2021 ANNUAL SUMMARY REPORT

Water Pollution Control Plant

Amended Environmental Compliance Approval

Number 6418-BN2NUC

The 2021 WPCP Summary Report was prepared by:

Ted Joynt Overall Responsible Operator

Reviewed By;

Phil Kelly Operator in Charge

Executive Summary

The enclosed Annual Summary report is prepared in accordance with Amended Environmental Compliance Approval (ECA) # 6418 BN2NUC Condition 11 Reporting subsection (5) for the Township of Cramahe (Operating Authority) Village of Colborne Water Pollution Control Plant (WPCP) for submission to the Ministry of Environment Conservation & Parks (MECP) no later than March 31, 2021.

The secondary purpose of this 2021 Summary Report is to keep the Operating Authority, Owner (Council) informed regarding the general operation, maintenance and facility compliance regarding solids and liquid handling and disposal as per the ECA.

Each year it is a requirement that the owner prepares and submits an annual summary report for the previous calendar year and must contain the following information:

a. a summary and interpretation of all Influent, Imported Sewage monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;

b. a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

c. a summary of all operating issues encountered and corrective actions taken;

d. a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

e. a summary of any effluent quality assurance or control measures undertaken;

f. a summary of the calibration and maintenance carried out on all Influent, Imported Sewage and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;

g. a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

    i. when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;

    ii. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

h. a tabulation of the volume of sludge generated, 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;

i. a summary of any complaints received and any steps taken to address the complaints;

j. a summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;

k. a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.

l. a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted.

m. a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year.

Referencing Information

Colborne Water Pollution Control Plant

Owner and Operating Authority – Corporation of the Township of Cramahe

Amended April 30, 2020 Environmental Compliance Approval – 6418 - BN2NUC

Mailing Address – PO Box 357,
1 Toronto Street,
Colborne, Ontario, K0K 1S0

Site Address - 1108 Ontario Street, Colborne, ON

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Works Number # 120000088

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APPENDICES

WPCP Description

The Colborne Wastewater Treatment Process is an extended aeration process. Meaning, the wastewater spends an extended period of time in the biological process

There are two unique features in the plants design. The first being a peak flow attenuation pond, to which raw sewage flows when it exceeds the designed peak flow. As such there is virtually no chance for a sewage treatment bypass. The peak flow attenuation pond is emptied by directing flow back into the plant for treatment once peak flows subside. The attenuation pond can also be used to hold wastewater during facility maintenance.

The second feature is a bio solids/waste holding pond which has the capacity to hold sludge for an extended period of time. This bio solids holding pond decants by gravity into the peak flow attenuation pond. Sludge is removed yearly to maintain adequate storage room. The bio-solids/waste stabilization pond has a capacity of 4000 m3 for the storage for sludge. The Bio-solids Waste stabilization Pond controls odors' and allows the sludge to stabilize so that land application can occur.

There are two composite samplers, one for raw wastewater and one for final effluent. There are two final effluent sample points, one at the dechlorinating facility and the second sampling point at Station 2 (final effluent), prior to discharge to Lake Ontario.

Raw wastewater from the collectors in the sanitary collection system flows by gravity to a single trunk line that discharges to an influent wet well located at the treatment facility.

Primary Treatment - From this wet well low lift pumps move the wastewater through a "Muffin Monster" (grinder) to grind the solids and other debris into small pieces, this grinder protects downstream equipment. After grinding the solids, the wastewater flows to grit channels where sand and other debris settles out, up to this point this is referred to as primary treatment. After grit removal, the wastewater flows aeration basin.

Secondary Treatment - In the aeration basin the biological microorganisms begin to feed on nutrients and other contaminates. After the biological process the wastewater continues to a secondary clarifier where the velocity of the wastewater slows down allowing solids settle and the removal of grease and other floatables are skimmed off. Aluminum Sulphate (coagulant) is added to the wastewater at the head of the Secondary Clarifier. This coagulant allows electrically charged particles contained in the wastewater to clump together forming "floc". This floc then settles to the bottom of the clarifier leaving a much cleaner effluent wastewater (final effluent).

Final Effluent - The clear supernatant flows to an effluent pumping station wet well, where chlorine (sodium hypochlorite NaOCl) is added for disinfection. The final effluent is then pumped into a force main which takes the final effluent to a dechlorinating process. Sodium metabisulphite ($Na_2S_2O_5$) is added to the final effluent to remove any residual chlorine left over from the disinfection process. There can be no more than 0.02 mg/l of total chlorine discharged into the receiving body of water (Lake Ontario). Dechlorination occurs approximately 1.25 km south from the plant. After dechlorination the final effluent flows to the receiving body of water in this case Lake Ontario.

Process control – Automated control of the Water Pollution Control Plant (WPCP) is accomplished by a Supervisory Control and Data Acquisition (SCADA) system. This SCADA system controls all of the process related mechanical devices including electrical. Chemical dosing is also controlled by SCADA. The SCADA system was updated in 2018, improving and allowing for better collection, interpreting and trending of data. The upgrades involved the installation of a new PLC control program (iFIX), along with new SCADA computers and monitoring screens. As well, a new data historian reporting system was installed (e-RIS) which allows for better control over plant data then the previous reporting system. The new system also includes complete redundancy to ensure that should one SCADA computer fail, then the other can be used without loss of data or plant control.

The SCADA system allows the operators to control, monitor, trend and report all aspects of wastewater treatment processes (see below);

- Influent pump station pump control,
- Aeration tank blower control,
- Groundwater pump station pump control,
- Alum injection system control,
- RAS / WAS pump & valve control,
- Scum pumping station pump control,
- Effluent pumping station pump control including chlorination and dechlorination
- Monitoring of various other alarms and process parameters including flow monitoring

The SCADA process control system, ultimately filters commands that control pumps, process interlocks and alarms that alert operators when equipment malfunctions or processes fail. The system also monitors and tracks large volumes of data that are used for trending, process control and compliance reporting. The servers that make up the SCADA system operate 24/7 and are rarely off line.

Flow monitoring - There are three flow measuring devices/transmitters. FIT 330 Parshall flume is located immediately upstream of the grit channels and FIT340 after the secondary clarifier. These are used for flow monitoring during wastewater treatment. There is an electromagnetic flow meter (FIT615) located at the dechlorinating facility used for process control to dose the dechlorinating agent and measure flow to Lake Ontario. The effluent flow from the mag meter (FIT615) is used as a compliance flow.

Emergency power is provided by two generators, one is located at Building 1 (control room) and the other at Building 3 (dechlorination). Both of these generators are capable of providing all power requirements regardless of the situation. The generators are exercised monthly to make sure they are always ready to supply power during a power outage.

Section 11 Reporting

a: A summary and interpretation of all Influent Sewage Monitoring data and a review of the historical trend of the sewage characteristics and flow rates;

Influent Sewage Characteristics

The influent sewage characteristics have not change nor is it anticipated to change. The wastewater is mostly residential with some commercial and light industry

Please refer to ***Annex B*** for raw wastewater characteristics

b: a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval including an overview of the success and adequacy of the Works.

The Wastewater plant was operated and maintained so that the concentrations and waste loadings of material (CBOD5, TSS, TP, TKN, met all effluent parameters and did not exceed limitations. The monthly average concentration and average loadings were all within limits. The pH of the effluent was maintained within range of set limitations at all times. Flows were within the Design Flow Rate (based on monthly averages).

Please refer to *Appendix B* for Final Effluent monitoring data

c: A summary of all operating issues encountered and corrective actions taken;

Non-Compliance with ECA

For the month of October 2021, the Township of Cramahe (Colborne) WPCP Works # 120000088 did not meet the compliance limit for E-Coli. The Geomean average for October was 554.2 cfu /100 ml, ECA compliance limit is 200 cfu/100 ml. As per ECA NUMBER 6418-BN2NUC Condition 11 (1) Reporting, verbal notification was provided to Paul Millar at the MECP District Office Peterborough at 14:49 hrs. November 8, 2021. Written notification was provided as per Condition 11 (1) of the ECA.

Corrective Action

See *Appendix C*

d: a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the works;

No major equipment repairs were needed throughout the year. Routine maintenance was carried out based on manufactures' recommendations and as needed.

Please refer to *Appendix D* for maintenance activities

e: A summary of effluent quality assurance or control measures taken;

Quality control is monitored using the daily SCADA printouts and online instrumentation location in the control room. Laboratory results are reviewed when received. Process changes are made based on an accredited laboratory results, in-house testing and physical monitoring so as to achieve the best quality effluent.

Routine activities such as manually checking sludge depths and dissolved oxygen in the aeration tank as well as visual rounds add to the control measures taken.

The WPCP can also be monitored remotely using VPN. This remote monitoring allows for the operator to make changes to all control set points as well as responding to alarms states while not onsite. All enabled alarms when latched will be sent to the operator's cell phone via a RACO dialer.

f: A summary of the calibration and maintenance carried out on all Influent, Imported Sewage and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the

The plant flow meters are annually calibrated by Franklin Empire Inc. Other instrumentation, such as pH meters are calibrated in-house prior to each use. The flow meter validation report are contained in *Appendix F*

The HACH DR3900 and 850 used for Total Chlorine Residual is validated using HACH chlorine standards

g: a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

i. when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;

The plant effluent concentrations in terms of CBOD and Total Ammonia Nitrogen (TAN) Total Suspended Solids (TSS) and Total Phosphorous (TP) were all within the required ECA limits for 2020. The limits for Total Chlorine Residual were met. Data collected for 2020 shows that the extended aeration process provided a high quality of effluent. The nutrient loadings on the receiving body of water (Lake Ontario) were within the criteria noted in the Environmental Compliance Approval #6245-AB6HDR. (Schedule C)

ii. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

The average daily flow (ADF) is based on FIT615 Final Effluent flow, the ADF was 1024 m3 /d. The rated capacity is 1780 m3/d. Eighty percent of the rated capacity would be 1424 m3/d. The effluent flows were below 80%

h. a tabulation of the volume of sludge generated, 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;

It is estimated that 4 m^3 of sludge is generated per day. Two thousand and eighty m^3 of sludge was removed from Cell 2 between October 12 and 14th2021. More waste sludge will be removed in 2022 the exact volume has yet to be determined.

