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LAGOON CITY SEWAGE TREATMENT PLANT

2019 Annual Performance Report



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APPENDICES

Appendix A: Environmental Compliance Approvals

1 INTRODUCTION

The Lagoon City Sewage Treatment Plant (STP) is located on Part Lot 14, Concession 5 in the Township of Ramara, County of Simcoe. The Township of Ramara assumed the STP in 1992.

The STP is an extended aeration facility with an average day rated capacity of 2,273 m³/day. The STP treats residential and commercial sewage generated in Lagoon City and the Village of Brechin (Brechin).

In 2019, the STP serviced the equivalent of 1,023 units in Lagoon City and 152 in Brechin. The number of serviced customers in Lagoon City was estimated 2,046 (based on population density of 2 persons per unit), and the number of customers in Brechin was estimated at 395 (based on a population density of 2.6 persons per unit).

The information herein summarizes to the best of our knowledge the characteristics, operation and performance of the Lagoon City Sewage Treatment Plant during 2019.

2 APPROVALS

The Lagoon City STP and sewage collection system (including Sewage Pumping Station No. 4) were initially approved in 1987. They currently operate under the ECA No. 8497-8D3TU7.

The Brechin sewage collection system (including Sewage Pumping Station No. 8) was initially approved in February 2005. It now operates under ECA No. 0419-8ULPKR.

Biosolids are land applied under Non-Agricultural Source Material (NASM) Plans by Wessuc Inc. (Wessuc). The Township provides Wessuc with the test results of monthly biosolids sampling to meet the requirements of Ontario Regulation 267/03 (as amended by O. Reg. 338/09).

Table 1 summarizes all approvals issued since 1987. Copies of current approvals are attached in Appendix A.

Table 1: Summary of Approvals

Date Issued	Approval	Description
June 28, 2012	ECA No. 8497-8D3TU7	Revokes and replaces C of A No. 1114-745MQT. Modernization of approval.
May 30, 2012	ECA No. 0419-8ULPKR	Revokes and replaces C of A No. 7521-68LHVV. Approval for odour control system at Sewage Pumping Station No. 8.
July 6, 2007	C of A No. 1114-745MQT	Revokes and replaces C of A No. 1833-6WPLDG. Approval for clarifier No. 3, biosolids digester, biosolids pump station and storage tank, UV and sampler building, and blower room.
January 12, 2007	C of A No. 1833-6WPLDG	Revokes and replaces C of A No. 5589-5YUNM9. Approval for temporary UV system and flow meters.
February 4, 2005	C of A No. 7521-68LHVV	Approval for Brechin sewage collection system.
June 1, 2004	C of A No. 5589-5YUNM9	Consolidates, revokes and replaces C of A No. 3-1344-86-876. Approval for installation of septage receiving station.
January 28, 2003	C of A No. 3-1344-86-876	Amendment to C of A No. 3-1344-86-876. Approval for addition of a standby diesel generator.
February 8, 2000	C of A No. 3-1344-86-876	Amendment to C of A No. 3-1344-86-876. Approval for upgrades of digested biosolids storage facility.
April 1, 1987	C of A No. 3-1344-86-876	Approval for construction of the STP and Lagoon City sewage collection system.

3 TREATMENT PROCESS DESCRIPTION

In Lagoon City, sewage is collected at Sewage Pumping Station (SPS) No. 4 from SPS No. 1, SPS No. 2, SPS No. 3, SPS No. 5, and municipal sewers. Sewage is pumped from SPS No. 4 through a forcemain discharging to the grit channels at the STP. Flows are measured by a magnetic flow meter located in SPS No. 4.

In Brechin, sewage is conveyed to SPS No. 8 via SPS No. 6, SPS No. 7, and municipal sewers. SPS No. 8 pumps sewage through a 200 mm diameter forcemain discharging to the grit channels at the STP. Flows are measured by a magnetic flow meter located in SPS No. 8.

Septage is accepted at the STP at the septage receiving facility. Septage is discharged from haulage trucks to a flow splitter box, conveyed to septage holding tanks, and pumped to the grit channels. The volume of septage pumped to the inlet works is controlled manually by the operators to a target of no more than 5% of the total flow to the STP. In order to balance the organic loading to the plant and minimize the potential for process upsets, the addition of septage to the grit channels is decreased as raw sewage flows from the pumping stations increase. An activated carbon odor control facility is used to clean odorous gases vented from the septage receiving facility.

The blended raw sewage and septage flow through the grit channels to settle out sand and silt, pass through a bar screen to remove larger solids such as rags and plastics, and enter a flow splitter box. Sewage is distributed to any of three aeration basins from the flow splitter box using removable slide gates. The aeration basins are equipped with mechanical mixers and aerators to provide aerobic biological oxidation of the raw sewage. Two screw pumps lift the mixed liquor from the aeration basins to the final clarifiers.

Phosphorus is chemically precipitated in the clarifiers by adding alum at the base of the screw pumps. Polymer is added at the entry to the final clarifiers to improve settling performance in the clarifiers. Effluent from the clarifiers spills over effluent finger weirs and flows into the disinfection building where it is disinfected with UV light. The UV system consists of 36 low pressure UV lamps installed in a concrete channel with a UV sensor and monitoring system.

The disinfected effluent is conveyed to the STP effluent outfall where it discharges into a wetland, and ultimately Lake Simcoe.

The Lagoon City STP was designed to provide maximum operational flexibility by providing a significant and variable storage volume in the aeration basins. This allows the operators to make adjustments for influent flow and quality variations, equipment downtime, and optimization of the process. The STP is usually operated as two separate process trains, namely Plant No. 1 and Plant No. 2. Plant No. 2 is operated under normal flow conditions and consists of Aeration Basins No. 2 and No. 3, Screw Pump No. 2 and Clarifiers No. 2 and No. 3. Plant No. 1

is brought on line during times of increased hydraulic loading and consists of Aeration Basin No. 1, Screw Pump No. 1 and Clarifier No. 1.

Each clarifier is equipped with a floating siphon sludge removal mechanism that traverses the length of the clarifier and removes settled activated sludge from the bottom of the tank by suction. Activated sludge from Clarifier No. 1 is returned by gravity as return activated sludge (RAS) to Aeration Basin No. 1, or is wasted as waste activated sludge (WAS) to the WAS holding tank from where it is pumped to the biosolids pumping station. Activated sludge from Clarifiers No. 2 and No. 3 flow by gravity as RAS to Aeration Basin No. 2 and/or No. 3, or are wasted as WAS to the biosolids pumping station.

Submersible transfer pumps in the biosolids pumping station pump the WAS to Stage 1 and 2 aerobic digesters. The digesters are equipped with coarse bubble non-clog diffusers and provide volatile solids reduction and pathogen destruction. The digesters operate in batch mode where aeration is shut down overnight to allow the biosolids to thicken. Supernatant from the digesters is decanted by gravity to the biosolids pumping station from where it is returned to the aeration basins.

