab	Weekly
pH	Grab	Weekly
Unionized Ammonia	Calculated	Weekly

**Table 2.6 – Monthly Raw Sewage Sampling Results**

Date	BOD5 (mg/l)	TSS (mg/l)	TP (mg/l)	TKN (mg/l)
January 2016	60	52.5	2.11	14.8
February 2016	39.8	26.6	1.53	13.2
March 2016	35.7	45.9	1.61	11.9
April 2016	45.3	52.1	1.71	15.4
May 2016	66.0	78.1	2.85	21.4
June 2016	57.0	39.0	2.68	27.2
July 2016	64.0	64.9	2.88	26.2
August 2016	99.0	85.0	2.99	24.2
September 2016	77.0	59.0	2.73	23.6
October 2016	58.0	71.8	2.26	18.6
November 2016	82.0	72.0	2.73	22.2
December 2016	62.0	19.9	2.04	19.7

**Table 2.7 – Weekly Effluent Sampling Results**

Date	CBOD5 (mg/l)	TSS (mg/l)	TP (mg/l)	TAN (mg/l)	E.Coli (MPN/100ml)	Field Temp (*c)	Field pH
Jan. 04, 2016	<2.0	3.2	0.161	5.46	<b>326</b>	N/A	N/A
Jan. 12, 2016	<2.0	<2.0	0.219	6.09	1730	N/A	N/A
Jan. 18, 2016	<2.0	2.0	0.243	6.29	>2430	N/A	N/A
Jan. 25, 2016	2.3	3.7	0.322	6.36	>2430	N/A	N/A
Feb. 01, 2016	2.7	4.2	0.339	7.86	>2420	N/A	N/A
Feb. 08, 2016	3.9	7.2	0.0751	6.63	>2430	2.5	7.25
Feb. 16, 2016	3.7	5.7	0.362	5.70	2420	3.3	6.51
Feb. 22, 2016	5.1	6.9	0.446	6.43	>2420	1.34	7.51

**Table 2.7 – Weekly Effluent Sampling Results (Cont.)**

Date	CBOD5 (mg/l)	TSS (mg/l)	TP (mg/l)	TAN (mg/l)	E.Coli (MPN/100ml)	Field Temp(*c)	Field pH
Feb. 29, 2016	5.6	5.2	0.459	6.27	>2420	1.29	7.22
Mar. 07, 2016	5.7	7.6	0.458	5.86	>2420	1.23	7.34
Mar. 14, 2016	5.1	7.6	0.410	5.94	>2420	1.58	7.37
Mar. 21, 2016	4.7	9.5	0.298	5.55	1300	1.89	7.10
Mar. 29, 2016	4.0	6.4	0.218	4.50	36	2.40	7.38
Apr. 04, 2016	3.5	8.5	0.239	4.59	101	2.23	7.29
Apr. 11, 2016	2.9	2.7	0.271	4.48	63	2.87	7.34
Apr. 18, 2016	2.8	5.9	0.234	3.94	3	4.53	7.48
Apr. 25, 2016	<2.0	3.7	0.16	1.85	1	4.82	7.40
May 02, 2016	2.6	4.8	0.069	0.194	<1	11.6	9.20
May 09, 2016	2.2	7.2	0.073	0.098	<1	12.4	8.10
May 16, 2016	<2.0	3.2	0.0457	<0.020	1	12.6	8.55
May 24, 2016	2.1	2.3	0.55	0.040	<1	17.54	9.79
May 30, 2016	<2.0	<2.0	0.058	0.032	<1	17.75	9.33
June 06, 2016	<2.0	3.6	0.062	0.129	4	18.1	9.14
June 13, 2016	<2.0	<2.0	0.131	0.053	<1	16.6	9.64
June 20, 2013	<2.0	<2.0	0.068	0.113	5	17.1	9.31
July 04, 2016	<2.0	<2.0	0.041	0.028	<1	20.28	9.70
July 11, 2016	<2.0	2.1	0.051	0.023	<1	21.82	9.66
July 18, 2016	3.2	2.0	0.056	0.042	2	21.18	9.77
July 25, 2016	2.4	3.7	0.051	0.179	1	21.07	9.69
Aug. 02, 2016	<2.0	3.8	0.049	0.043	1	32.85	9.08
Aug. 08, 2016	<2.0	7.1	0.073	0.096	1	22.10	9.11
Aug. 15, 2016	2.1	2.8	0.057	0.111	2	22.61	9.69
Aug. 22, 2016	2.1	2.3	0.0564	0.109	3	23.1	9.70
Aug. 29, 2016	2.1	5.6	0.068	0.043	<1	24.1	9.71

**Table 2.7 – Weekly Effluent Sampling Results (Cont.)**

<b>Date</b>	<b>CBOD5 (mg/l)</b>	<b>TSS (mg/l)</b>	<b>TP (mg/l)</b>	<b>TAN (mg/l)</b>	<b>E.Coli (MPN/100ml)</b>	<b>Field Temp(*c)</b>	<b>Field pH</b>
Sept. 07, 2016	<2.0	2.3	0.056	0.135	<1	23.0	9.97
Sept. 12, 2016	<2.0	4.2	0.082	0.100	11	22.8	9.93
Sept. 19, 2016	2.5	3.1	0.056	0.124	15	21.6	9.82
Sept. 26, 2016	2.2	3.0	0.027	0.100	15	22.4	9.72
Oct. 03, 2016	<2.0	4.5	0.063	1.48	<1	19.7	9.14
Oct. 11, 2016	<2.0	4.4	0.0412	1.58	10	19.4	9.84
Oct. 17, 2016	<2.0	12.0	0.0624	2.03	1	10.46	7.56
Oct. 24, 2016	2.3	3.5	0.0493	2.14	1	10.68	8.01
Oct. 31, 2016	2.4	<2.0	0.0438	2.81	<1	9.42	8.12
Nov. 07, 2016	<2.0	2.3	0.048	2.64	<1	N/A	N/A
Nov. 14, 2016	<2.0	2.6	0.0310	2.21	<1	N/A	N/A
Nov. 21, 2016	2.7	4.8	0.0295	3.50	<1	N/A	N/A
Nov. 30, 2016	<2.0	<2.0	0.0453	4.72	<1	N/A	N/A
Dec. 05, 2016	<2.0	<2.0	0.070	5.77	<1	2.5	7.18
Dec. 12, 2016	<2.0	3.8	0.113	6.64	<1	4.22	7.68
Dec. 19, 2016	<2.0	<2.0	0.165	7.87	2	3.46	7.83