Please refer to Appendix H for the sludge removal records (Terrapure)

Date: October 12 to 14th, 2021
NASM #: 23595
Site Name: Benedetti - Herley
Field #: 1
Hectares: 21.31
Field Conditions: dry

Volume Allowed: 2480 m^3
Volume Prev Spread: 1940 m^3
Volume Applied: 2480 m^3
Application Rate: 92.42 m^3/ha
Weather Conditions: warm, clear
Material: liquid

i: A summary of any complaints received during the reporting period and any steps taken to address the complaints;

No formal complaints were received in 2021 regarding the Wastewater Treatment Plant or Collection system.

j. *a summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;*

The plant includes a peak flow attenuation pond (14,000 m3) that allows for high flow to be redirected away from the main plant processes, as such there were no treatment plant bypass events or abnormal discharges or spills during the year. Quarterly reports were submitted to the MECP as per the ECA.

See Appendix I– Bypass Report

K: A copy of all notices 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.

There were no modifications as a result of Schedule B, Section 1 of the ECA

L: a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted.

During the fall of 2021 several repairs were made to laterals on Simmons Street, Streamside and Hwy 2E (King Street). These repairs reduced infiltration base on observations of flows coming into the WPCP as well as visual inspections during heavy flow periods.

Camera investigations have been, and are being conducted on other areas of the sanitary system to determine other problem areas. More work is planned for the spring of 2022 exact costs and estimates are still being determined however, money has been budgeted for mainline and lateral repairs during 2022.

In 2021 the Colborne WPCP and Collection system had zero secondary treatment bypasses or CSO events. The average daily flow (ADF) for 2021 was 944.32 m^3/d. The rated capacity of the facility is 1750 m3.

Infiltration and Inflow (I&I) in the collection system are the main focus of a control group made up of staff, with a goal to gather data that could be used to restore plant capacity for future development. Staff reviewed past engineering reports both recent and past reports for background information.

Open Channel flow Meters were purchased in early 2020. These flow meters were installed at several different locations in the collection system and left for as long as 2 weeks gathering flow data. The data collected provided specific locations in the collection system where resources could be concentrated in the future.

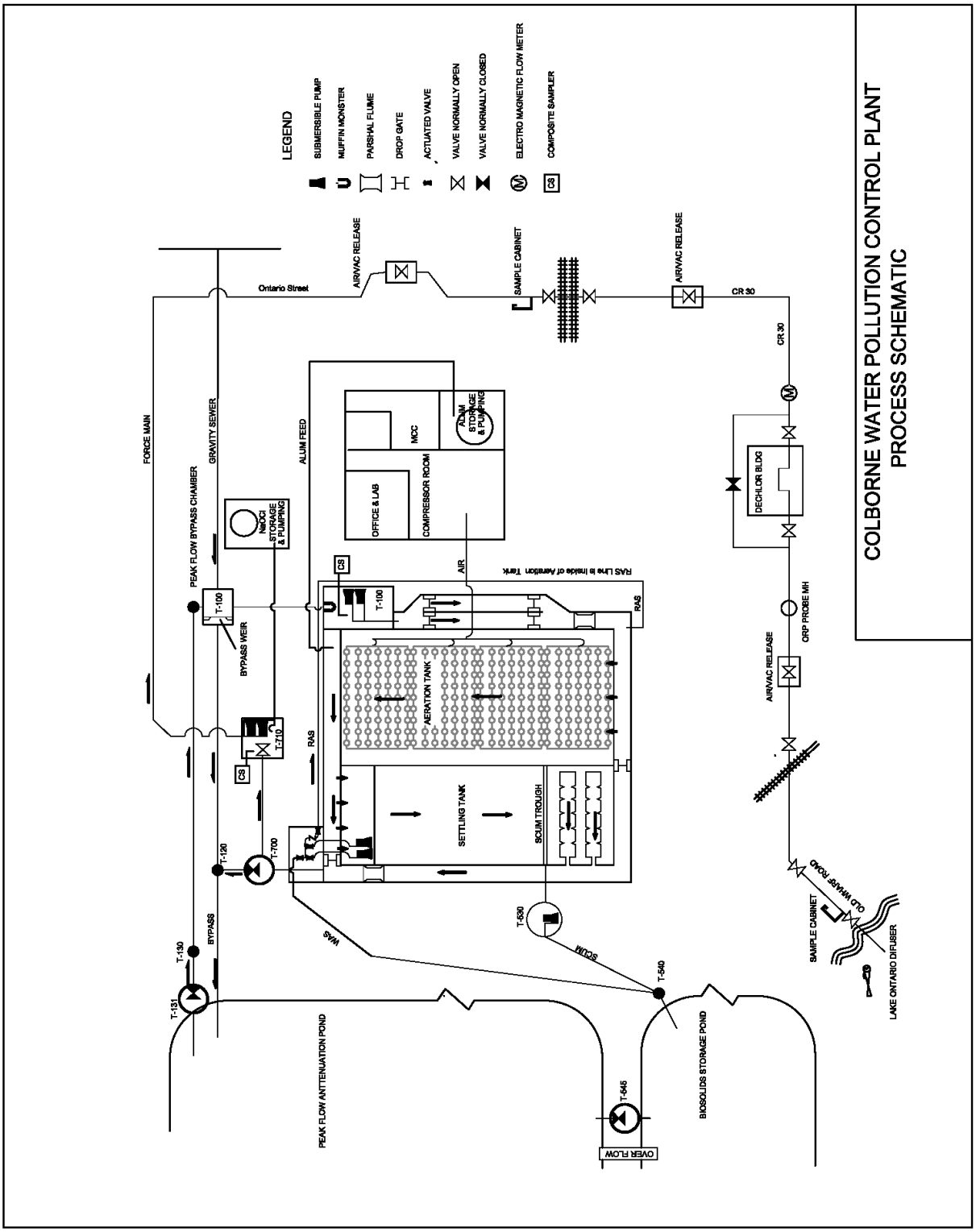
During 2021 the municipality focussed on gathering as much information as possible regarding I&I. Methods used will include reviewing plant flows, CCTV, regular visual inspections of maintenance chambers, open channel flow monitoring and the use of a ZOOM type HD camera to locate problem areas for further CCTV inspection. The aim is to use the data, observations and information gathered in 2021 to form the basis of a budget forecast for actual repairs to be performed in 2022.

n. *a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year* and a schedule for the next reporting year;

There were no deviations from scheduled sampling during 2020.

Please refer to Appendix I Sampling schedule

Please refer to the Process Schematic drawing on the following page.


COLBORNE WATER POLLUTION CONTROL PLANT
PROCESS SCHEMATIC
LEGEND
SUBMERSIBLE PUMP
MUFFIN MONSTER
PARSHAL FLUME
DROP GATE
ACTUATED VALVE
VALVE NORMALLY OPEN
VALVE NORMALLY CLOSED
ELECTRO MAGNETIC FLOW METER
COMPOSITE SAMPLER
Ontario Street
AIR/VAC RELEASE
SAMPLE CABINET
AIR/VAC RELEASE
CR 30
CR 30
FORCE MAIN
GRAVITY SEWER
PEAK FLOW BYPASS CHAMBER
NaOCl STORAGE & PUMPING
ALUM FEED
MCC
ALUM STORAGE & PUMPING
OFFICE & LAB
COMPRESSOR ROOM
DECHLOR BLDG
T-100
BYPASS WEIR
T-100
AIR
RAS Line is Inside of Aeration Tank
RAS
ORP PROBE MH
AIR/VAC RELEASE
AERATION TANK
T-710
RAS
SETTLING TANK
SCUM TROUGH
T-120
T-700
T-530
SCUM
WAS
BYPASS
T-130
T-131
T-540
SAMPLE CABINET
OLD WHARF ROAD
LAKE ONTARIO DIFUSER
PEAK FLOW ANTTENUATION POND
BIOSOLIDS STORAGE POND
T-545
OVER FLOW

Appendix A – Amended Environmental Compliance Approval #6418-BN2NUC

Ontario

Ministry of the Environment, Conservation and Parks
Ministère de l'Environnement, de la Protection de la nature et des Parcs

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 6418-BN2NUC
Issue Date: April 30, 2020

The Corporation of the Township of Cramahe
1 Toronto St
Post Office Box, No. 357
Cramahe, Ontario
K0K 1S0

Site Location: 1108 Ontario Street
Township of Cramahe, Ontario
K0K 1S0

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:

alteration, usage and operation of existing municipal sewage works, for the treatment of sanitary sewage and disposal of effluent to Lake Ontario via a Sewage Treatment Plant (Colborne Wastewater Treatment Plant) and Final Effluent disposal facilities as follows:

Classification of Collection System: Separate Sanitary Sewer System

Classification of Sewage Treatment Plant: Secondary Equivalent

Design Capacity of Sewage Treatment Plant

Design Capacity with All Treatment Trains in Operation	Existing Works
Rated Capacity	1,750 m^3/d

Influent and Imported Sewage

Receiving Location	Types
In Collection System	Sanitary
At Sewage Treatment Plant	Septage/Holding Tank Waste

Colborne Wastewater Treatment Plant:

Influent Sewers

- sanitary sewer on Ontario Street from approximately 230 m South of King Street and Sewage Treatment Plant access road to the influent chamber discharging to comminutator
- emergency peak flow diversion weir and 450 mm diameter diversion sewer to peak flow attenuation pond;

Peak Flow Attenuation Pond

- one (1) 15,000 m^3 peak flow attenuation pond for overflow of raw sewage, secondary treatment effluent and biosolids storage tank, with outlet sewer returning to the inlet chamber;

Sanitary Sewage Pumping Station

- one (1) comminutor;
- two (2) submersible pumps (one standby) each rated at 60.4 L/s at 8.3 m TDH;

Preliminary Treatment System

- one (1) manual bar screen;
- two (2) grit channels;
- one(1) Parshall Flume

Secondary Treatment Systems

Biological Treatment

- Influent channel with three inlet ports to the aeration tank
- one(1) 25 m X 8.5 m X 4.3 SWD aeration tank equipped with fine bubble aeration system;
- two (2) air blowers (one standby), each rated at 38 m^3/min at 55 kPa;

Secondary Sedimentation

- one(1) 25 m X 6.1 m X 4.8 m SWD secondary clarifier euipped with sludge and scum removal

mechanisms;

- a sludge hopper equipped with two (2) return/waste activated sludge pumps (one standby), each rated at 20.3 L/s at 9.4 m TDH;

- a scum tank equipped with one (1) scum pump rated at 5.0 L/s at 4.2 m TDH;

Supplementary Treatment Systems

Phosphorus Removal

- one(1) 28,000 L capacity phosphorus removal chemical storage tanks and two (2) metering pumps (one standby) each rated 60 L/h at 1034 kPa;

Disinfection System and effluent pumping

- one (1) 7,700 L sodium hypochlorite storage tank and two (2) metering pumps (one standby), each rated at 80 L/h at 400 kPa and paced with the effluent flow, with a feed line for injection into a 1.3 km effluent forcemain;

- one (1) 77 m^3 wet-well equipped with two (2) pumps (one standby), each rated at 60.4 L/s at 18.6 m TDH of 18.6 m;

- 1,000 m section of the effluent forcemain downstream of effluent pumping station serving as chlorine contact zone;

Final Effluent Flow Measurement, Dechorination and Sampling Point

- 350 mm diameter electromagnetic flowmeter located on County Road 31, approximately 1.3 km downstream of the WWTP

- one (1) 200 L sodium bisulphite storage tank and two (2) metering pumps (one standby), each rated at 80 L/h at 400 kPa and paced with the effluent flow located in dechlorination building on County Road 31, with a feed line for injection into the effluent forcemain;

- 350 mm effluent forcemain from dechlorination building to an outfall discharging to Lake Ontario through a diffuser approximately 150 m from shore

Biosolids Storage

- one (1) 4,000 m^3 biosolids storage pond;

including all other mechanical system, electrical system, instrumentation and control system, standby power system, piping, pumps, valves and appurtenances essential for the proper, safe and reliable operation of the Works in accordance with this Approval, in the context of process performance and general principles of

wastewater engineering only;

all in accordance with the submitted supporting documents listed in Schedule A.

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

1. "Annual Average Effluent Concentration" is the mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar year, calculated and reported as per the methodology specified in Schedule F;

2. "Annual Average Daily Effluent Flow" means the cumulative total Final Effluent discharged during a calendar year divided by the number of days during which Final Effluent was discharged that year;

3. "Approval" means this environmental compliance approval and any schedules attached to it, and the application;

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

5. "Bypass" means diversion of sewage around one or more treatment processes, excluding Preliminary Treatment System, 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 point(s) and discharged via the approved effluent disposal facilities;

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

7. "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;

8. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Works is geographically located;

9. "*E. coli* " refers to coliform bacteria that possess the enzyme beta-glucuronidase and are capable of cleaving a fluorogenic or chromogenic substrate with the corresponding release of a fluorogen or chromogen, that produces fluorescence under long wavelength (366 nm) UV light, or color development, respectively. Enumeration methods include tube, membrane filter, or multi-well procedures. Depending on the method selected, incubation temperatures include 35.5 $\pm$ 0.5 °C or 44.5 $\pm$ 0.2 °C (to enumerate thermotolerant species). Depending on the procedure used, data are reported as either colony forming units (CFU) per 100 mL (for membrane filtration methods) or as most probable number (MPN) per 100 mL (for tube or multi-well methods);

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

11. "Equivalent Equipment" means alternate piece(s) of equipment that meets the design requirements and

performance specifications of the piece(s) of equipment to be substituted;

12. "Event" means an action or occurrence, at a given location within the Works that causes a Bypass or Overflow. An Event ends when there is no recurrence of Bypass or Overflow in the 12-hour period following the last Bypass or Overflow. Overflows and Bypasses are separate Events even when they occur concurrently;

13. "Existing Works" means those portions of the Works included in the Approval that have been constructed previously;

14. "Final Effluent" means effluent that is discharged to the environment through the approved effluent disposal facilities, including all Bypasses, that are required to meet the compliance limits stipulated in the Approval for the Sewage Treatment Plant at the Final Effluent sampling point(s);

15. "Imported Sewage" means sewage hauled to the Sewage Treatment Plant by licensed waste management system operators of the types and quantities approved for co-treatment in the Sewage Treatment Plant, including hauled sewage and leachate within the meaning of R.R.O. 1990, Regulation 347: General – Waste Management, as amended;

16. "Influent" means flows to the Sewage Treatment Plant from the collection system and Imported Sewage but excluding process return flows.

17. "Limited Operational Flexibility" (LOF) means the conditions that the Owner shall follow in order to undertake any modification that is pre-authorized as part of this Approval;

18. "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;

19. "Monthly Average Effluent Concentration" is the mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month, calculated and reported as per the methodology specified in Schedule F;

20. "Monthly Average Daily Effluent Flow" means the cumulative total Final Effluent discharged during a calendar month divided by the number of days during which Final Effluent was discharged that month;

21. "Monthly Average Daily Effluent Loading" means the value obtained by multiplying the Monthly Average Effluent Concentration of a contaminant by the Monthly Average Daily Effluent Flow over the same calendar month;

22. "Monthly Geometric Mean Density" is the mean of all Single Sample Results of *E. coli* measurement in the samples taken during a calendar month, calculated and reported as per the methodology specified in Schedule F;

23. "Normal Operating Condition" means the condition when all unit process(es), excluding Preliminary Treatment System, in a treatment train is operating within its design capacity;

24. "Operating Agency" means the Owner or the entity that is authorized by the Owner for the management, operation, maintenance, or alteration of the Works in accordance with this Approval;

25. "Overflow" means a discharge to the environment from the Works at designed location(s) other than the approved effluent disposal facilities or via the effluent disposal facilities downstream of the Final Effluent sampling point;

26. "Owner" means The Corporation of the Township of Cramahe and its successors and assignees;

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

28. "Preliminary Treatment System" means all facilities in the Sewage Treatment Plant associated with screening and grit removal;

29. "Professional Engineer" means a person entitled to practice as a Professional Engineer in the Province of Ontario under a license issued under the Professional Engineers Act;

30. "Proposed Works" means those portions of the Works included in the Approval that are under construction or to be constructed;

31. "Rated Capacity" means the Annual Average Daily Influent Flow for which the Sewage Treatment Plant is designed to handle;

32. "Sanitary Sewers" means pipes that collect and convey wastewater from residential, commercial, institutional and industrial buildings, and some infiltration and inflow from extraneous sources such as groundwater and surface runoff through means other than stormwater catch basins;

33. "Separate Sewer Systems" means wastewater collection systems that comprised of Sanitary Sewers while runoff from precipitation and snowmelt are separately collected in Storm Sewers;

34. "Sewage Treatment Plant" means all the facilities related to sewage treatment within the sewage treatment plant site excluding the Final Effluent disposal facilities;

35. "Single Sample Result" means the test result of a parameter in the effluent discharged on any day, as measured by a probe, analyzer or in a composite or grab sample, as required;

36. "Storm Sewers" means pipes that collect and convey runoff resulting from precipitation and snowmelt (including infiltration and inflow); (use only for Separate or Nominally Sewer Systems)

37. "Works" means the approved sewage works, and includes Existing 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 terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

2. The Owner shall design, construct, operate and maintain the Works in accordance with the conditions of this Approval.

3. Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence.

2. CHANGE OF OWNER AND OPERATING AGENCY

1. The Owner shall, within thirty (30) calendar days of issuance of this Approval, prepare/update and submit to the District Manager the Municipal and Local Services Board Wastewater System Profile Information Form, as amended (Schedule G) under any of the following situations:

    a. the form has not been previously submitted for the Works;

    b. this Approval is issued for extension, re-rating or process treatment upgrade of the Works;

    c. when a notification is provided to the District Manager in compliance with requirements of change of Owner or Operating Agency under this condition.

2. 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 address of Owner;

    b. change of Owner, including address of new 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. B.17* , as amended, shall be included in the notification;

    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. C.39* , as amended, shall be included in the notification.