Digested biosolids are pumped to the biosolids storage tank for onsite storage. Additional aeration and mixing with coarse bubble non-clog diffusers are provided. A blower room, located above the biosolids storage tank, houses two blowers for the biosolids storage tank, one blower for the biosolids digesters, and one standby blower.

Biosolids are thickened by decanting supernatant from the biosolids storage tank to the biosolids pumping station from where it is returned to the aeration basins. Biosolids are land applied off-site.

4 PLANT FLOWS AND CAPACITY

4.1 RAW SEWAGE AND EFFLUENT FLOWS

As required by the ECA, raw sewage flows from Lagoon City and Brechin to the STP and effluent flows from the STP to the wetland, are measured and recorded by magnetic flow meters. Plant flows are summarized in Table 2.

Lagoon City generated sewage at an average daily flow (ADF) of 1,327 m³/day in 2019, about 5% more than in 2018. The average per capita sewage generation rate for the total equivalent population of 2,046 was 648 L/cap/day. The sewage flows are higher during periods of snow melt and heavy rainfall events indicating inflow and infiltration (I/I) in the sewers.

Brechin generated sewage at an ADF of 154 m³/day in 2019, about 12% less than in 2018. The average per capita sewage generation rate for the total equivalent population of 395 was 390 L/cap/day. The lower per capita sewage generation rate indicates a lower I/I contribution in the newer Brechin sewers than in the Lagoon City sewers.

In addition to the raw sewage received from Lagoon City and Brechin, the STP also received 104.67 m³ of septage from local haulers in 2019.

In total, the STP treated an overall ADF of 1,481 m³/day, and operated on average at 65% of its rated capacity of 2,273 m³/day. The overall per capita sewage generation rate was 607 L/cap/day.

The maximum daily flow occurred in April and was 3,686 m³/day, slightly lower than the STP's design peak flow capacity of 4,546 m³/day. The high flow can be attributed to a major snow melt and a period of rain resulted in significant inflow and infiltration into the sewer system. The high flow did not appear to adversely impact the performance of the STP.

Table 2: Flow Summary – 2019

Month	Lagoon City			Brechin			Septage	Combined		
	Total (m ³)	ADF (m ³ /day)	MDF (m ³ /day)	Total (m ³)	ADF (m ³ /day)	MDF (m ³ /day)	Total (m ³)	Total (m ³)	ADF (m ³ /day)	MDF (m ³ /day)
January	41522.2	1339.43	1664.36	4064.5	131.11	198.05	21.20	45607.9	1470.54	1796.66
February	35162.4	1255.8	2609.55	4128.3	147.44	393.20	27.25	39317.95	1403.24	3002.75
March	44383.0	1431.71	2367.1	5881.3	189.72	405.22	51.67	50315.97	1621.43	2687.5
April	62115.7	2070.58	3311.3	7790.0	259.67	383.79	4.54	69910.24	2330.19	3686.1
May	51449.9	1659.67	2113.72	5637.8	181.86	242.0		57087.7	1841.53	2331.7
June	48428.0	1614.27	1961.09	4759.6	158.65	211.61		53187.6	1772.92	2172.70
July	34409.5	1109.98	1659.6	2183.6	70.44	110.6		36653.1	1180.42	1770.2
August	28981.2	934.88	1208.52	1997.9	64.45	100.5		30979.1	999.33	1281.95
September	27039.5	901.32	1161.30	2577.2	85.91	105.60		29616.7	987.23	1266.9
October	33545.6	1118.19	1846.78	3676.4	118.58	208.97		37222.0	1236.77	2053.23
November	41141.27	1371.38	2962.11	6192.8	206.43	400.85		47334.07	1577.81	3362.96
December	34687.6	1118.95	1693.50	7207.9	232.51	320.84		41895.5	1351.46	2127.0
Annual	482,865.9	1,327.18	3,311.3	56,097.3	153.90	405.22		539,127.87	1481.07	3686.1

4.2 HISTORICAL SEWAGE FLOW SUMMARY

Table 3 presents a summary of the average daily flow (ADF) and the maximum daily flow (MDF) to the STP since 2007 and the previous three-year historical average and maximum flows. Figures reported prior to 2009 are for Lagoon City only, since the STP did not start treating sewage generated in Brechin until late 2008.

Table 3: Historical Flow Summary

Year	No. of Equivalent Units ¹	Equivalent Population	ADF (m ³ /day)	MDF (m ³ /day)	Rated Capacity (ADF) (m ³ /day)	Sewage Generation Rate (L/cap/day)
2007	1,004	2,008	1,501	7,072	1,713	747
2008	1,008	2,016	1,575	5,032	1,713/2,273	725
2009	1,155	2,398	1,496	4,125	2,273	652
2010	1,155	2,398	1,372	2,994	2,273	572
2011	1,155	2,398	1,445	3,895	2,273	603
2012	1,158	2,405	1,138	2,915	2,273	473
2013	1,159	2,408	1,341	3,204	2,273	557
2014	1,159	2,408	1,641	5,094	2,273	681
2015	1,162	2,414	1,262	3,313	2,273	523
2016	1,165	2,420	1,255	4,735	2,273	517
2017	1,170	2,431	1,566	4,213	2,273	644
2018	1,174	2,439	1,430	4,260	2,273	586
2019	1,175	2,441	1,481	3,686	2,273	607
3-YR			1,492	4,260	2,273	612

Note: 1. Residential and ICI flows represented as an equivalent number of single family dwelling connections

4.3 SYSTEM RESERVE CAPACITY

In accordance with MOECC guidelines and utilizing the previous three years of historical flows, the hydraulic reserve capacity of the STP is calculated using the following formula:

$$\text{Hydraulic Reserve Capacity} = \text{Design Flow} - \text{Committed Flow}$$

The design flow is equal to the maximum permissible flow approved by the ECA of 2,273 m³/day, and the committed flow is equal to the total expected flow by the existing and proposed connections based on the previous 3-year ADFs for Lagoon City and Brechin.

The estimated reserve capacity of the STP is 781 m³/day, as summarized in Table 4 below.

Table 4: Reserve Capacity

Service Area	Committed Equivalent Units	ppu	Committed Population	3-Year ADF (L/cap/day)	Committed Sewage Flow (m ³ /day)	Design Capacity (m ³ /day)	Reserve Capacity (m ³ /day)
Lagoon City	1079	2.0	2,158	614	1324		
Brechin	190	2.6	494	340	168		
Total	1,269		2,652		1,492	2,273	781

5 RAW SEWAGE CHARACTERISTICS

As required by the ECA, operating staff collected monthly eight-hour daytime composite samples of raw sewage from the grit channel where raw sewage from Lagoon City, Brechin and the septage receiving station are blended. Each sample was tested for TSS, BOD₅, TP and TKN. The test results are summarized in Table 5.