**Table 2.8 – Weekly Dissolved Oxygen Sampling Results**  
**(From January 01 to June 20 we measured in percentage**  
**and from \*June 27 to December 31 we measured in mg/l)**

<b>Date</b>	<b>Cell #1</b>	<b>Cell #2</b>
January 04, 2016	8.2%	6.1%
January 12, 2016	8.3%	6.8%
January 18, 2016	5.5%	4.2%
January 25, 2016	4.5%	5.4%
February 01, 2016	4.6%	3.6%
February 08, 2016	3.4%	12.9%
February 16, 2016	3.6%	4.1%

**Table 2.8 – Weekly Dissolved Oxygen Sampling Results (Cont.)**

<b>Date</b>	<b>Cell #1</b>	<b>Cell #2</b>
February 22, 2016	4.2%	2.1%
February 29, 2016	5.9%	3.6%
March 07, 2016	3.2%	3.0%
March 14, 2016	3.4%	3.7%
March 21, 2016	6.0%	6.3%
March 29, 2016	6.4%	5.8%
April 04, 2016	6.2%	6.0%
April 11, 2016	6.8%	6.1%
April 18, 2016	6.1%	7.3%
April 25, 2016	6.0%	6.9%
May 02, 2016	13.2%	13.0%
May 09, 2016	11.6%	12.4%
May 14, 2016	11.0%	12.8%
May 24, 2016	12.6%	6.1%
May 30, 2016	10.8%	6.3%
June 06, 2016	11.2%	6.4%
June 13, 2016	10.3%	8.3%
June 20, 2016	10.9%	8.7%
* June 27, 2016	1.10 mg/l	1.28 mg/l
July 04, 2016	0.76 mg/l	1.34 mg/l
July 11, 2016	0.30 mg/l	1.02 mg/l
July 18, 2016	0.99 mg/l	5.8 mg/l
July 25, 2016	0.87 mg/l	1.79 mg/l

**Table 2.8 – Weekly Dissolved Oxygen Sampling Results (Cont.)**

<b>Date</b>	<b>Cell #1</b>	<b>Cell #2</b>
Aug.02, 2016	0.27 mg/l	offline
Aug08, 2016	0.38 mg/l	offline
Aug.15, 2016	0.31 mg/l	offline
Aug.22, 2016	0.34 mg/l	offline
Aug.29, 2016	0.60 mg/l	offline
Sept.07, 2016	offline	0.45 mg/l
Sept.12, 2016	offline	0.44 mg/l
Sept.19, 2016	offline	6.24 mg/l
Sept.26, 2016	offline	5.18 mg/l
Oct.03, 2016	offline	5.69 mg/l
Oct.11, 2016	offline	5.52 mg/l
Oct.17, 2016	offline	5.42 mg/l
Oct.24, 2017	offline	5.50 mg/l
Oct.31, 2016	offline	offline
Nov.07, 2016	offline	offline
Nov.14, 2016	offline	offline
Nov.21, 2016	offline	offline
Nov.30, 2016	offline	offline
Dec.05, 2016	1.22 mg/l	3.15 mg/l
Dec.12, 2016	1.69 mg/l	14.37 mg/l
Dec.19, 2016	1.75 mg/l	12.67 mg/l

**During the summer and fall some of the readings were not done because of draining and filling of cell #1 and cell #2.**

**Table 2.9 – Summary Weekly Effluent Sampling Results**

Parameters	Average	Maximum	Objective Limits	Compliance Limits
CBOD5 (mg/l)	2.61	5.7	20.0	25.0
Total Suspended Solids (mg/l)	4.18	12	25.0	30.0
Total Phosphorus (mg/l)	0.149	0.459	0.8	1.0

**Table 2.10 – Summary Weekly Dissolved Oxygen Results**

Cell number	Average %	Maximum %	Average mg/l	Maximum mg/l
Cell # 1	7.35	13.2	0.81	1.75
Cell # 2	6.99	13.0	4.74	14.37

## 2.2 Description of Parameters

**BOD5** – (also known as TBOD5) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogen oxygen demand.

**TSS** – (Total Suspended Solids) are solid organic and inorganic materials that hang below the water surface. Suspended solids, in layman’s terms, are similar to stirring up the sand near the shore of a lake. The water turns cloudy from the suspended solids. Total suspended solids must be coarse enough to be trapped by a coffee filter.

**TP** – (Total Phosphorus) refers to the amount of phosphorus in a sample. Excess TP stimulates algae and weed growth that may cause fluctuations in dissolved oxygen in the receiving waters.

**TKN** - (Total Kjeldahl Nitrogen) is the total concentration of organic nitrogen and ammonia.

**CBOD5** – means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measure in an unfiltered sample.

**TAN** – (Total Ammonia Nitrogen) Ammonia exists in two forms in the water:  $\text{NH}_3$  ( this is called unionized ammonia )  $\text{NH}_4^+$  ( this is called ionized ammonia ) Together, these two forms of ammonia are called TAN which means total ammonia nitrogen.  $\text{NH}_3$  is the principal form of toxic ammonia.