3. The Owner shall notify the District Manager, in writing, of any of the following changes within thirty (30) days of the change occurring:

a. change of address of Operating Agency;

b. change of Operating Agency, including address of new Operating Agency.

4. In the event of any change in ownership of the Works, the Owner shall notify the succeeding owner in writing, of the existence of this Approval, and forward a copy of the notice to the District Manager.

5. The Owner shall ensure that all communications made pursuant to this condition refer to the environmental compliance approval number.

3. RECORD DRAWINGS

1. A set of record drawings of the Works shall be kept up to date through revisions undertaken from time to time and a copy shall be readily accessible for reference at the Works.

4. BYPASSES

1. Any Bypass is prohibited, except:

   a. an emergency Bypass when a structural, mechanical or electrical failure causes a temporary reduction in the capacity of a treatment process or when an unforeseen flow condition exceeds the design capacity of a treatment process that is likely to result in personal injury, loss of life, health hazard, basement flooding, severe property damage, equipment damage or treatment process upset, if a portion of the flow is not bypassed;

   b. a planned Bypass that is a direct and unavoidable result of a planned repair and maintenance procedure or other circumstance(s), the Owner having notified the District Manager in writing at least fifteen (15) days prior to the occurrence of Bypass, including an estimated quantity and duration of the Bypass, an assessment of the impact on the quality of the Final Effluent and the mitigation measures if necessary, and the District Manager has given written consent of the Bypass;

2. Notwithstanding the exceptions given in Paragraph 1, the Operating Agency shall undertake everything practicable to maximize the flow through the downstream treatment process(es) prior to bypassing.

3. At the beginning of a Bypass Event, the Owner shall immediately notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information:

   a. the type of the Bypass as indicated in Paragraph 1 and the reason(s) for the Bypass;

   b. the date and time of the beginning of the Bypass;

   c. the treatment process(es) gone through prior to the Bypass and the treatment process(es) bypassed;

   d. the effort(s) done to maximize the flow through the downstream treatment process(es) and the

reason(s) why the Bypass was not avoided.

4. Upon confirmation of the end of a Bypass Event, the Owner shall immediately notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information:

   a. the date and time of the end of the Bypass;

   b. the estimated or measured volume of Bypass.

5. For any Bypass Event, the Owner shall collect daily sample(s) of the Final Effluent, inclusive of the Event and analyze for all effluent parameters outlined in Compliance Limits condition that require composite samples, following the same protocol specified in the Monitoring and Recording condition for the regular samples. The sample(s) shall be in addition to the regular Final Effluent samples required under the monitoring and recording condition. If the Event occurs on a scheduled monitoring day, the regular sampling requirements prevail. If representative sample for the effluent parameter(s) that require grab sample cannot be obtained, they shall be collected after the Event at the earliest time when situation returns to normal.

6. The Owner shall submit a summary report of the Bypass Event(s) to the District Manager on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15. The summary reports shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5) and either a statement of compliance or a summary of the non-compliance notifications submitted as required under Paragraph 1 of Condition 11. If there is no Bypass Event during a quarter, a statement of no occurrence of Bypass is deemed sufficient.

7. The Owner shall develop a notification procedure in consultation with the District Manager and SAC and notify the public and downstream water users that may be adversely impacted by any Bypass Event.

5. OVERFLOWS

1. Any Overflow is prohibited, except:

   a. an emergency Overflow in an emergency situation when a structural, mechanical or electrical failure causes a temporary reduction in the capacity of the Works or when an unforeseen flow condition exceeds the design capacity of the Works that is likely to result in personal injury, loss of life, health hazard, basement flooding, severe property damage, equipment damage or treatment process upset, if a portion of the flow is not overflowed;

   b. a planned Overflow that is a direct and unavoidable result of a planned repair and maintenance procedure or other circumstance(s), the Owner having notified the District Manager in writing at least fifteen (15) days prior to the occurrence of Overflow, including an estimated quantity and duration of the Overflow, an assessment of the impact on the environment and the mitigation measures if necessary, and the District Manager has given written consent of the Overflow;

2. Notwithstanding the exceptions given in Paragraph 1, the Operating Agency shall undertake everything

practicable to maximize the flow through the downstream treatment process(es) and Bypass(es) prior to overflowing.

3. At the beginning of an Overflow Event, the Owner shall immediately notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information:

   a. the type of the Overflow as indicated in Paragraph 1 and the reason(s) for the Overflow;

   b. the date and time of the beginning of the Overflow;

   c. the point of the Overflow from the Works, the treatment process(es) gone through prior to the Overflow, the disinfection status of the Overflow and whether the Overflow is discharged through the effluent disposal facilities or an alternate location;

   d. the effort(s) done to maximize the flow through the downstream treatment process(es) and Bypass(es) and the reason(s) why the Overflow was not avoided.

4. Upon confirmation of the end of an Overflow Event, the Owner shall immediately notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information:

   a. the date and time of the end of the Overflow;

   b. the estimated or measured volume of the Overflow.

5. For any Overflow Event

   a. in the Sewage Treatment Plant, the Owner shall collect grab sample(s) of the Overflow, one near the beginning of the Event and one every eight (8) hours for the duration of the Event, and have them analyzed at least for CBOD5, total suspended solids, total phosphorus, total ammonia nitrogen, total Kjeldahl nitrogen, *E.coli* except that raw sewage and primary treated effluent Overflow shall be analyzed for BOD5, total suspended solids, total phosphorus and total Kjeldahl nitrogen only.

   b. at a sewage pumping station in the collection system, the Owner shall collect at least one (1) grab sample representative of the Overflow Event and have it analyzed for BOD5, total suspended solids, total phosphorus and total Kjeldahl nitrogen.

6. The Owner shall submit a summary report of the Overflow Event(s) to the District Manager on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15. The summary report shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5). If there is no Overflow Event during a quarter, a statement of no occurrence of Overflow is deemed sufficient.

7. The Owner shall develop a notification procedure in consultation with the District Manager and SAC and notify the public and downstream water users that may be adversely impacted by any Overflow

Event.

6. DESIGN OBJECTIVES

1. The Owner shall design and undertake everything practicable to operate the Sewage Treatment Plant in accordance with the following objectives:

   a. Final Effluent parameters design objectives listed in the table(s) included in Schedule B.

   b. Final Effluent 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.

   c. Total Residual Chlorine (TRC) in the Final Effluent shall be non-detectable as measured by a method with a sensitivity of at least 0.02 mg/L. Normal operation of de-chlorination equipment should provide for an excess of reagents to ensure that total chlorine residuals are not detected.

   d. Annual Average Daily Influent Flow is within the Rated Capacity of the Sewage Treatment Plant.

7. COMPLIANCE LIMITS

1. The Owner shall operate and maintain the Sewage Treatment Plant such that compliance limits for the Final Effluent parameters listed in the table(s) included in Schedule C are met.

8. OPERATION AND MAINTENANCE

1. The Owner shall ensure 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 staffing and training, including training in all procedures and other requirements of this Approval and the OWRA 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 update maintain the operations manual for the Works within six (6) months of completion of construction of the Proposed Works, that includes, but not necessarily limited to, the following information:

   a. operating procedures for the Works under Normal Operating Conditions;

   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. operating procedures for the Works to handle situations outside Normal Operating Conditions and emergency situations such as a structural, mechanical or electrical failure, or an unforeseen flow condition, including procedures to minimize Bypasses and Overflows;

f. a spill prevention and contingency plan, consisting of procedures and contingency plans, including notification to the District Manager, to reduce the risk of spills of pollutants and prevent, eliminate or ameliorate any adverse effects that result or may result from spills of pollutants;

g. procedures for receiving, responding and recording public complaints, including recording any followup actions taken.

3. The Owner shall maintain the operations manual up-to-date and make the manual readily accessible for reference at the Works.

4. The Owner shall ensure that the Operating Agency fulfills the requirements under O. Reg. 129/04, as amended for the Works, including the classification of facilities, licensing of operators and operating standards.

9. MONITORING AND RECORDING

1. The Owner shall, upon commencement of operation of the Works, carry out a scheduled monitoring program of collecting samples at the required sampling points, at the frequency specified or higher, by means of the specified sample type and analyzed for each parameter listed in the tables under the monitoring program included in Schedule D and record all results, as follows:

   a. all samples and measurements are to be taken at a time and in a location characteristic of the quality and quantity of the sewage stream over the time period being monitored.

   b. definitions and preparation requirements for each sample type are included in document referenced in Paragraph 3.b.

   c. definitions for frequency:

      i. Daily means once every day;

      ii. Weekly means once every week;

      iii. Monthly means once every month;

      iv. Quarterly means once every three months;

   d. a schedule of the day of the week/month for the scheduled sampling shall be created. The sampling schedule shall be revised and updated every year through rotation of the day of the week/month for the scheduled sampling program, except when the actual scheduled monitoring frequency is three (3) or more times per week.

2. In addition to the scheduled monitoring program required in Paragraph 1, the Owner shall collect daily sample(s) of the Final Effluent, on any day when there is any situation outside Normal Operating Conditions, and analyze for all effluent parameters outlined in Compliance Limits condition that require composite samples, following the same protocol specified in this condition for the regular samples. If the Event occurs on a scheduled monitoring day, the regular sampling requirements prevail. If representative sample for the effluent parameter(s) that require grab sample cannot be obtained, they shall be collected after the Event at the earliest time when situation returns to normal.