Raw sewage characteristics are similar to those observed in 2018 and are consistent with historical trends. The raw sewage characteristics indicate more dilute sewage than typical domestic raw sewage, due to the I/I into the sewage collection system.

Bioxide is added to raw sewage in SPS No. 8 (Brechin) to prevent anaerobic conditions and the formation of hydrogen sulphide within the long forcemain from SPS No. 8 to the STP.

Table 5: Raw Sewage Test Results - 2019

Month	BOD ₅ (mg/L)	TSS (mg/L)	TKN (mg/L)	TP (mg/L)
January	40	78	9.1	0.2
February	37	58	9.4	0.7
March	63	53	6.1	0.9
April	79	46	7.3	0.5
May	57	51	14.1	0.95
June	20	50	9.0	0.71
July	118	184	22.3	3.14
August	56	85	14.3	1.40
September	95	145	23.7	2.7
October	91	133	24.3	1.9
November	85	97	13.5	1.1
December	47	53	10.2	0.90
YEARLY AVERAGE	66	86	13.61	1.24

6 TREATMENT PERFORMANCE

6.1 EFFLUENT OBJECTIVES AND LIMITS

The effluent objectives and limits stipulated in the ECA are summarized in Table 6 below.

Table 6: Effluent Objectives and Limits

Parameter	Objective	Limit
CBOD ₅ (mg/L)	8	10
Total Suspended Solids (mg/L)	12	15
Total Phosphorus (mg/L)	0.15	0.3
<i>E. coli</i> (CFU/100 ml)	100	200
pH	6.5 to 9.0	

Effluent CBOD₅, TSS, and TP concentrations are non-compliant if the arithmetic mean of all samples taken within any month exceeds the effluent limits. The effluent *E. coli* concentration is non-compliant if the monthly geometric mean density exceeds the effluent limit. The effluent pH is non-compliant if any one sample is outside the acceptable range.

The ECA issued in 2013 replaced the BOD₅ parameter with CBOD₅, and revised the phosphorus objective and limit according to the *Lake Simcoe Protection Act*. Currently, the effluent objectives for phosphorus are an annual average concentration of 0.15 mg/L and total annual loading of 124 kg/year, while the effluent limits are a monthly average concentration of 0.3 mg/L and total annual loading of 249 kg/year.

A special condition of the ECA requires the Township to complete an effluent characterization within five years of the ECA's issue, or before June 28, 2017. This report was completed September 16, 2019, which summarizes effluent characteristics from May 2017 to March 2018.

6.2 EFFLUENT MONITORING

As required by the ECA, operating staff collected weekly 24-hour composite samples of final effluent from the plant outfall. Each sample was tested for CBOD₅, TSS, TP, total ammonia nitrogen (TAN) nitrates (NO₃-), and *E. coli*. The temperature and pH of the effluent sample taken at the time of sampling were used to calculate the un-ionized ammonia concentration. The field temperature and pH were taken from daily plant log sheets where the field temperature and pH were not recorded on the laboratory report. The effluent monitoring results are filed and are available upon request.

6.3 TREATMENT PERFORMANCE AND COMPLIANCE

The monthly mean concentrations of parameters with an effluent objective and/or limit are summarized in Table 7. In 2019, the STP complied with all effluent limits as stipulated in the ECA and met all effluent objectives.

Table 7: Effluent Monthly Mean Concentrations - 2019

Month	CBOD ₅ ¹ (mg/L)	TSS ¹ (mg/L)	TP ¹ (mg/L)	E.coli ² (cfu/100ml)
January	3.0	3	0.06	3.2
February	3.0	3	0.05	8.9
March	3.3	3	0.06	4.2
April	2.2	3	0.04	43.4
May	2.3	4	0.05	2.8
June	2.5	2	0.05	4.3
July	2.8	3.8	0.06	3.8
August	2.3	25	0.07	2.4
September	2.2	3	0.05	2.6
October	3.0	3.3	0.05	12.4
November	2.5	4.3	0.05	26.7
December	2.8	5	0.05	22.2
ECA Effluent Limit	10	15	0.30	200
ECA Effluent Objective	8	12	0.15	100

Notes: 1. Arithmetic Monthly Mean
2. Geometric Monthly Mean

6.3.1 CBOD₅

The annual average raw sewage BOD₅ was reduced from 66 mg/L in the raw sewage to 2.6 mg/L in the final effluent, corresponding to an average removal rate of 96%. All monthly mean CBOD₅ concentrations met the effluent objective and limit.

6.3.2 Total Suspended Solids

The annual average TSS concentration was reduced from 86 mg/L in the raw sewage to 3.2 mg/L in the final effluent, corresponding to an average removal rate of 96%. All monthly mean TSS concentrations met the effluent objective.

6.3.3 Total Phosphorus

The annual average TP concentration was reduced from 1.2 mg/L in the raw sewage to 0.05 mg/L in the final effluent, corresponding to an average removal rate of 96%. All monthly mean TP concentrations met the effluent objective and limit.

The annual phosphorus loading in the final effluent was 26.8 kg in 2019, well below the objective of 124 kg/year.

6.3.4 E. coli

All monthly geometric mean *E. coli* concentrations met the effluent objective and limit.

6.3.5 pH

The pH was maintained between 6.66 and 8.61, which is within the acceptable range of 6.5-9.0.

6.4 CHEMICAL DOSAGES

Alum is added at the base of each screw pump for phosphorus removal. A new alum coagulant was introduced in 2018. The new product allows for better settling at lower chemical application rates. Operators continue to work to optimize chemical usage to improve sludge settling characteristics while operating the STP at higher mixed liquor suspended solids (MLSS) concentrations.

A polymer is added to the influent of each clarifier to assist with phosphorus removal and improve the settling characteristics of the activated sludge.

6.5 MIXED LIQUOR SUSPENDED SOLIDS

Eight-hour composite samples of mixed liquor were collected weekly throughout 2019 and tested for Mixed Liquor Suspended Solids (MLSS) and Mixed Liquor Volatile Suspended Solids (MLVSS).

The average MLSS and MLVSS concentrations for 2019 were 1,435 mg/L and 805 mg/L respectively. The STP was able to meet its effluent objectives and limits while operating within these MLSS concentrations. Washout of the MLSS occurred during periods of high flow due to inflow and infiltration. Operators were quick to adjust their wasting rate and restore the MLSS concentration to more suitable levels.

6.6 SLUDGE HANDLING

A total volume of 1,012.5 m³ of biosolids at an average solids concentration of 2.7% by weight was removed from the biosolids storage tank and hauled off-site for land application on farm parcels within the Township of Ramara which have approved NASM plans.