**E.coli** – (*Escherichia coli*) is commonly regarded as one of first microorganisms of choice in water and wastewater quality monitoring programs and serves as the primary indicator for water contaminated with fecal matter due to their prevalence in the gut of warm-blooded animals as well as high numbers excreted in both human and animal.

**PH** - is a measure of how acidic/basic water is. The range goes from 0 - 14, with 7 being neutral. PH's of less than 7 indicate acidity, whereas a PH of greater than 7 indicates a base. PH is really a measure of the relative amount of free hydrogen and hydroxyl ions in the water.

**Unionized Ammonia** – it is the calculation using total ammonia concentration, PH and temperature using the methodology stipulated in “Ontario Provincial Water Quality Objectives”.

**Dissolved Oxygen** - (DO) refers to microscopic bubbles of gaseous oxygen (O<sub>2</sub>) that are mixed in water and available to aquatic organisms for respiration—a critical process for almost all organisms. Primary sources of DO include the atmosphere and aquatic plants.

### **2.3 Summary of Parameters**

In 2016, the effluent from the Wawa Sewage Treatment Facility was within the compliance limits listed in the Environmental Compliance Approval # 6343-9VLP9. The average and maximum sampling results is listed in tables 2.13 of this report and the maximum and average dissolved oxygen is listed in table 2.14.

### 3.0 Summary of Flow Data for 2016

The Wawa Sewage Treatment Plant continuously discharges to the Magpie River with a yearly average of 2507 m<sup>3</sup>/day, which is 58% of the Sewage Plant capacity. The maximum daily flow for 2015 was 4913 m<sup>3</sup>/day which happened in April 2015. Below is a summary of monthly minimum, average and maximum flows.

**Table 3.1 - Effluent Flow - Plant Rated Capacity (m<sup>3</sup>/day): 4300**

	<b>Minimum Flow (m<sup>3</sup>/day)</b>	<b>Average Flow (m<sup>3</sup>/day)</b>	<b>% of Plant Capacity</b>	<b>Maximum Flow (m<sup>3</sup>/day)</b>	<b>Total Flow (m<sup>3</sup>)</b>
<b>January</b>	2850	3297	76	3961	102232
<b>February</b>	2904	3441	80	4013	99805
<b>March</b>	2972	3498	81	4348	108468
<b>April</b>	2264	3150	73	3924	94500
<b>May</b>	1856	2364	55	3979	73288
<b>June</b>	1775	2101	48	3459	63059
<b>July</b>	1492	2268	52	2915	69032
<b>August</b>	1895	2155	50	2723	66826
<b>September</b>	721	1631	37	2780	48947
<b>October</b>	709	1821	42	3815	56481
<b>November</b>	420	1373	31	2362	41212
<b>December</b>	1244	1840	42	2427	57048

**Table 3.2 - Summary of Effluent Flow**

<b>Minimum Flow</b>	<b>Average Flow</b>	<b>Average % of Plant Capacity</b>	<b>Maximum Flow</b>	<b>Total Flow</b>
420	2411	55.5	4348	880898

#### **4.0 Calibrations**

The calibration on the open channel flow meter OCM II was performed by Metcon Sales and Engineering Limited on September 27, 2016. This flow meter is calibrated for accuracy yearly. The calibration report is under **Appendix A**.

#### **5.0 Complaints**

Over the period of 2016, the Municipality did not receive any complaints of odours emitting from the sewage lagoons.

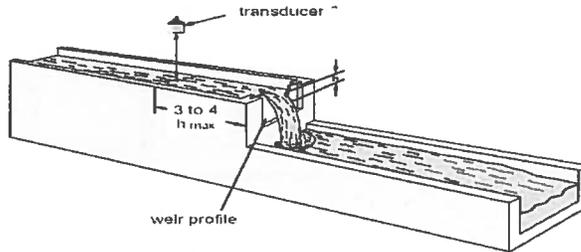
# **APPENDIX A**

**Metcon**

**Calibration**

**Report**

**OCM VERIFICATION SHEET**



**Meter Under Test**

Customer: Corporation of Wawa	Tag: LIT-1001
Date Performed: September 27, 2016	Meter Type: Level
Site: Wawa WTP	Manufacturer: Miltronics / Siemens
Location: Finished Wtr Reservoir	Model #: Multiranger Plus
Performed By: Mike Nakonecznyj	Transmitter S/N: N/A

**Installation Details**

Units: Meter	Near Blanking: 30.480
Mode: Level	Analog Out: 4-20mA
Empty Distance: 3.724	Profile: Level
Span: 10	

**Test Results**

	Reading	Measured	Error	Error %
Distance	0.816	0.815	0.001	0.03%
Head	2.910	2.900	0.010	0.10%
			Final Error	0.06%
			Maximum Allowable Error	2.00%

**Test Notes**

\* This Meter is operating within Manufacturer's tolerance

**PASS**

# **APPENDIX B**

## **Environmental Compliance**

### **Approval**

**# 6343-9VLPM9**



**AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER 6343-9VLP09

Issue Date: July 13, 2015

The Corporation of the Municipality of Wawa  
40 Broadway Ave  
Post Office Box, No. 500  
Wawa, Ontario  
P0S 1K0

Site Location: Wawa Wastewater Treatment Facility  
Golf Course Road  
Municipality of Wawa, District of Algoma

*You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

Alterations to the existing municipal sewage treatment works for the collection, transmission, treatment and disposal of domestic sewage having a Rated Capacity of 4,300 m<sup>3</sup>/d and consisting of the following:

Proposed Works

Aerated Lagoon Cells

- replacement of the existing aeration system in aerated lagoons Cell No. 1 and Cell No. 2 with fine bubble aeration system;
- replacement of the existing air blower system with two (2) air blowers (one standby), each rated at 26 m<sup>3</sup>/min at 37.2 kPa and equipped with VFD;

Septage Receiving Station

- a septage receiving station located on Mission Road/Hwy 101, approximately 759 m upstream of the Sewage Treatment Plant, equipped with a connection pipe complete with a cam-lock fitting and lockable cap on an asphalt pad, discharging into the trunk sanitary sewer flowing to the Sewage Treatment Plant;

Previous Works

Inlet Chamber

- a 375 mm diameter influent sewer and one (1) inlet chamber equipped with basket screen, discharging to aerated lagoon Cell No. 1;

Aerated Lagoon Cells

- aerated lagoon Cell No.1 with a storage volume of approximately 38,040 m<sup>3</sup>, discharging to aerated lagoon Cell No.2;
- aerated lagoon Cell No.2 with a storage volume of approximately 36,600 m<sup>3</sup>, discharging via an effluent chamber to polishing lagoon Cell No. 3;
- air blower system;

Polishing Lagoon Cells

- polishing lagoon Cell No.3 with a surface area of approximately 8.1 ha and an operating depth of 1.4 m, discharged to polishing lagoon Cell No.4;
- polishing lagoon Cell No.4 with a surface area of approximately 8.1 ha and an operating depth of 1.4 m discharging to the

## CONTENT COPY OF ORIGINAL

final effluent chamber;

### Effluent Recirculation Pump

- one (1) recirculation pump located in the effluent chamber of Cell No. 2, rated at 22.6 L/s at 7.9 m TDH, pumping effluent back to the inlet chamber;

### Final Effluent Outfall

- one (1) Final Effluent chamber, equipped with an adjustable weir gate;  
- one (1) 450 mm diameter effluent pipe, discharging through an outfall structure at the bottom of the Magpie River;

### Phosphorus Removal

- one (1) 18,400 L phosphorus removal chemical storage tank;  
- two (2) chemical metering pumps (one standby), each with a capacity of 7.0 L/h, with chemical dosing to the effluent chamber of aerated lagoon Cell No. 2;

including 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 submitted supporting documents listed in Schedule A.

*For the purpose of this environmental compliance approval, the following definitions apply:*

"Approval" means this entire document and any schedules attached to it, and the application;

"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;

"BOD5" (also known as TBOD5) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand;

"By-pass" means diversion of sewage around one or more unit processes within the Sewage Treatment Plant with the diverted sewage flows being returned to the Sewage Treatment Plant treatment train upstream of the Final Effluent sampling location, and discharging to the environment through the Sewage Treatment Plant outfall;

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

"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 a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;

"*E. Coli*" refers to the thermally tolerant forms of *Escherichia* that can survive at 44.5 degrees Celsius;

"Emergency Situation" means a structural, mechanical or electrical failure that causes a temporary reduction in the capacity of the Sewage Treatment Plant or an unforeseen flow condition that may result in:

- a) danger to the health or safety of any person; or,
- b) injury or damage to any property, or serious risk of injury or damage to any property; or
- c) treatment process biomass washout.

"EPA" means the *Environmental Protection Act*, R.S.O. 1990, c.E.19, as amended;

"Equivalent Equipment" means a substituted equipment or like-for-like equipment that meets the required quality and

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performance standards of a named equipment;

"Event" means an action or occurrence, at a given location within the Sewage Treatment Plant that causes a Plant Bypass or Plant Overflow. An Event ends when there is no recurrence of a Bypass or Overflow in the 12-hour period following the last Bypass or Overflow. Two Events are separated by at least 12 hours during which there has been no recurrence of a Bypass or Overflow;

"Final Effluent" means sewage discharge via the Sewage Treatment Plant outfall after undergoing the full train of unit processes as listed in the Approval;

"Limited Operational Flexibility" (LOF) means any modifications that the Owner is permitted to make to the Works under this Approval;

"Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

"Monthly Average Concentration" means the arithmetic mean of all Daily Concentrations of a contaminant in the effluent sampled or measured, or both, during a calendar month;

"Notice of Modifications" means the form entitled "Notice of Modifications to Sewage Works";

"Owner" means the Corporation of the Municipality of Wawa and its successors and assignees;

"OWRA" means the *Ontario Water Resources Act*, R.S.O. 1990, c. O.40, as amended;

"Plant Overflow" means a discharge to the environment from the Sewage Treatment Plant at a location other than the plant outfall or into the plant outfall downstream of the Final Effluent sampling location;

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

"Sewage Treatment Plant" means the entire sewage treatment and effluent discharge facility;

"Water Supervisor" means the Water Supervisor for the Sault St. Marie office of the Ministry; and

"Works" means the sewage works described in the Owner's application, and this Approval, and includes Proposed Works, Previous Works, and modifications made under Limited Operational Flexibility.

*You are hereby notified that this environmental compliance 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 Approval 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 Approval, and the application for approval of the Works.

(3) Where there is a conflict between a provision of any document in the schedule referred to in this Approval and the conditions of this Approval, the Conditions in this Approval shall take precedence, and where there is a conflict between the documents in the schedule, the document bearing the most recent date shall prevail.

(4) Where there is a conflict between the documents listed in the Schedule 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.

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(5) The Conditions of this Approval are severable. If any Condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

### 2. EXPIRY OF APPROVAL

The approval issued by this Approval will cease to apply to those parts of the Works which have not been constructed within five (5) years of the date of this Approval.