3. The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following documents and all analysis shall be conducted by a laboratory accredited to the ISO/IEC:17025 standard or as directed by the District Manager:

    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;

    b. the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January 2016), PIBS 2724e02, as amended;

    c. the publication "Standard Methods for the Examination of Water and Wastewater", as amended.

    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, subject to the following:

        i. the use of pH stabilization in the determination of acute lethality of Final Effluent to Rainbow Trout in accordance with the Environment Canada publication "Procedure for pH Stabilization during the Testing of Acute Lethality of Wastewater Effluent to Rainbow Trout (EPS 1/RM/50)" (2008), as amended, is permitted only if:

            a. all the three criteria stipulated in the Environment Canada EPS 1/RM/50 are met; and

            b. the Final Effluent is not discharged to a receiver in which the Final Effluent contributes more than 50% of the total flow in the receiving water, unless the District Manager, having reviewed additional information submitted regarding the Final Effluent and the receiving water approves on the use of RM50 on a site-specific basis.

4. If the Owner monitors Bisulphite Residual as a surrogate to Total Residual Chlorine, then detected levels of Bisulphite Residual in the sample shall be deemed to confirm absence of Total Residual Chlorine.

5. The minimum monitoring frequency with respect to acute lethality to Rainbow Trout and Daphnia magna shall, after eight (8) consecutive quarters of monitoring results not indicating acute lethality, be reduced to annually. If any Final Effluent sample indicates acute lethality to Rainbow Trout or Daphnia magna, the monitoring frequency shall revert back to quarterly and the Owner shall carry out the following immediately:

a. Review the following:

i. Final Effluent quality and confirm that concentrations of ammonia are within the limits;

ii. plant operations around the time of the toxicity event; and

iii. all data available regarding plant operations and Final Effluent quality.

b. If the observed effluent toxicity is not associated with ammonia, an investigation shall be undertaken to determine the cause or source of the toxicity.

c. Upon determination of cause or source of acute lethality to Rainbow Trout and Daphnia magna, the Owner shall determine appropriate control measures to achieve non-acutely lethal effluent and time lines for the implementation of identified control measures. The Owner shall submit the proposed control measures and implementation time lines for approval to the District Manager.

6. The Owner shall monitor and record the flow rate and daily quantity using flow measuring devices or other methods of measurement as approved below calibrated to an accuracy within plus or minus 15 per cent (+/- 15%) of the actual flowrate of the following:

a. Final Effluent discharged from the Sewage Treatment Plant by continuous flow measuring devices and instrumentations/pumping rates/details of other methods (e.g. level of lagoons), or in lieu of an actual installation of equipment, adopt the flow measurements of the Influent for the purpose of estimating Final Effluent flows if the Influent and Final Effluent streams are considered not significantly different in flow rates and quantities;

b. each type of Imported Sewage received for co-treatment at the Sewage Treatment Plant by flow measuring devices/pumping rates/haul truck manifests;

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.

10. LIMITED OPERATIONAL FLEXIBILITY

1. The Owner may make pre-authorized modifications to the sewage pumping stations and Sewage Treatment Plant in Works in accordance with the document "Limited Operational Flexibility - Protocol for Pre-Authorized Modifications to Municipal Sewage Works" (Schedule E), as amended, subject to the following:

a. the modifications will not involve the addition of any new treatment process or the removal of an existing treatment process, including chemical systems, from the liquid or solids treatment trains as originally designed and approved.

b. the scope and technical aspects of the modifications are in line with those delineated in Schedule E

and conform with the Ministry's publication "Design Guidelines for Sewage Works 2008", as amended, Ministry's regulations, policies, guidelines, and industry engineering standards;

c. the modifications shall not negatively impact on the performance of any process or equipment in the Works or result in deterioration in the Final Effluent quality;

d. where the pre-authorized modification requires notification, a "Notice of Modifications to Sewage Works" (Schedule E), as amended shall be completed with declarations from a Professional Engineer and the Owner and retained on-site prior to the scheduled implementation date. All supporting information including technical memorandum, engineering plans and specifications, as applicable and appropriate to support the declarations that the modifications conform with LOF shall remain on-site for future inspection.

2. The following modifications are not pre-authorized under Limited Operational Flexibility:

a. Modifications that involve addition or extension of process structures, tankages or channels;

b. Modifications that involve relocation of the Final Effluent outfall or any other discharge location or that may require reassessment of the impact to the receiver or environment;

c. Modifications that involve addition of or change in technology of a treatment process or that may involve reassessment of the treatment train process design;

d. Modifications that require changes to be made to the emergency response, spill prevention and contingency plan; or

e. Modifications that are required pursuant to an order issued by the Ministry.

11. REPORTING

1. The Owner shall report to the District Manager orally as soon as possible any non-compliance with the compliance limits, and in writing within seven (7) days of non-compliance.

2. The Owner shall, within fifteen (15) days of occurrence of a spill within the meaning of Part X of the EPA, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation, in addition to fulfilling the requirements under the EPA and O. Reg. 675/98 "Classification and Exemption of Spills and Reporting of Discharges".

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

4. The Owner shall prepare performance reports on a calendar year basis and submit to the District Manager by March 31 of the calendar year following the period being reported upon. The reports shall contain, but shall not be limited to, the following information pertaining to the reporting period:

a. a summary and interpretation of all Influent, Imported Sewage monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;

b. a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

c. a summary of all operating issues encountered and corrective actions taken;

d. a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

e. a summary of any effluent quality assurance or control measures undertaken;

f. a summary of the calibration and maintenance carried out on all Influent, Imported Sewage and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;

g. a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

    i. when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;

    ii. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

h. a tabulation of the volume of sludge generated, 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;

i. a summary of any complaints received and any steps taken to address the complaints;

j. a summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;

k. a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.

l. a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted.

m. a summary of any deviation from the monitoring schedule and reasons for the current reporting year

and a schedule for the next reporting year;

Schedule A

1. Application for Environmental Compliance Approval submitted by Mr. Max Christie, P.Eng. of XIE Environmental received on December 4, 2019 for administrative changes to the ECA.

Schedule B

Final Effluent Design Objectives

Concentration Objectives

Final Effluent Parameter	**Averaging Calculator**	**Objective** (milligrams per litre unless otherwise indicated)
CBOD5	Monthly Average Effluent Concentration	15 mg/L
Total Suspended Solids	Monthly Average Effluent Concentration	15 mg/L
Total Phosphorus	Monthly Average Effluent Concentration	0.4 mg/L
Total Ammonia Nitrogen	Monthly Average Effluent Concentration	2.0 mg/L (May 1 to Oct 31) 4.0 mg/L (Nov 1 to Apr 30)
E. coli	Monthly Geometric Mean Density	*150 CFU/100 mL
pH	Single Sample Result	6.5 - 8.5 inclusive
Total Residual Chlorine**	Single Sample Result	Non-detectable

*If the MPN method is utilized for *E. coli* analysis the objective shall be 150 MPN/100 mL

**Total Residual Chlorine shall be non-detectable as measured by a method with a sensitivity of at least 0.02 mg/L

Schedule C

Final Effluent Compliance Limits

Concentration Limits

Final Effluent Parameter	Averaging Calculator	Limit (maximum unless otherwise indicated)
CBOD5	Monthly Average Effluent Concentration	25 mg/L
Total Suspended Solids	Monthly Average Effluent Concentration	25 mg/L
Total Phosphorus	Monthly Average Effluent Concentration	0.7 mg/L
Total Ammonia Nitrogen	Monthly Average Effluent Concentration	4.0 mg/L (May 1 to Oct 31) 8.0 mg/L (Nov 1 to Apr 30)
E. coli	Monthly Geometric Mean Density	*200 CFU/100 mL
pH	Single Sample Result	between 6.0 - 9.5 inclusive
Total Chlorine Residual	Single Sample Result	0.02

*If the MPN method is utilized for *E. coli* analysis the limit shall be 200 MPN/100 mL

**If continuous analyzer is used for monitoring of Total Residual Chlorine, reading shall be recorded at a minimum frequency of every 5 minutes and any record is not to exceed 0.1 mg/L and any two-hour moving average is not to exceed 0.02 mg/L

Loading Limits

Final Effluent Parameter	Averaging Calculator	Limit (maximum unless otherwise indicated)
CBOD5	Monthly Average Daily Effluent Loading	43.8 kg/d
Total Suspended Solids	Monthly Average Daily Effluent Loading	43.8 kg/d
Total Phosphorus	Monthly Average Daily Effluent Loading	1.2 kg/d

Schedule D

Monitoring Program

Influent - Influent sampling point Inlet Works

Parameters	Sample Type	Minimum Frequency
BOD5	8 hour composite	Monthly
Total Suspended Solids	8 hour composite	Monthly
Total Phosphorus	8 hour composite	Monthly
Total Kjeldahl Nitrogen	8 hour composite	Monthly

Imported Sewage - Imported Sewage Receiving Station

Parameters	Sample Type	Minimum Frequency
BOD5	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorus	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly

Schedule D

Monitoring Program

Final Effluent - Final Effluent sampling point

Parameters	Sample Type	Minimum Frequency
CBOD5	8 hour composite	Weekly
Total Suspended Solids	8 hour composite	Weekly
Total Phosphorus	8 hour composite	Weekly
Total Ammonia Nitrogen	8 hour composite	Weekly
Total Residual Chlorine	Grab	Weekly
E. coli	Grab	Weekly
Acute Lethality to Rainbow Trout and Daphnia magna	Grab	Quarterly
pH*	Grab	Weekly
Temperature*	Grab	Weekly

*pH and temperature of the Final Effluent 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.