Monthly samples were taken from the biosolids storage tank and tested for the metals listed in the Ontario Guidelines for Sewage Biosolids Utilization on Agricultural Lands and for other parameters as required by O. Reg. 267/03 (amended by O. Reg. 338/09) under the *Nutrient Management Act*, 2002, including total reactive phosphorus, TP, TKN, NH₃-N, NO₂⁻, NO₃⁻ and

TSS. Lab results are filed and are available upon request. Metal concentrations were well below the Maximum Permissible Metal Concentrations established for land application of biosolids.

7 SUMMARY OF OPERATION AND MAINTENANCE

7.1 MAINTENANCE AND REPAIRS

Routine operation and maintenance of the Sewage Pumping Station and Sewage Treatment Plant in 2019 included the following:

- Conducted settleability tests of the MLSS
- Collected samples as per the ECA
- Adjusted the speed of the screw conveyor to match incoming flows
- Mixed polymer solutions
- Adjusted alum and polymer dosages
- Flushed alum and polymer pumps and lines
- De-iced mechanical aerators
- Pulled and cleaned or replaced UV bulbs
- Cleaned secondary clarifiers
- Greased bearings of screw conveyor
- Blew out and restarted RAS siphons
- Attended to hydro failures
- Performed routine maintenance and repair of pumps
- Repair and replace aerators.
- Wasted sludge as required to maintain appropriate MLSS concentration
- Exercised generators
- Observed speciation of microorganisms in MLSS with a microscope
- Changed the oil in the digester blowers
- Decanted the digesters to aeration basin

In addition to routine maintenance and repair, a forcemain on Paradise Boulevard in Lagoon City was repaired in May, 2019.

7.2 CALIBRATION

The magnetic flow meters located at pump station #4 in Lagoon City and pump station #8 in Brechin, along with the flow meter located in the UV disinfection building (for final effluent) was calibrated by SCG Flowmetrix on June 4, 2019. All instruments met the MECF requirements for accuracy.

8 OPERATORS LICENSING AND TRAINING

Seven experienced Township Operators share responsibility for the operation and maintenance of the Lagoon City Sewage Works. Their current sewage works licensing status is summarized in Table 8 below.

Dave Readman is the overall responsible operator (ORO) with a Wastewater Treatment Facility Class II license equal to the Level II classification of the STP.

Table 8: Operator Licensing Summary

Operator	ID No.	Licence	Licence No.	Expiry Date
Dave Readman	900-02096	Wastewater Collection Facility II	13814	February 28, 2023
		Wastewater Treatment Facility II	13682	April 30, 2022
Donald O'Connell	900-17830	Wastewater Treatment Facility II	70061	March 31, 2023
Rob Smith	900-18962	Wastewater Collection Facility II	69640	July 31, 2022
		Wastewater Treatment Facility I	68906	February 28, 2021
Nicholas Leroux	900-55885	Wastewater Collection Facility II	51578	May 31, 2022
		Wastewater Treatment Facility II	69847	May 31, 2022
Kenneth Duffy	900-10961	Wastewater Treatment Facility I	13819	July 31, 2021
Joe Foley	900-70749	Wastewater Collection Facility I	102784	Oct 31, 2021
		Wastewater Treatment Facility I	87953	March 31, 2021
Kyle Readman	900-74830	Wastewater Collection Facility OIT	OT85260	June 30, 2020
		Wastewater Treatment Facility OIT	OT85211	June 30, 2020

9 SUMMARY

In summary for 2019:

- The Lagoon City Sewage Treatment Plant (STP) treated an average of 1,481 m³/day of raw sewage, and operated at 65% of its rated capacity.
- High flows continued to be observed during periods of precipitation and snow melt. The Township continues its inspections of the municipal sewage system and makes repairs as needed to reduce extraneous flows. It is estimated that approximately 50% of raw sewage flows can be attributed to some form of infiltration.
- The STP met all the effluent objectives and limits in 2019.
- The STP achieved an average effluent of Total Phosphorus of 0.05 mg/L and discharged a phosphorus load of 26.8 kg over the year, well within the 124 kg/year limit set in the ECA in accordance with the Lake Simcoe Phosphorus Reduction Strategy.
- A total volume of 1,012.5 m³ of biosolids was hauled off-site for land application. The biosolids met all compliance criteria listed in the Ontario Guidelines for Sewage Biosolids Utilization on Agricultural Lands.

APPENDIX A:
Environmental Compliance Approvals


AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 8497-8D3TU7

Issue Date: June 28, 2012

The Corporation of the Township of Ramara
 2297 Highway 12
 Post Office Box, No. 130
 Brechin, Ontario L0K 1B0

Site Location: Lagoon City Sewage Treatment Plant (STP)
 Part of Lot 14, Concession 5
 Ramara Township, County of Simcoe

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:

existing sewage treatment works to provide collection, transmission, treatment and disposal of sanitary sewage from the communal collection system, sanitary septic tanks and holding tanks located at the above site location, rated at 2,273 m³/d capacity, and discharging to Lake Simcoe, and consisting of the following *Works*:

Inlet Works:

- one (1) septage receiving station with manually cleaned bar screen with openings of approximately 25 mm.
- two (2) holding tanks for equalization of the incoming septage, with a total holding capacity of 100 m³.
- one (1) submersible septage transfer pump (grinder type) with a capacity of approximately 5 L/s, and one (1) 50 mm diameter forcemain to transfer septage from the holding tank cells to the grit removal chamber.
- one (1) odour control system comprising of two (2) carbon adsorption units, each consisting of an air fan and carbon adsorption tower.
- one (1) pumping station (PS) #4, located in Lagoon City to pump sewage influent to the plant. PS#8 located in Brechin and approved under Approval 7521-68LHVV also reports to this STP (PS#8 is referenced as PS#3 in Approval 7521-68LHVV).
- two (2) inflow magnetic flowmeters located in pump station (PS) #4 in Lagoon City and in PS#8 in Brechin.

Pre-treatment Works:

- two (2) degritting channels to settle out sand and silt from the incoming sewage, with a hydraulic capacity of 15,292 m³/d.
- one (1) bar screen for the removal of larger solids from the incoming sewage, with a hydraulic capacity of 56,230 m³/d.

Biological Treatment - Extended Aeration:

- one (1) flow splitter box for distribution of sewage to the three (3) aeration cells.
- three (3) aeration cells, each with a volumetric capacity of 1,081 m³ at a depth of 2.2 m, and equipped with mechanical aerators.
- two (2) lift screw pumps with variable frequency drives for transfer of mixed liquor to the final clarifiers. The maximum capacity of the screw pumps is 2,592 m³/d and 6,480 m³/d, for a total capacity of 9,072 m³/d.