### 3. CHANGE OF OWNER

(1) The Owner shall notify the Water Supervisor and the Director, in writing, of any of the following changes within thirty (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 Water Supervisor;

(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 Information Act*, R.S.O. 1990, c. C39 shall be included in the notification to the Water Supervisor;

(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 Approval, and a copy of such notice shall be forwarded to the Water Supervisor and the Director.

### 4. UPON THE SUBSTANTIAL COMPLETION OF THE WORKS

(1) Upon the Substantial Completion of the Proposed Works, the Owner shall prepare a statement, certified by a Professional Engineer, that the works are constructed in accordance with this Approval, and upon request, shall make the written statement available for inspection by Ministry personnel.

(2) Within one (1) year of the Substantial Completion of the Proposed Works, a set of as-built drawings showing the works "as constructed" shall be prepared. These drawings 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.

### 5. BYPASSES AND PLANT OVERFLOW

(1) Any Bypass or Plant Overflow is prohibited, except:

(a) in an Emergency Situation;

(b) where the Bypass / Plant Overflow is a direct and unavoidable result of a planned maintenance procedure, the Owner notified the Director 15 days prior to the Bypass/Plant Overflow and the Director has given written consent of the Bypass/Plant Overflow; and

(c) where the Bypass / Plant Overflow is planned for research or training purposes, the discharger notified the Director 15 days prior to the Bypass / Plant Overflow and the Director has given written consent of the Bypass / Plant Overflow.

(2) The Owner shall forthwith notify the Spills Action Centre (SAC) and the Medical Officer of Health of all Bypass and Plant Overflow Events. This notice shall include, at a minimum, the following information:

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- (a) the date, time, and duration of the Event;
- (b) the location of the Event;
- (c) the measured or estimated volume of the Event;
- (d) the reason for the Event; and
- (e) the level of treatment the Bypass(es) and/or Plant Overflow(s) received and disinfection status of same.

(3) The Owner shall submit Bypass and Plant Overflow Event Reports to the Water Supervisor on a quarterly basis, no later than each of the following dates for each calendar year: February 14, May 15, August 14, and November 15. Event Reports shall be in an electronic format specified by the Ministry. In each Event Report the Owner shall include, at a minimum, the following information on any Events that occurred during the preceding quarter:

- (a) the date of the Event(s);
- (b) the measured or estimated volume of the Event(s);
- (c) the duration of the Event(s);
- (d) the location of the Event(s);
- (e) the reason for the Event(s); and
- (f) the level of treatment the Bypass(es) and/or Plant Overflow(s) received and disinfection status of same.

(4) The Owner shall use best efforts to collect a representative sample consisting of a minimum of two (2) grab samples of the By-pass / Plant Overflow and have it analyzed for parameters outlined in Condition 7 using the protocols specified in Condition 9, one at the beginning of the Event and the second approximately near the end of the Event, to best reflect the effluent quality of such By-pass or Plant Overflow.

(5) The Owner shall maintain a logbook of all Plant Bypasses and Plant Overflows, which shall contain, at a minimum, the types of information set out in subsection 2(a) to 2(e) in respect of each Bypass and Plant Overflow.

**6. 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.

<b>Table 1 - Effluent Objectives</b>	
<b>Effluent Parameter</b>	<b>Concentration Objective</b> (milligrams per litre unless otherwise indicated)
CBOD5	20.0
Total Suspended Solids	25.0
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 - 8.5, inclusive, at all times;
- (b) operate the works within the Rated Capacity of the Works;

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(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 Condition 10 a summary of the efforts made and results achieved under this Condition.

### 7. EFFLUENT LIMITS

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

Table 2 - Effluent Limits	
Effluent Parameter	Average Concentration (milligrams per litre unless otherwise indicated)
Column 1	Column 2
CBOD5	25.0
Total Suspended Solids	30.0
Total Phosphorus	1.0

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

(a) The Monthly 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) Notwithstanding subsection (1), the Owner shall operate and maintain the Works such that the pH of the Final Effluent is maintained within the range of 6.0 - 9.5, inclusive, at all times.

(4) The effluent limits set out in Subsections (1) and (3) shall apply upon issuance of this Approval.

### 8. 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 Approval 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 Approval 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 prepare an operations manual upon issuance of this Approval, 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

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the Water Supervisor; and

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

(4) 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.

(5) 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.

**9. 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 Approval 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) Monthly means once every month;
- (b) Weekly means once every week;

(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:

<b>Table 3 - Raw Sewage Monitoring</b> (Inlet Chamber)		
<b>Parameters</b>	<b>Sample Type</b>	<b>Frequency</b>
BOD5	Composite	Monthly
Total Suspended Solids	Composite	Monthly
Total Phosphorus	Composite	Monthly
Total Kjeldahl Nitrogen	Composite	Monthly

<b>Table 4 - Aerated Lagoon Cells Content Monitoring</b> (Cells No.1 and No.2)		
<b>Parameters</b>	<b>Sample Type</b>	<b>Frequency</b>
Dissolved Oxygen	Grab	Weekly

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<b>Table 5 - Final Effluent Monitoring</b> (Final Effluent Chamber)		
<b>Parameters</b>	<b>Sample Type</b>	<b>Frequency</b>
CBOD5	Composite	Weekly
Total Suspended Solids	Composite	Weekly
Total Phosphorus	Composite	Weekly
Total Ammonia Nitrogen	Composite	Weekly
<i>E. coli</i>	Grab	Weekly
Temperature	Grab	Weekly
pH	Grab	Weekly
Unionized Ammonia	Calculated	Weekly

(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" (21st edition), as amended from time to time by more recently published editions.