Schedule E

Limited Operational Flexibility

Protocol for Pre-Authorized Modifications to Municipal Sewage Works

1. General

1. Pre-authorized modifications are permitted only where Limited Operational Flexibility has already been granted in the Approval and only permitted to be made at the pumping stations and sewage treatment plant in the Works, subject to the conditions of the Approval.

2. Where there is a conflict between the types and scope of pre-authorized modifications listed in this document, and the Approval where Limited Operational Flexibility has been granted, the Approval shall take precedence.

3. The Owner shall consult the District Manager on any proposed modifications that may fall within the scope and intention of the Limited Operational Flexibility but is not listed explicitly or included as an example in this document.

4. The Owner shall ensure that any pre-authorized modifications will not:

    a. adversely affect the hydraulic profile of the Sewage Treatment Plant or the performance of any upstream or downstream processes, both in terms of hydraulics and treatment performance;

    b. result in new Overflow or Bypass locations, or any potential increase in frequency or quantity of Overflow(s) or Bypass(es).

    c. result in a reduction in the required Peak Flow Rate of the treatment process or equipment as originally designed.

2. Modifications that do not require pre-authorization:

1. Sewage works that are exempt from Ministry approval requirements;

2. Modifications to the electrical system, instrumentation and control system.

3. Pre-authorized modifications that do not require preparation of "Notice of Modification to Sewage Works"

1. Normal or emergency maintenance activities, such as repairs, renovations, refurbishments and replacements with Equivalent Equipment, or other improvements to an existing approved piece of equipment of a treatment process do not require pre-authorization. Examples of these activities are:

    a. Repairing a piece of equipment and putting it back into operation, including replacement of minor

components such as belts, gear boxes, seals, bearings;

b. Repairing a piece of equipment by replacing a major component of the equipment such as motor, with the same make and model or another with the same or very close power rating but the capacity of the pump or blower will still be essentially the same as originally designed and approved;

c. Replacing the entire piece of equipment with Equivalent Equipment.

2. Improvements to equipment efficiency or treatment process control do not require pre-authorization. Examples of these activities are:

a. Adding variable frequency drive to pumps;

b. Adding on-line analyzer, dissolved oxygen probe, ORP probe, flow measurement or other process control device.

4. Pre-Authorized Modifications that require preparation of "Notice of Modification to Sewage Works"

1. Pumping Stations

a. Replacement, realignment of existing sewers including manholes, valves, gates, weirs and associated appurtenances provided that the modifications will not add new influent source(s) or result in an increase in flow from existing sources as originally approved.

b. Extension or partition of wetwell to increase retention time for emergency response and improve station maintenance and pump operation;

c. Replacement or installation of inlet screens to the wetwell;

d. Replacement or installation of flowmeters, construction of station bypass;

e. Replacement, reconfiguration or addition of pumps and modifications to pump suctions and discharge pipings including valve, gates, motors, variable frequency drives and associated appurtenances to maintain firm pumping capacity or modulate the pump rate provided that the modifications will not result in a reduction in the firm pumping capacity or discharge head or an increase in the peak pumping rate of the pumping station as originally designed;

f. Replacement, realignment of existing forcemain(s) including valves, gates, and associated appurtenances provided that the modifications will not reduce the flow capacity or increase the total dynamic head and transient in the forcemain.

2. Sewage Treatment Plant

1. Sewers and appurtenances

a. Replacement, realignment of existing sewers (including pipes and channels) or construction of new

sewers, including manholes, valves, gates, weirs and associated appurtenances within the a sewage treatment plant, provided that the modifications will not add new influent source(s) or result in an increase in flow from existing sources as originally approved and that the modifications will remove hydraulic bottlenecks or improve the conveyance of sewage into and through the Works.

2. Flow Distribution Chambers/Splitters

    a. Replacement or modification of existing flow distribution chamber/splitters or construction of new flow distribution chamber/splitters, including replacements or installation of sluice gates, weirs, valves for distribution of flows to the downstream process trains, provided that the modifications will not result in a change in flow distribution ratio to the downstream process trains as originally designed.

3. Imported Sewage Receiving Facility

    a. Replacement, relocation or installation of loading bays, connect/disconnect hook-up systems and unloading/transferring systems;

    b. Replacement, relocation or installation of screens, grit removal units and compactors;

    c. Replacement, relocation or installation of pumps, such as dosing pumps and transfer pumps, valves, piping and appurtenances;

    d. Replacement, relocation or installation of storage tanks/chambers and spill containment systems;

    e. Replacement, relocation or installation of flow measurement and sampling equipment;

    f. Changes to the source(s) or quantity from each source, provided that changes will not result in an increase in the total quantity and waste loading of each type of Imported Sewage already approved for co-treatment.

4. Preliminary Treatment System

    a. Replacement of existing screens and grit removal units with equipment of the same or higher process performance technology, including where necessary replacement or upgrading of existing screenings dewatering washing compactors, hydrocyclones, grit classifiers, grit pumps, air blowers conveyor system, disposal bins and other ancillary equipment to the screening and grit removal processes.

    b. Replacement or installation of channel aeration systems, including air blowers, air supply main, air headers, air laterals, air distribution grids and diffusers.

5. Primary Treatment System

    a. Replacement of existing sludge removal mechanism, including sludge chamber;

    b. Replacement or installation of scum removal mechanism, including scum chamber;

    c. Replacement or installation of primary sludge pumps, scum pumps, provided that:the modifications will not result in a reduction in the firm pumping capacity or discharge head that the primary sludge pump(s) and scum pump(s) are originally designed to handle.

6. Secondary Treatment System

    1. Biological Treatment

        a. Conversion of complete mix aeration tank to plug-flow multi-pass aeration tank, including modifications to internal structural configuration;

        b. Addition of inlet gates in multi-pass aeration tank for step-feed operation mode;

        c. Partitioning of an anoxic/flip zone in the inlet of the aeration tank, including installation of submersible mixer(s);

        d. Replacement of aeration system including air blowers, air supply main, air headers, air laterals, air distribution grids and diffusers, provided that the modifications will not result in a reduction in the firm capacity or discharge pressure that the blowers are originally designed to supply or in the net oxygen transferred to the wastewater required for biological treatment as originally required.

    2. Secondary Sedimentation

        a. Replacement of sludge removal mechanism, including sludge chamber;

        b. Replacement or installation of scum removal mechanism, including scum chamber;

        c. Replacement or installation of return activated sludge pump(s), waste activated sludge pump(s), scum pump(s), provided that the modifications will not result in a reduction in the firm pumping capacity or discharge head that the activated sludge pump(s) and scum pump(s) are originally designed to handle.

7. Post-Secondary Treatment System

    a. Replacement of filtration system with equipment of the same filtration technology, including feed pumps, backwash pumps, filter reject pumps, filtrate extract pumps, holding tanks associated with the pumping system, provided that the modifications will not result in a reduction in the capacity of the filtration system as originally designed.

8. Disinfection System

    1. UV Irradiation

        a. Replacement of UV irradiation system, provided that the modifications will not result in a reduction in the design capacity of the disinfection system or the radiation level as originally designed.

    2. Chlorination/Dechlorination and Ozonation Systems

        a. Extension and reconfiguration of contact tank to increase retention time for effective disinfection and reduce dead zones and minimize short-circuiting;

        b. Replacement or installation of chemical storage tanks, provided that the tanks are provided with effective spill containment.

9. Supplementary Treatment Systems

    1. Chemical systems

        a. Replacement, relocation or installation of chemical storage tanks for existing chemical systems only, provided that the tanks are sited with effective spill containment;

        b. Replacement or installation of chemical dosing pumps provided that the modifications will not result in a reduction in the firm capacity that the dosing pumps are originally designed to handle.

        c. Relocation and addition of chemical dosing point(s) including chemical feed pipes and valves and controls, to improve phosphorus removal efficiency;

        d. Use of an alternate chemical provided that it is a non-proprietary product and is a commonly used alternative to the chemical approved in the Works, provided that the chemical storage tanks, chemical dosing pumps, feed pipes and controls are also upgraded, as necessary..

10. Sludge Management System

    1. Sludge Holding and Thickening

        a. Replacement or installation of sludge holding tanks, sludge handling pumps, such as transfer pumps, feed pumps, recirculation pumps, provided that modifications will not result in reduction in the solids storage or handling capacities;

    2. Sludge Digestion

        a. Replacement or installation of digesters, sludge handling pumps, such as transfer pumps, feed pumps, recirculation pumps, provided that modifications will not result in reduction in the solids

storage or handling capacities;

b. replacement of sludge digester covers.

3. Sludge Dewatering and Disposal

a. Replacement of sludge dewatering equipment, sludge handling pumps, such as transfer pumps, feed pumps, cake pumps, loading pumps, provided that modifications will not result in reduction in solids storage or handling capacities.

4. Processed Organic Waste

a. Changes to the source(s) or quantity from each source, provided that changes will not result in an increase in the total quantity already approved for co-processing.

11. Standby Power System

1. Replacement or installation of standby power system, including feed from alternate power grid, emergency power generator, fuel supply and storage systems, provided that the existing standby power generation capacity is not reduced.