Clarifiers:

- three (3) rectangular final effluent clarifiers, all with a surface loading rate of 0.40 L/m²/s; with approximate dimensions of 12.5 m x 4.4 m x 3.15 m; and complete with floating siphon sludge removal mechanism and 11.65 m long effluent weirs.

Sludge Management Works:

- one (1) first stage aerobic sludge digester, measuring 14.25 m (L) x 3.0 m (W) x 4.6 m (D) with effective storage volume of 192 m³, and equipped with coarse bubble aeration system.

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- one (1) 162 m³ second stage aerobic sludge digester, (12m x 3m x 4.5m deep), equipped with coarse bubble aeration system.
- one (1) aerobic sludge storage tank, measuring 20 m (L) x 8 m (W) x 4.6 m (D) with effective storage volume of 736 m³, and equipped with coarse bubble aeration system.
- one (1) 43 m³ waste sludge holding tank.
- two (2) sludge pumps (1 duty, 1 standby) rated at 22 L/s at 10 m TDH in the wet well beside the aerobic sludge storage tank.
- one (1) 150 mm diameter sludge loading arm.

UV and Composite Sampler Building:

- UV channel type ultraviolet (UV) light disinfection system, rated at 4,546 m³/d, with nine (9) UV modules, each equipped with four (4) UV lamps, and including all accessories.
- one (1) UV monitoring system with a separate stainless steel maintenance rack to service the UV units.
- one (1) programmable refrigerated automatic sampler complete with an intake pump, installed on the final effluent discharge from the STP to sample the effluent for demonstrating compliance with the terms and conditions of this *Approval*.
- one (1) 300 mm diameter magnetic flowmeter complete with remote display.
- one (1) 300 mm diameter UV by-pass line.

Blower Room:

- one (1) blower room, housing four positive displacement blowers, (3 duty, 1 standby) each rated at 700 m³/hr (standard conditions) and 52 kPa.

Effluent Outfall:

- one (1) 300 mm diameter effluent outfall to discharge at existing headwall to wetland area draining to the Lake Simcoe.

Miscellaneous:

- one (1) standby diesel generator set, having a rating of 250 kW, to provide essential power for the sewage treatment plant during emergency situations.

And all controls and sensors, electrical equipment, instrumentation, heating and ventilation, metal works, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned *Works*.

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

“Annual Average Concentration” means the arithmetic mean of the *Monthly Average Concentrations* of a contaminant in the effluent calculated for any particular calendar year;

“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;

“Average Loading” means the value obtained by multiplying the *Monthly Average Concentration* of a contaminant by the *Monthly Average Daily Flow* over the same calendar month;

“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 any discharge from the *Works* that does not undergo any treatment or only undergoes partial treatment before it is discharged to the environment;

“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

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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*;

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

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

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

"*Geometric Mean Density*" is the *n*th root of the product of multiplication of the results of *n* number of samples over the period specified;

"*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;

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

"*Owner*" means The Corporation of the Township of Ramara and includes its successors and assignees;

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

"*Peak Flow Rate*" means the maximum rate of sewage flow for which the plant or process unit was designed;

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

"*Regional Director*" means the Regional Director of the Central Region of the Ministry;

"*Source Protection Plan*" means a drinking water source protection plan prepared under the Clean Water Act, 2006;

"*Total Monthly Load*" means the value obtained by multiplying the total monthly volume of the effluent flow (or influent flow in case there is no effluent flow on-line monitoring) by the *Monthly Average Concentration* of Total Phosphorus; and

"*Works*" means the sewage works described in the *Owner's* application, and this *Approval*.

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*, the application for approval of the works and the submitted supporting documents and plans and specifications as listed in this *Approval*.

(3) Where there is a conflict between a provision of any submitted document 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 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 *Approval* are severable. If any requirement of this *Approval*, or the application of any requirement of this *Approval* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this *Approval* 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 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 *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 Information 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 *Approval*, and a copy of such notice shall be forwarded to the *District Manager* and the *Director*.

3. 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 8.

(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.

4. EFFLUENT OBJECTIVES

(1) The *Owner* shall use best efforts to meet the objectives set out in Table 1 by designing, constructing and operating the *Works* in such a way that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the *Works*.

Table 1 - Effluent Objectives	
Effluent Parameter	Concentration Objective (milligrams per litre unless otherwise indicated)
CBOD ₅	8
Total Suspended Solids	12
Total Phosphorus	0.24
E-Coli	100 organisms/100 ml (Monthly <i>Geometric Mean Density</i>)

Note: Concentration objectives apply to any single sample unless otherwise indicated.

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

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

(b) operate the *Works* within the *Rated Capacity* and the *Peak Flow Rate* of the *Works*; and

(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 discoloration on the receiving waters.

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

(4) Until Table 4 -Effluent Limits- is in effect pursuant to Condition 5(3) d, the *Owner* shall use best efforts to meet the objectives set out in Table 2 by designing, constructing and operating the *Works* in such a way that the Phosphorus Baseline Concentration and the Phosphorus Baseline Load are not exceeded in the effluent from the *Works*.

Table 2 – Lake Simcoe Phosphorus Reduction Strategy Effluent Objectives		
Total Phosphorus	Annual Average Concentration (milligrams per litre)	Total Annual Loading (kg per year)
Column 1	Column 2	Column 3
Phosphorus Baseline Concentration	0.15	-
Phosphorus Baseline Load	-	124

5. EFFLUENT LIMITS

(1) Subject to Condition 5(2), the *Owners* shall operate and maintain the *Works* such that the concentrations and loadings of the materials named below as effluent parameters in Table 3 are not exceeded in the effluent from the *Works*.

Table 3 - Effluent Limits		
Effluent Parameter	Monthly Average Concentration (milligrams per litre unless otherwise indicated)	Total Annual Loading (kilograms per year unless otherwise indicated)
Column 1	Column 2	Column 3
<i>CBOD5</i>	10	-
Total Suspended Solids	15	-
Total Phosphorus	0.3	249
<i>E-Coli</i>	200 organisms/100 ml (Monthly <i>Geometric Mean Density</i>)	-
pH of the effluent to be maintained between 6.0 to 9.5, inclusive.		

(2) The *Owner* shall operate and maintain the *Works* such that the Phosphorus Baseline Concentration and Load named in Table 4 below are not exceeded in the effluent from the *Works*, from the date established by Condition 5(3)d.