(5) The temperature and pH of the effluent from the Works shall be determined in the field at the time of sampling for Total Ammonia Nitrogen. The concentration of un-ionized ammonia shall be calculated using the total ammonia concentration, pH and temperature using the methodology stipulated in "Ontario's Provincial Water Quality Objectives" dated July 1994, as amended, for ammonia (un-ionized).

(6) The Owner shall install and maintain 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.

**10. REPORTING**

(1) One (1) week prior to the start up of the operation of the Proposed Works, the Owner shall notify the Water Supervisor (in writing) of the pending start up date.

(2) Ten (10) days prior to the date of a planned By-pass being conducted pursuant to Condition 5 and as soon as possible for an unplanned By-pass, the Owner shall notify the Water Supervisor (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.

(3) The Owner shall report to the Water Supervisor or designate, any exceedence of any parameter specified in Condition 7 orally, as soon as reasonably possible, and in writing within seven (7) days of the exceedence.

(4) In addition to the obligations under Part X of the *Environmental Protection Act*, the Owner shall, within ten (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 Water Supervisor 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.

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(5) The Owner shall record in a logbook and report to the Water Supervisor within thirty (30) days of receiving a complaint relating to the operation of the Works.

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

(6) The Owner shall prepare and submit a performance report to the Water Supervisor 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 7, 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 6.

(g) a tabulation of the volume of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;

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

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

(j) a copy of all Notice of Modifications submitted to the Water Supervisor as a result of Schedule B, Section 1, with a status report on the implementation of each modification;

(k) a report summarizing all modifications completed as a result of Schedule B, Section 3; and

(l) any other information the Water Supervisor requires from time to time.

(7) The Owner shall, within thirty (30) calendar days of issuance of this Approval, submit a Municipal and Local Services Board Wastewater System Profile Information Form, and shall resubmit the updated document every time a notification is provided to the Water Supervisor in compliance with requirements of change of ownership under this Approval.

### 11. LIMITED OPERATIONAL FLEXIBILITY

(1) The Owner may make modifications to the Works in accordance with the Terms and Conditions of this Approval and subject to the Ministry's "Limited Operational Flexibility Criteria for Modifications to Sewage Works", included under Schedule B of this Approval, as amended.

(2) Sewage works proposed under Limited Operational Flexibility shall adhere to the design guidelines contained within the Ministry's publication "Design Guidelines for Sewage Works 2008", as amended.

(3) The Owner shall ensure at all times, that the Works, related equipment and appurtenances which are installed or used to achieve compliance are operated in accordance with all Terms and Conditions of this Approval.

(4) For greater certainty, the following are not permitted as part of Limited Operational Flexibility:

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- (a) Modifications to the Works that result in an increase of the Rated Capacity of the Works;
- (b) Modifications to the Works that may adversely affect the approved effluent quality criteria or the location of the discharge/outfall;
- (c) Modifications to the treatment process technology of the Works, or modifications that involve construction of new reactors (tanks) or alter the treatment train process design;
- (d) Modifications to the Works approved under s.9 of the EPA, and
- (e) Modifications to the Works pursuant to an order issued by the Ministry.

(5) Implementation of Limited Operational Flexibility is not intended to be used for piecemeal measures that result in major alterations or expansions.

(6) If the implementation of Limited Operational Flexibility requires changes to be made to the Emergency Response, Spill Reporting and Contingency Plan, the Owner shall, as deemed necessary in consultation with the Water Supervisor, provide a revised copy of this plan for approval to the local fire services authority prior to implementing Limited Operational Flexibility.

(7) For greater certainty, any modification made under the Limited Operational Flexibility may only be carried out after other legal obligations have been complied with, including those arising from the *Environmental Protection Act, Niagara Escarpment Planning and Development Act, Oak Ridges Moraine Conservation Act, Lake Simcoe Protection Act* and *Greenbelt Act*.

(8) Prior to implementing Limited Operational Flexibility, the Owner shall complete a Notice of Modifications describing any proposed modifications to the Works and submit it to the Water Supervisor.

*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 Approval 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 Approval the existence of this Approval.

2. Condition 2 is included to ensure that the Works are constructed in a timely manner so that standards applicable at the time of Approval of the Works are still applicable at the time of construction, to ensure the ongoing protection of the environment.

3. Condition 3 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 Approval and continue to operate the Works in compliance with it.

4. Condition 4 is included to ensure that the Works are constructed in accordance with the approval and that record drawings of the Works "as constructed" are maintained for future references.

5. Condition 5 is included to indicate that By-pass / Plant Overflows of untreated or partially treated sewage to the receiving watercourse is prohibited, save in certain limited circumstances where the failure to By-pass / Plant Overflow could result in greater injury to the public interest than the Bypass itself where a By-pass / Plant Overflow will not violate the approved effluent requirements, or where the By-pass / Plant Overflow 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 / Plant Overflow events.

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6. Condition 6 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 7 are exceeded.

7. Condition 7 is imposed to ensure that the effluent discharged from the Works 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.

8. Condition 8 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 Works.

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 Approval 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 Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.

11. Condition 11 is included to ensure that the Works are operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider. These Conditions are also included to ensure that a Professional Engineer has reviewed the proposed modifications and attests that the modifications are in line with that of Limited Operational Flexibility, and provide assurance that the proposed modifications comply with the Ministry's requirements stipulated in the Terms and Conditions of this Approval, MOE policies, guidelines, and industry engineering standards and best management practices.

### Schedule A

1. "Evaluation Study - Wawa Waste Stabilization Ponds - Stage 2, Future Treatment Requirements, may 1985 prepared by Knox martin Kretch;
2. Environmental Compliance Approval Application submitted by Kresin Engineering Corporation and received on August 18, 2014, including Design report and engineering drawings and specifications.