12. Pilot Study

1. Small side-stream pilot study for existing or new technologies, alternative treatment process or chemical, provided:

a. all effluent from the pilot system is hauled off-site for proper disposal or returned back to the sewage treatment plant for at a point no further than immediately downstream of the location from where the side-stream is drawn;

b. no proprietary treatment process or propriety chemical is involved in the pilot study;

c. the effluent from the pilot system returned to the sewage treatment plant does not significantly alter the composition/concentration of or add any new contaminant/inhibiting substances to the sewage to be treated in the downstream process;

d. the pilot study will not have any negative impacts on the operation of the sewage treatment plant or cause a deterioration of effluent quality;

e. the pilot study does not exceed a maximum of two years and a notification of completion shall be submitted to the District Manager within one month of completion of the pilot project.

13. Lagoons

a. installing baffles in lagoon provided that the operating capacity of the lagoon system is not reduced;

b. raise top elevation of lagoon berms to increase free-board;

c. replace or install interconnecting pipes and chambers between cells, provided that the process design operating sequence is not changed;

d. replace or install mechanical aerators, or replace mechanical aerators with diffused aeration system provided that the mixing and aeration capacity are not reduced;

e. removal of accumulated sludge and disposal to an approved location offsite.

3. Final Effluent Disposal Facilities

a. Replacement or realignment of the Final Effluent channel, sewer or forcemain, including manholes, valves and appurtenances from the end of the treatment train to the discharge outfall section, provided that the sewer conveys only effluent discharged from the Sewage Treatment Plant and that the replacement or re-aligned sewer has similar dimensions and performance criteria and is in the same or approximately the same location and that the hydraulic capacity will not be reduced.

This page contains an image of the form entitled "Notice of Modification to Sewage Works". A digital copy can be obtained from the District Manager.

Ontario

Ministry of the Environment, Conservation and Parks

Notice of Modification to Sewage Works

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA ON-SITE PRIOR TO THE SCHEDULED IMPLEMENTATION DATE.

Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility

(Insert the ECA's owner, number and issuance date and notice number, which should start with "01" and consecutive numbers thereafter)

ECA Number	Issuance Date (mm/dd/yy)	Notice number (if applicable)

ECA Owner	Municipality

Part 2: Description of the modifications as part of the Limited Operational Flexibility

(Attach a detailed description of the sewage works)

Description shall include:
1. 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.)
2. Confirmation that the anticipated environmental effects are negligible.
3. 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.)

Part 3 – Declaration by Professional Engineer

I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:
1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;
2. Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;
3. 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.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name (Print)	PEO License Number

Signature	Date (mm/dd/yy)

Name of Employer

Part 4 – Declaration by Owner

I hereby declare that:
1. I am authorized by the Owner to complete this Declaration;
2. The Owner consents to the modification; and
3. This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.
4. The Owner has fulfilled all applicable requirements of the *Environmental Assessment Act*.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name of Owner Representative (Print)	Owner representative's title (Print)

Owner Representative's Signature	Date (mm/dd/yy)

Schedule F

Methodology for Calculating and Reporting Monthly Average Effluent Concentration, Annual Average Effluent Concentration and Monthly Geometric Mean Density

1. Monthly Average Effluent Concentration

Step 1: Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month and proceed as follows depending on the result of the calculation:

a. If the arithmetic mean does not exceed the compliance limit for the contaminant, then report and use this arithmetic mean as the Monthly Average Effluent Concentration for this parameter where applicable in this Approval;

b. If the arithmetic mean exceeds the compliance limit for the contaminant and there was no Bypass Event during the calendar month, then report and use this arithmetic mean as the Monthly Average Effluent Concentration for this parameter where applicable in this Approval;

c. If the arithmetic mean exceeds the compliance limit for the contaminant and there was Bypass Event(s) during the calendar month, then proceed to Step 2;

d. If the arithmetic mean does not exceed the compliance limit for the contaminant and there was Bypass Event(s) during the calendar month, the Owner may still elect to proceed to Step 2 calculation of the flow-weighted arithmetic mean.

Step 2: Calculate the flow-weighted arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month and proceed depending on the result of the calculation:

a. Group No Bypass Days (**NBPD**) data and Bypass Days (**BPD**) data during a calendar month separately;

b. Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured on all NBPD during a calendar month and record it as **Monthly Average NBPD Effluent Concentration**;

c. Obtain the "**Total Monthly NBPD Flow**" which is the total amount of Final Effluent discharged on all NBPD during the calendar month;

d. Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured on all BPD during a calendar month and record it as **Monthly Average BPD Effluent Concentration**;

e. Obtain the "**Total Monthly BPD Flow**" which is the total amount of Final Effluent discharged on all BPD during the calendar month;

f. Calculate the flow-weighted arithmetic mean using the following formula:

[(Monthly Average NBPD Effluent Concentration × Total Monthly NBPD Flow) + (Monthly Average BPD Effluent Concentration × Total Monthly BPD Flow)] ÷ (Total Monthly NBPD Flow + Total Monthly BPD Flow)

It should be noted that in this method, if there are no Bypass Event for the month, the calculated result would be the same as the non-flow-weighted arithmetic mean method;

g. Report and use the lesser of the flow-weighted arithmetic mean obtained in Step 2 and the arithmetic mean obtained in Step 1 as the Monthly Average Effluent Concentration for this parameter where applicable in this Approval.

2. Annual Average Effluent Concentration

Step 1: Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar year and proceed as follows depending on the result of the calculation:

a. If the arithmetic mean does not exceed the compliance limit for the contaminant, then report and use this arithmetic mean as the Annual Average Effluent Concentration for this parameter where applicable in this Approval;

b. If the arithmetic mean exceeds the compliance limit for the contaminant and there was no Bypass Event during the calendar year, then report and use this arithmetic mean as the Annual Average Effluent Concentration for this parameter where applicable in this Approval;

c. If the arithmetic mean exceeds the compliance limit for the contaminant and there was Bypass Event(s) during the calendar year, then proceed to Step 2;

d. If the arithmetic mean does not exceed the compliance limit for the contaminant and there was Bypass Event(s) during the calendar year, the Owner may still elect to proceed to Step 2 calculation of the flow-weighted arithmetic mean.

Step 2: Calculate the flow-weighted arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar year and proceed depending on the result of the calculation:

a. Group No Bypass Days (**NBPD**) data and Bypass Days (**BPD**) data during a calendar year separately;

b. Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured on all NBPD during a calendar year

and record it as **Annual Average NBPD Effluent Concentration**;

c. Obtain the "**Total Annual NBPD Flow**" which is the total amount of Final Effluent discharged on all NBPD during the calendar year;

d. Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured on all BPD during a calendar year and record it as **Annual Average BPD Effluent Concentration**;

e. Obtain the "**Total Annual BPD Flow**" which is the total amount of Final Effluent discharged on all BPD during the calendar year;

f. Calculate the flow-weighted arithmetic mean using the following formula:

[(Annual Average NBPD Effluent Concentration × Total Annual NBPD Flow) + (Annual Average BPD Effluent Concentration × Total Annual BPD Flow)] ÷ (Total Annual NBPD Flow + Total Annual BPD Flow)

It should be noted that in this method, if there are no Bypass Event for the calendar year, the calculated result would be the same as the non-flow-weighted arithmetic mean method;

g. Report and use the lesser of the flow-weighted arithmetic mean obtained in Step 2 and the arithmetic mean obtained in Step 1 as the Annual Average Effluent Concentration for this parameter where applicable in this Approval.

3. Monthly Geometric Mean Density

Geometric mean is defined as the n^{th} root of the product of n numbers. In the context of calculating Monthly Geometric Mean Density for *E. coli*, the following formula shall be used:

$$\sqrt[n]{x_1 x_2 x_3 \cdots x_n}$$

in which,

"n" is the number of samples collected during the calendar month; and

"x" is the value of each Single Sample Result.

For example, four weekly grab samples were collected and tested for *E. coli* during the calendar month. The *E. coli* densities in the Final Effluent were found below:

Sample Number	*E. coli* Densities* (CFU/100 mL)
1	10
2	100
3	300
4	50

The Geometric Mean Density for these data:

$$\sqrt[4]{10 \times 100 \times 300 \times 50} = 62$$

*If a particular result is zero (0), then a value of one (1) will be substituted into the calculation of the Monthly Geometric Mean Density. If the MPN method is utilized for E. coli analysis, values in the table shall be MPN/100 mL.

Schedule G

Municipal and Local Services Board Wastewater System
Profile Information Form

(For reference only, images of the form are attached on the next four pages. A digital copy can be obtained from the District Manger.)

Ontario

Ministry of the Environment, Conservation and Parks

Municipal and Local Services Board Wastewater System Profile Information Form

The information in this form is necessary to administer the Ministry's approvals, compliance and enforcement programs with respect to wastewater treatment and collection systems owned by municipalities and local services boards. These programs are authorized under the *Ontario Water Resources Act*, the *Environmental Protection Act*, the *Nutrient Management Act* and their respective regulations.

Email the completed form to: waterforms@ontario.ca
For any questions call 1-866-793-2588.