Table 4 – Lake Simcoe Phosphorus Reduction Strategy Effluent Limits		
Total Phosphorus	Annual Average Concentration (milligrams per litre)	Total Annual Loading (kg per year)
Column 1	Column 2	Column 3
Phosphorus Baseline Concentration	0.15	-
Phosphorus Baseline Load	-	124

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

- (a) Non-compliance with respect to *CBOD5* and/or Total Suspended Solids is deemed to have occurred if the *Monthly Average Concentration* of *BOD5* and total suspended solids as named in Column 1 of Table 3 in subsection (1) exceeds the corresponding maximum concentration of *CBOD5* and Total Suspended Solids set out in Column 2 of Table 3.
- (b) Non-compliance with respect to Total Phosphorus is deemed to have occurred in the following situations:
 - i) if the *Monthly Average Concentration* of Total Phosphorus set out in Column 1 of Table 3 exceeds the corresponding maximum concentration set out in Column 2 of Table 3; or
 - ii) if the Total Annual Loading of Total Phosphorus exceeds the corresponding maximum loading set out in Column 3 of Table 3; or
 - iii) subject to Condition 5(3)(d), if either the *Annual Average Concentration* or Total Annual Loading exceeds the corresponding Phosphorus Baseline Concentration and Load set out in Table 4.
- (c) Total Annual Loading of Total Phosphorus shall be calculated by adding the calculated *Total Monthly Load* discharged each month for each calendar year.
- (d) The Effluent Limits set out in Table 4, shall be in force the earlier of:
 - i) the date the *Director* approves an amendment to the *Approval* that would allow for an expansion of the *Works* or
 - ii) June 2, 2015.
- (e) The pH of the effluent shall be maintained within the limits outlined, at all times.

(4) Notwithstanding subsection (1), the *Owners* shall operate and maintain the *Works* such that the effluent is continuously disinfected so that the monthly *Geometric Mean Density* of *E. Coli* does not exceed 200 organisms per 100 millilitres of effluent discharged from the *Works*.

(5) Only those monitoring results collected during the corresponding time period shall be used in calculating the *Monthly Average Concentration* and *Annual Average Concentration* or *Average Loading* for this *Approval*.

6. OPERATION AND MAINTENANCE

(1) The *Owners* 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 *Owners* shall update the operations manual for the *works*, 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 *Owners* 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 *Owners* shall make the manual available to *Ministry* staff.

(4) The *Owners* 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.

7. MONITORING AND RECORDING

The *Owners* 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, monthly means once every month, and 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:

Table 5 - Raw Sewage Monitoring
(Sampling point at the inlet of the sewage treatment plant)

Parameters	Sample Type	Frequency
BOD ₅	8 hour daytime composite	Monthly
Total Suspended Solids	8 hour daytime composite	Monthly
Total Phosphorus	8 hour daytime composite	Monthly
Total Kjeldahl Nitrogen	8 hour daytime composite	Monthly

Table 6 - Effluent Monitoring
(Sampling point at the outlet of the sewage treatment plant or at the sewer outfall as close as possible to the sewage treatment plant)

Parameters	Sample Type	Frequency
CBOD ₅	24-hour composite	Weekly
Total Suspended Solids	24-hour composite	Weekly
Total Phosphorus	24-hour composite	Weekly
Total Ammonia Nitrogen	24-hour composite	Weekly
Nitrates	24-hour composite	Weekly
pH	Grab/Probe	Weekly
Temperature	Grab/Probe	Weekly
<i>E. Coli</i>	Grab	Weekly

(Note: Definitions for grab and composite samples are included in one or more documents below. 24-hour composite sample means a time-composite sample and constitutes of an integrated sample made up of blending 24 hourly aliquots taken by refrigerated autosampler, which are obtained at an hourly frequency having same sample volume).

(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;
- (d) for any parameters not mentioned in the documents referenced in (a) to (c), the written approval of the *District Manager* shall be obtained prior to sampling.

(5) The temperature and pH of the effluent from the *Workss* 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). For the purposes of determining concentration of unionized ammonia, single representative values of temperature and pH obtained through a probe shall be considered matching to the 24-hour composite total ammonia nitrogen sample.

(6) The *Owner* shall operate and maintain continuous flow measuring device(s), to measure the flowrate of the raw sewage

to the *Works* and effluent from 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(s), and record the flowrate at a daily frequency. The *Owner* shall ensure that the flow measuring equipment is calibrated a minimum of once each year to ensure the accuracy of the flow data measured.

(7) The *Owner* shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this *Approval*.

8. SPECIAL CONDITION - INITIAL EFFLUENT CHARACTERIZATION

(1) The *Owners* shall conduct an initial characterization of the effluent from the *Works*, as specified below, within five (5) years of the date of issuance of this *Approval*. All 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 7 - Effluent Monitoring Conventional and non-conventional parameters consistent with the Canadian Council of Ministers of the Environment (CCME) Municipal Wastewater Effluent (MWWE) Strategy Initial Characterization Program (Samples to be collected at the outlet of the UV Disinfection facility or at the outfall sewer as close as possible to the sewage treatment plant)		
Frequency	Quarterly (for one year)	
Test Group	Sample Type	Substance/Parameter
General Chemistry / Nutrients	24-hour Composite 24-hour Composite 24-hour Composite 24-hour Composite 24-hour Composite 24-hour Composite 24-hour Composite 24-hour Composite 24-hour Composite 24-hour Composite Field Field	Nitrate Nitrate + Nitrite Total Ammonia-Nitrogen (TAN) Total Phosphorus (TP) Orthophosphate Total Suspended Solids (TSS) Carbonaceous Biochemical Oxygen Demand (CBOD5) Chemical Oxygen Demand (COD) Cyanide (Total) pH Temperature
Pathogens	Grab	<i>E. Coli</i>
Acute Toxicity	Grab	Rainbow Trout (96-hour lethality)
	Grab	<i>Daphnia magna</i> (48-hour lethality)
Chronic Toxicity	Grab	Fathead Minnow (7-day growth inhibition & survivability)
	Grab	<i>Ceriodaphnia dubia</i> (7-day reproduction inhibition & survivability)

(2) Analysis of the effluent samples, grab/composite, shall be carried out by a laboratory accredited to ISO/IEC 17025, as amended from time to time.

(3) The *Owners* shall prepare and submit a report to the *Director, Regional Director* and *District Manager* within 6 months of the completion of the initial effluent characterization. The report shall contain, but not be limited to a summary and interpretation of the monitoring data from the initial effluent characterization outlined in subsection (1).

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

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(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;

(d) the Environment Canada publications "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout" (EPS 1/RM/13 Second Edition - December 2000) and "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*" (EPS 1/RM/14 Second Edition - December 2000), as amended from time to time by more recently published editions;

(e) the Environment Canada publications "Biological Test Method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia*" (EPS 1/RM/21 Second Edition – February 2007) and "Biological Test Method: Test of Larval Growth and Survival Using Fathead Minnows" (EPS 1/RM/22 Second Edition – February 2011), as amended from time to time by more recently published editions;

(f) Part A – Standard Method in "Technical Supplement 3: Standard Method and Contracting Provisions" (June 2008) of the CCME Canada-wide Strategy for the Management of Municipal Wastewater Effluent; and

(g) for any parameters not mentioned in the documents referenced in (a) to (f) above, the written approval of the *District Manager* shall be obtained prior to sampling.