### Schedule B

#### **Limited Operational Flexibility Criteria for Modifications to Sewage Works**

1. The modifications to sewage works approved under an Environmental Compliance Approval (Approval) that are permitted under the Limited Operational Flexibility (LOF), are outlined below and are subject to the LOF conditions in the Approval, and require the submission of the Notice of Modifications. If there is a conflict between the sewage works listed below and the Terms and Conditions in the Approval, the Terms and Conditions in the Approval shall take precedence.

#### 1.1 Sewage Pumping Stations

- a. Alter pumping capacity by adding or replacing equipment where new equipment is located within an existing sewage treatment plant site or an existing sewage pumping station site, provided that the modifications do not result in an increase of the sewage treatment plant Rated Capacity and the existing flow process and/or treatment train are maintained, as applicable.
- b. Forcemain relining and replacement with similar pipe size where the nominal diameter is not greater than 1,200 mm.

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### 1.2 Sewage Treatment Process

- a. Installing additional chemical dosage equipment including replacing with alternative chemicals for pH adjustment or coagulants (non-toxic polymers) provided that there are no modifications of treatment processes or other modifications that may alter the intent of operations and may have negative impacts on the effluent quantity and quality.
- b. Expanding the buffer zone between a sanitary sewage lagoon facility or land treatment area and adjacent uses provided that the buffer zone is entirely on the proponent's land.
- c. Optimizing existing sanitary sewage lagoons with the purpose to increase efficiency of treatment operations provided that existing sewage treatment plant rated capacity is not exceeded and where no land acquisition is required.
- d. Optimizing existing sewage treatment plant equipment with the purpose to increase the efficiency of the existing treatment operations, provided that there are no modifications to the works that result in an increase of the Rated Capacity, and may have adverse effects to the effluent quality or location of the discharge.
- e. Replacement, refurbishment of previously approved equipment in whole or in part with Equivalent Equipment, like-for-like of different make and model, provided that the firm capacity, reliability, performance standard, level of quality and redundancy of the group of equipment is kept the same. For clarity purposes, the following equipment can be considered under this provision: pumps, screens, grit separators, blowers, aeration equipment, sludge thickeners, dewatering equipment, UV systems, chlorine contact equipment, bio-disks, and sludge digester systems.

### 1.3 Sewage Treatment Plant Outfall

- a. Replacement of discharge pipe with similar pipe size and diffusers provided that the outfall location is not changed.

### 1.4 Sanitary Sewers

- a. Pipe relining and replacement with similar pipe size within the Sewage Treatment Plant site, where the nominal diameter is not greater than 1,200 mm.

### 1.5 Pilot Systems

- a. Installation of pilot systems for new or existing technologies provided that:
  - i. any effluent from the pilot system is discharged to the inlet of the sewage treatment plant or hauled off-site for proper disposal,
  - ii. any effluent from the pilot system discharged to the inlet of the sewage treatment plant or sewage conveyance system does not significantly alter the composition/concentration of the influent sewage to be treated in the downstream process; and that it does not add any inhibiting substances to the downstream process, and
  - iii. the pilot system's duration does not exceed a maximum of two years; and a report with results is submitted to the Director and Water Supervisor three months after completion of the pilot project.

2. Sewage works that are exempt from section 53 of the OWRA by O. Reg. 525/98 continue to be exempt and are not required to follow the notification process under this Limited Operational Flexibility.

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3. Normal or emergency operational modifications, such as repairs, reconstructions, or other improvements that are part of maintenance activities, including cleaning, renovations to existing approved sewage works equipment, provided that the modification is made with Equivalent Equipment, are considered pre-approved.

4. The modifications noted in section (3) above are not required to follow the notification protocols under Limited Operational Flexibility, provided that the number of pieces and description of the equipment as described in the Approval does not change.



**Notice of Modification to Sewage Works**

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA AND SEND A COPY TO THE WATER SUPERVISOR (FOR MUNICIPAL) OR DISTRICT MANAGER (FOR NON-MUNICIPAL SYSTEMS)

<b>Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility</b> <i>(insert the ECA's owner, number and issuance date and notice number, which should start with "01" and consecutive numbers thereafter)</i>		
ECA Number	Issuance Date (mm'dd'yy)	Notice number (if applicable)
ECA Owner		Municipality

<b>Part 2: Description of the modifications as part of the Limited Operational Flexibility</b> <i>(Attach a detailed description of the sewage works)</i>
<p>Description shall include:</p> <ol style="list-style-type: none"> <li>A detail description of the modifications and/or operations to the sewage works (e.g. sewage work component, location, size, equipment type/model, material, process name, etc.)</li> <li>Confirmation that the anticipated environmental effects are negligible.</li> <li>List of updated versions of, or amendments to, all relevant technical documents that are affected by the modifications as applicable, i.e. submission of documentation is not required, but the listing of updated documents is (design brief, drawings, emergency plan, etc.)</li> </ol>

<b>Part 3 – Declaration by Professional Engineer</b>	
<p>I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:</p> <ol style="list-style-type: none"> <li>Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;</li> <li>Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;</li> <li>Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.</li> </ol> <p>I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate</p>	
Name (Print)	PEO License Number
Signature	Date (mm'dd'yy)
Name of Employer	

<b>Part 4 – Declaration by Owner</b>	
<p>I hereby declare that:</p> <ol style="list-style-type: none"> <li>I am authorized by the Owner to complete this Declaration;</li> <li>The Owner consents to the modification; and</li> <li>This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.</li> </ol> <p>4. The Owner has fulfilled all applicable requirements of the <i>Environmental Assessment Act</i>.</p> <p>I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate</p>	
Name of Owner Representative (Print)	Owner representative's title (Print)
Owner Representative's Signature	Date (mm'dd'yy)

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Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 3-0973-85-006 issued on October 25, 1985.

*In accordance with Section 139 of the Environmental Protection Act, 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 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:*

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance 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.

*Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.*

*The Notice should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

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

*This Notice must be served upon:*

The Secretary\*  
Environmental Review Tribunal  
655 Bay Street, Suite 1500  
Toronto, Ontario  
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of  
the Environmental Protection Act  
Ministry of the Environment and Climate Change  
2 St. Clair Avenue West, Floor 12A  
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) 212-6349, Fax: (416) 314-4506 or [www.ert.gov.on.ca](http://www.ert.gov.on.ca)

*The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.*

DATED AT TORONTO this 13th day of July, 2015

Fariha Pannu, P.Eng.  
Director  
appointed for the purposes of Part II.1 of the  
*Environmental Protection Act*

FL/

**CONTENT COPY OF ORIGINAL**

c: Area Manager, MOECC Sault Ste. Marie Office

c: DWMD Supervisor, MOECC Sudbury Office

Rekha Chetlur, Registration and Compliance Section, MOECC Drinking Water Programs Branch – IMBS

Orlan Euale, P. Eng., Kresin Engineering Corporation

# **APPENDIX C**

## **Overview of Sewage Lagoons**

Scale	1" = 100'
Sheet No.	1
Date	1914

Project	Sanitary Sewerage System
Location	City of Chicago
Engineer	George W. Nichols
Checked	W. H. ...

The Corporation of the  
City of Chicago  
Sanitary Sewerage  
Department  
100 N. Dearborn  
Chicago, Ill.

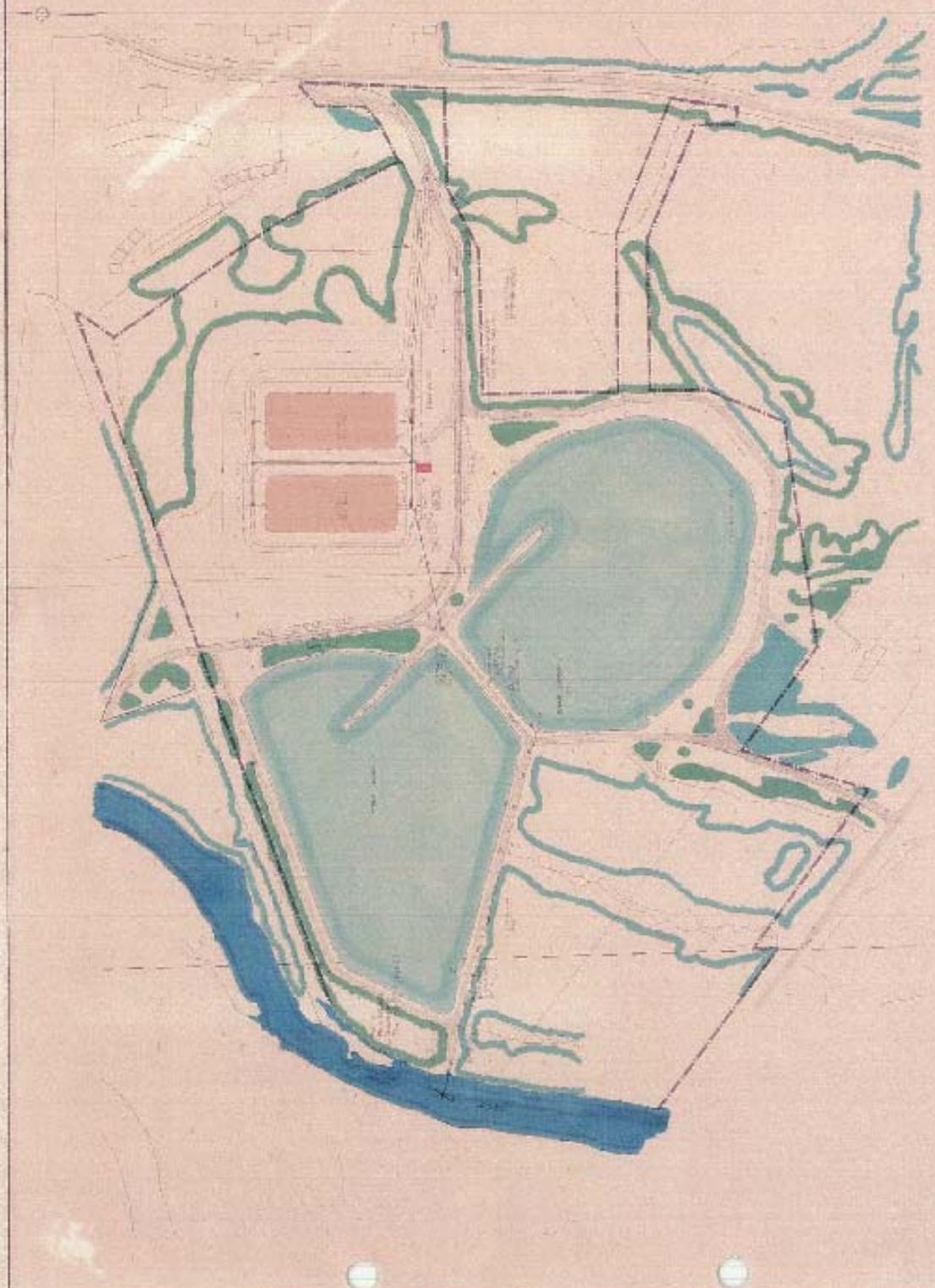


GENERAL

GENERAL  
PLAN



Sheet No.	1
Date	1914



Sanitary Sewerage System  
City of Chicago  
100 N. Dearborn  
Chicago, Ill.