9. REPORTING

(1) Ten (10) days prior to the date of a planned *By-pass* being conducted pursuant to Condition 3 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 5 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 ten (10) working days of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, *By-pass* 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 5, 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*;

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- (d) a summary of 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;
- (f) a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 4;
- (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) status update of the initial effluent characterization as per Condition 8 subsection (1) until it has been completed and the required report has been submitted; and
- (k) any other information the *District Manager* requires from time to time.

10. SOURCE WATER PROTECTION

The *Owners* shall, within sixty (60) calendar days of the Minister of the Environment posting approval of a *Source Protection Plan* on the environmental registry established under the Environmental Bill of Rights, 1993 for the area in which this *Approval* is applicable, apply to the *Director* for an amendment to this *Approval* that includes the necessary measures to conform with all applicable policies in the approved *Source Protection Plan*.

Schedule A

Environmental Compliance Approval (ECA) supporting documents:

1. Application for Approval of Municipal and Private Sewage Works, dated January 25, 1979 submitted by Inducon Development Corporation, Willowdale, Ontario, and supporting documents.
2. Application for Approval of Municipal and Private Sewage Works, dated March 15, 1985 submitted by Inducon Development Corporation, Willowdale, Ontario,
3. Application for Approval of Municipal and Private Sewage Works April 01, 1987 submitted by Inducon Development Corporation, Willowdale, Ontario, and supporting documents.
4. Amendment Notice-1 signed February 8, 2000 submitted by C.C. Tatham & Associates Ltd., Collingwood, Ontario, and supporting documents.
5. Amendment Notice-2 signed January 28, 2003 submitted by C.C. Tatham & Associates Ltd., Collingwood, Ontario, and supporting documents.
6. Application for Approval of Municipal and Private Sewage Works, dated April 16, 2004 submitted by C. C. Tatham & Associates Ltd., on behalf of the Corporation of the Township of Ramara, Ontario, and supporting documents.
7. Approval # 5589-5YUNM9 issued on June 1, 2004, and supporting documents.
8. Application for Approval of Municipal and Private Sewage Works dated December 18, 2006, submitted by C. C. Tatham & Associates Ltd., on behalf of the Corporation of the Township of Ramara, Ontario, and supporting documents.
9. Approval #1833-6WPLDG, issued on January 12, 2007, and supporting documents.
10. Application for Approval of Municipal and Private Sewage Works dated April 24, 2007, submitted by C. C. Tatham &

Associates Ltd., on behalf of the Corporation of the Township of Ramara, Ontario, and supporting documents.

11. Approval 1114-745MQT, issued on July 6, 2007, and supporting documents.

12. Lake Simcoe Protection Plan, June 2, 2009; and

13. Lake Simcoe Phosphorus Reduction Strategy, June 2010.

14. Meeting minutes between the Township of Ramara and the MOE dated May 5, 2011.

15. Letter from Suzanne Troxler, P.Eng., of C.C. Tatham & Associates Ltd. to Ellen Schmarje, of the MOE, dated January 6, 2012, with comments to draft ECA.

16. Suzanne Troxler, P.Eng., of C.C. Tatham & Associates Ltd. to Chris Hyde, of the MOE, dated January 10, 2012, noting substantial completion and as-built drawings.

17. Letter from Suzanne Troxler, P.Eng., of C.C. Tatham & Associates Ltd. to Edgardo Tovilla of the MOE, dated March 8, 2012, with amendments to the scope of the approval by adding a chemical feed system.

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 *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.

3. Condition 3 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.

4. Condition 4 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 5 are exceeded.

5. Condition 5 is imposed to:

(a) ensure that the effluent discharged from the *Work* to Lake Simcoe 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; and

(b) ensure compliance with the requirements of the Lake Simcoe Protection Plan (2009) and the Lake Simcoe Phosphorus Reduction Strategy (2010).

6. Condition 6 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.

7. Condition 7 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.

8. Condition 8 is included to require the *Owner* to conduct the initial effluent characterization in accordance with policy 4.2-DP of the Lake Simcoe Protection Plan (2009).

9. Condition 9 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.

10. Condition 10 is included to ensure that the works covered by this *Approval* will conform to the significant threat policies and designated Great Lakes policies in the *Source Protection Plan*.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 1114-745MQT issued on July 6, 2007.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993, S.O. 1993, c. 28 (Environmental Bill of Rights), the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. 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 Environmental Commissioner
1075 Bay Street, Suite 605
Toronto, Ontario
M5S 2B1

AND

The Director appointed for the purposes of Part II.1 of
the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

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This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca, you can determine when the leave to appeal period ends.

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

DATED AT TORONTO this 28th day of June, 2012

Ian Parrott, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

ET/
c: District Manager, MOE Barrie
Dave Stephen, The Corporation of the Township of Ramara


AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 0419-8ULPKR

Issue Date: May 30, 2012

The Corporation of the Township of Ramara
 2297 Highway 12
 Post Office Box, No. 130
 Brechin, Ontario
 L0K 1B0

Site Location: Brechin Sewage Pumping Station No. 6, 7 and 8
 3227 Ramara Road 47
 Ramara Township, County of Simcoe

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:

modifications of existing municipal sewage works for the collection, transmission and partial treatment of sanitary sewage constructed to serve the community of Brechin in the Township of Ramara, consisting of the following:

Proposed Works:

Installation of an Odour Control system consisting in a Bioxide treatment system to the main Brechin Sewage Pumping Station (SPS No.8) for odour and septicity control in the forcemain to the Lagoon City Sewage Treatment Plant (STP), consisting of the following:

- two (2) 2,000 L high density polyethylene (HDPE) double-wall storage tanks (1.2 m diameter by 2.4m high).
- a chemical metering panel, pre-piped with two peristaltic metering pumps (1 duty, 1 standby), each with a capacity of 64 L/day at 175 kPa.

Previous Works:
Sanitary Sewers

Sanitary sewers to be constructed on Highway 12, O'Neil Street, Perry Avenue, Church Street, Gladstone Avenue, County Road 47, Harrigan Road, Ramara Road 47, Concession 4, Easement No. 1 (between Highway 12 and Perry Avenue) and Easement No. 2 (between O'Neil Street and Ramara Road 47).

Storm Sewers

Storm sewers to be constructed on Ramara Road 47.

Low Pressure Sewers

Low pressure sewer to be constructed on Harrigan Road.

Sewage Pumping Stations

Construction of three (3) sewage pumping stations in the Hamlet of Brechin as follows:

- Sewage Pumping Station No. 6 to be located on the northeast corner of County Road 47 and Highway 12, consisting of a 1.8 m diameter prefabricated precast concrete wetwell complete with ultrasonic liquid level controllers and float switches backup, a high liquid level alarm complete with an autodialer, and two (2) 100 mm diameter vent pipes with

gooseneck and screen, and a pump station by-pass connection, together with an above ground fibreglass reinforced plastic enclosure housing two (2) horizontal self priming pumps, (one duty and one standby), each pump rated at 12.5 L/s at 5 m TDH, associated valves and pump control panel.

- Sewage Pumping Station No. 7 to be located within municipal road allowance on Perry Avenue, consisting of a 2.4 m diameter prefabricated precast concrete wetwell equipped with two (2) submersible pumps, (one duty and one standby), each pump rated at 13 L/s at 9.2 m TDH, complete with ultrasonic liquid level controllers and float switches backup, a high liquid level alarm complete with an autodialer and two (2) 100 mm diameter vent pipes with gooseneck and screen and a pump station by-pass connection, together with an above ground fibreglass reinforced plastic enclosure associated valves and pump control panel.
- Sewage Pumping Station No. 8 to be located within municipal property in Brechin Park, consisting of a 2.4 m diameter prefabricated precast concrete wetwell equipped complete with ultrasonic liquid level controllers and float switches backup, a high liquid level alarm complete with an autodialer and two (2) 100 mm diameter vent pipes with gooseneck and screen and a pump station by-pass connection, together with an above ground single storey building housing two (2) horizontal self-priming pumps, (one duty and one standby), each pump rated at 37.5 L/s at 25.22 m TDH, associated valves and pump control panel.

Sewage Forcemains

Sewage forcemains to be constructed on municipal lands, Perry Avenue, Ramara Road 47/Simcoe Road, Laguna Parkway and Paradise Boulevard.

Including, all other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage Works.

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;

"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*;

"District Manager" means the District Manager of the [, *insert specific office*];

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

"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;

"Owner" means The Corporation of the Township of Ramara and its successors and assignees;

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

"Previous Works" means those portions of the sewage works previously constructed and approved under an *Approval*;

"Proposed Works" means the sewage works described in the Owner's application, this *Approval*, to the extent approved by this *Approval*;

"Source Protection Plan" means a drinking water source protection plan prepared under the Clean Water Act, 2006;

"Works" means the sewage works described in the *Owner's* application, and this *Approval*, and includes both *Proposed Works* and *Previous Works*.

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.
- (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 *District Manager* 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 *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 Information 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 *Approval*, and a copy of such notice shall be forwarded to the *District Manager* and the *Director*.

4. OPERATIONS MANUAL

- (1) The *Owner* shall prepare an operations manual for the Odour Control system prior to the commencement of operation of the sewage works, 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;

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(d) contingency plans and procedures for dealing with any abnormal situations and for notifying the *District Manager*; and

(e) complaint procedures for receiving and responding to public complaints.

(2) The *Owner* shall maintain the operations manual up to date through revisions undertaken from time to time and retain a copy at the *Owner's* office. Upon request, the *Owner* shall make the manual available for inspection and copying by *Ministry* personnel.

5. ODOUR MONITORING AND ASSESSMENT

(1) The *Owner* shall, within sixty (60) days after issuance of this *Approval*, prepare an odour monitoring and assessment report based on the pilot study recently completed and submit the report to the *District Manager* for filing.

(2) The *Owner* shall, after issuance of this *Approval* and prior to commissioning of the *proposed works*, submit to the *District Manager* a monitoring plan to assess the effectiveness of the Odour Control system. At a minimum, this monitoring plan shall include, but not limited to:

(a) Monitoring of temperature, hydrogen sulphide (H₂S) and any other parameter required for a proper assessment of ventilation dynamics and odour correlation at the sampling sites during the monitoring time.

(b) Prior to commissioning of the works. This monitoring shall be conducted at the Lagoon City STP twice during one month, during warm weather conditions, to identify pre-construction conditions. This monitoring data will be used as baseline information for comparison against further data to be collected under operational conditions. Comparison of the pre and post monitoring conditions data will provide the ability to evaluate if there were changes to ventilation dynamics from the H₂S and temperature acquired in the sewer system as a result of the construction and operation of the Odour Control system.

(c) After commissioning of the *Works*. The monitoring plan shall be conducted once per month during warm weather conditions over one (1) year following the start up operations of the *proposed works*.

(3) The *Owner* shall retain a qualified Professional Engineer to evaluate the pre and post monitoring conditions, changes to ventilation dynamics from the H₂S and temperature as a result of the implementation of the *proposed works*. A report shall be prepared by this Engineer and shall be included as part of the annual reporting requirements under the Lagoon City STP Approval No. 1114-745MQT, issued on July 6, 2007, as amended from time to time.

(4) The *Owner* shall develop appropriate procedures for recording and responding to environmental odour related complaints relating to the operation of the *Works*. The *Owner* shall notify the *District Manager* of the measures taken to address the complaints.

6. SOURCE WATER PROTECTION

The *Owner* shall, within sixty (60) calendar days of the Minister of the Environment posting approval of a *Source Protection Plan* on the environmental registry established under the Environmental Bill of Rights, 1993 for the area in which this *Approval* is applicable, apply to the *Director* for an amendment to this *Approval* that includes the necessary measures to conform with all applicable policies in the approved *Source Protection Plan*.

Schedule A

Environmental Compliance Approval (ECA) supporting documents:

1. Application for Approval of Municipal and Private Sewage Works, dated September 21, 2004, submitted by Tim Collingwood, P. Eng., C.C. Tatham & Associates Ltd.

2. Design summary entitled 'Township of Ramara, Brechin Sewage Pumping Stations, Design Brief, dated September 9, 2004 and September 16, 2004, prepared by C.C. Tatham & Associates Ltd., Consulting Engineers.

3. Final Plans and Specifications entitled 'Township of Ramara, Brechin Sanitary Servicing, Contract No. 303841' prepared by C.C. Tatham & Associates Ltd., Consulting Engineers.

4. Application for Approval of Sewage Works, prepared by David Stephen, Manager, Environmental Services of

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the Township of Ramara, dated April 17, 2012, with supporting documentation prepared by C.C. Tatham & Associates of Orillia, ON.

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 require that the *proposed 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, inclusion ensures that 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*.
5. Condition 5 is included to ensure that the *Works* have no impact on the existing potential for increased nuisance odours at the site and that, if necessary, any odour problems associated with the *Works* are properly addressed.
6. Condition 6 is included to ensure that the works covered by this *Approval* will conform to the significant threat policies and designated Great Lakes policies in the *Source Protection Plan*.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 7521-68LHVV issued on February 4, 2005.

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:

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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
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**

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

DATED AT TORONTO this 30th day of May, 2012

Mansoor Mahmood, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

ET/
c: District Manager, MOE Barrie
Suzanne Troxler, C.C. Tatham & Associates