[A] SYSTEM PROFILE INFORMATION

Wastewater System Number *(if assigned)*

☐ New Profile
☐ Update Existing Profile

Name of System

Name of Municipality or Local Services Board

Level of Treatment (select one*)
☐ Primary
☐ Secondary
☐ Tertiary
☐ Secondary Equivalent
☐ Other (specify):
*See Terms and Concepts on page 4

Population Served	Population (Design)	Type of System
		☐ Treatment & Collection System ☐ Collection System Only

Design Rated Capacity (m^3/day)	Peak Flow Rate (m^3/day)	Current Environmental Compliance Approval (ECA) Number	Current ECA Issue Date (yyyy/mm/dd):

The treatment plant receives sewage from: (Check all that applies.* If you have checked more than one option below, indicate the approximate %)

☐ Sanitary Sewer ☐ Combined Sewer
☐ Nominally Separated Sewer ☐ Partially Separated Sewer *See Terms and Concepts on page 4

[B] OWNER INFORMATION

Legal Name of Municipality or Local Services Board

Unit No	Street No.	Street Name.	Street Type (St, Rd, etc)	Street Direction (N,S,E,W)

PO Box	City/Town	Postal Code

☐ Dr ☐ Miss ☐ Mr ☐ Mrs ☐ Ms	Owner Contact First Name	Owner Contact Last Name	Owner Contact Job Title

Tel. No.	Fax Number	Email address
( ) - ext.	( ) -	

[C] OPERATING AUTHORITY ☐ Check if same as owner

Legal Name of Operator

Unit No	Street No.	Street Name.	Street Type (St, Rd, etc)	Street Direction (N,S,E,W)

PO Box	City/Town	Postal Code

☐ Dr ☐ Miss ☐ Mr ☐ Mrs ☐ Ms	Operator Contact First Name	Operator Contact Last Name	Operator Contact Job Title

Tel. No.	Fax Number	Email address
( ) - ext.	( ) -	

[D] 24/7 CONTACT

☐ Dr ☐ Miss ☒ Mr ☐ Mrs ☐ Ms	First Name	Last Name	Job Title

Tel. No. ( ) - ext.	Fax Number ( ) -	Email address

[E] SYSTEM CIVIC LOCATION ADDRESS (I.E. ADDRESS OF TREATMENT PLANT)

Unit No	Street No.	Street Name.	Street Type (St, Rd, etc)	Street Direction (N,S,E,W)

PO Box	City/Town	Postal Code

If the Wastewater System has no street address

Geographical Township	Lot	Concession

Geographical Referencing (if known, enter the Geographical Reference Information for this Wastewater System)

Map Datum	Geo-Referencing Method	Accuracy Estimate	Location Reference	
Latitude	**Longitude**	**Zone**	**Easting**	**Northing**

[F] TREATMENT PROCESS

Preliminary	Primary	Secondary	Secondary Equivalent	Post-Secondary	Additional Treatment
☐ Screening	☐ Settling/sedimentation/ clarification	☐ Conventional Activated Sludge (CAS)	☐ Aerated Lagoon	☐ Filtration	☐ Phosphorous Removal ☐ Biological ☐ Chemical
☐ Shredding/ grinding	☐ Scum Removal	☐ Extended Aeration	☐ Facultative Lagoon	☐ Clarification	If chemical is used, specify:
☐ Grit Removal	☐ Polymer Addition	☐ Membrane Bioreactor (MBR)	☐ Anaerobic Lagoon	☐ Intermittent Sand Filter (after lagoons)	☐ Nitrification
☐ Other(specify):	☐ Other(specify):	☐ Sequencing Batch Reactor (SBR)	☐ Aerobic Lagoon	☐ Polishing Wetlands	☐ Denitrification
		☐ Rotating Biological Contactor (RBC)	☐ Other(specify):	☐ Polishing Lagoons	☐ Other(specify):
		☐ Trickling Filter (TF)		☐ Other(specify):	
		☐ Biological Aerated Filter (BAF)			
		☐ Other(specify):			

[G] DISINFECTION

Method of Disinfection	Disinfection Period
☐ Chlorination If you chlorinate, do you practice de-chlorination? ☐ Yes ☐ No	☐ Continuous ☐ Seasonal
☐ Ultraviolet Irradiation	☐ Continuous ☐ Seasonal
☐ Other (specify):	☐ Continuous ☐ Seasonal

[H] SLUDGE	
Sludge Stabilization Process	Method of Sludge Disposal/Utilization
☐ Aerobic Digestion	☐ Agricultural
☐ Anaerobic Digestion	☐ Landfill
☐ Drying & Pelletization	☐ Incineration
☐ Lime Treatment	☐ Other (specify):
☐ Composting	
☐ Other (specify):	

Available Sludge Storage Capacity (m^3):

[I] EFFLUENT	
Effluent Disposal Method	Effluent Discharge Frequency
☐ Surface Water Receiving Water Body Name:	☐ Continuous ☐ Seasonal
☐ Subsurface	☐ Continuous ☐ Seasonal
☐ Other (specify):	☐ Continuous ☐ Seasonal

Is the effluent discharged in a vulnerable area identified in the local source protection assessment report approved under the Clean Water Act, 2006?
☐ Yes ☐ No

[J] INFLUENT

Does the plant receive sewage from another municipality or local services board either through an interconnected collection system or hauled sewage?
☐ Yes ☐ No
(if yes, name(s) of other municipality or local services board):

Plant receives:
☐ Leachate (approximate annual volume in m^3):
☐ Septage (approximate annual volume in m^3):
☐ Industrial input (approximate annual volume in m^3):
or (approximate volume in %):

Terms and Concepts

The following Terms and Concepts are provided to assist you when completing Wastewater System Profile Information Form.

In order to determine the level of treatment that applies to the wastewater system, the effluent quality objectives that the wastewater treatment plant was designed to meet must be considered. The process based approach often used in the past has led to confusion and is open to interpretation due to recent developments and practices in the wastewater treatment industry. For example, a plant with a high rate filter (often referred to as a tertiary filter) after its secondary treatment was considered a tertiary treatment in the past since the filter was designed and operated to produce a tertiary quality effluent. However, secondary plants are now being constructed with these filters as a safeguard against any potential secondary clarifier performance degradation and not for the purpose of ensuring tertiary treatment performance. Also, new technologies have evolved that can produce tertiary quality effluent without having these high rate filters (e.g., membrane bioreactors). Lagoons were considered in the past as being capable of providing only secondary equivalent treatment. However, with add-on treatment after the lagoons (e.g. intermittent sand filters), many lagoon treatment systems are capable of producing secondary or tertiary quality effluent.

During the establishment of sewage works, site-specific effluent limits (including averaging periods) are provided by the Ministry's Regional Technical Support Section, considering the assimilative capacity of the receivers and the minimum treatment requirements provided in Procedure F-5-1. The designer of the sewage works then selects objective values that are acceptable to the Ministry and are less (i.e. more stringent) than the effluent limits , in order to provide an adequate safety factor based on the designer's confidence/experience with the technology chosen and other site-specific conditions. The sewage works are then designed (and operated) to meet these design objectives in a reliable and consistent manner. Therefore, the values that are to be used in the determination of the level of treatment that applies to the sewage works must be based on the design objectives, and not the effluent limits.

Two common parameters used in almost all sewage works designs and performance evaluations are $CBOD_5$ (carbonaceous biochemical oxygen demand) (BOD_5 – biochemical oxygen demand - for primary sewage works) and total suspended solids (TSS). Therefore, it is logical that the **objective values** of these two parameters are used to determine the level of treatment at the sewage works.

Level of Treatment:

Primary:
Wastewater treatment plants that have only settling/sedimentation (with or without chemical addition) and providing 30% and 50% or better reduction of BOD_5 and TSS respectively are considered primary plants (MOE Procedures F-5-1 and F-5-5).

Secondary:
Wastewater treatment plants that have biological processes (e.g. activated sludge process and its variations, fixed film processes) or physical-chemical processes producing an effluent quality of $CBOD_5$ and TSS of 15 mg/L or better are considered secondary plants (MOE Design Guidelines for Sewage Works, 2008).

Secondary Equivalent:
Wastewater treatment plants producing an effluent quality of $CBOD_5$ of 25 mg/L and TSS of 30 mg/L or better are considered as secondary equivalent plants.

Note: Wastewater treatment plants that provide only primary settling of solids and the addition of chemicals to improve the removal of TSS (and phosphorus) are not considered as secondary treatment plants or secondary equivalent plants (MOE Design Guidelines for Sewage Works, 2008).

Tertiary:
Wastewater treatment plants that have biological processes (e.g. activated sludge process and its variations, fixed film processes) and/or physical-chemical processes producing an effluent quality of $CBOD_5$ and TSS of 5 mg/L or better are considered tertiary plants.

Note: Biological processes such as nitrification, denitrification and enhanced biological phosphorus removal can be part of either a secondary or tertiary treatment plant. They may be described as secondary treatment plant with nitrification, secondary treatment plant with enhanced biological phosphorus removal, tertiary treatment plant with nitrification etc.

Sewer System Type:

Sanitary Sewers:
Pipes that convey sanitary sewage flows made up of wastewater discharges from residential, commercial, institutional and industrial establishments plus extraneous flow components from such sources as groundwater and surface run off.

Combined Sewers:
Pipes that convey both sanitary sewage and stormwater runoff through a single-pipe system.

Partially Separated Sewers:
Exist when either a portion of the combined sewer area was retrofitted to separate (sanitary and storm) sewers and/or a service area with combined sewers has had a new development area with separate sewers added to the service area; whatever the case may be, the final flows will be combined sewage.

Nominally Separated Sewers:
These sewers are constructed as separate sewers, but the sanitary sewers accept stormwater from roof and foundation drains (i.e., these are separated sewers in name only).

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

1. Condition 1 regarding general provisions is imposed to ensure that the Works are constructed and operated in the manner in which they were described and upon which approval was granted.

2. Condition 2 regarding change of Owner and Operating Agency is included to ensure that the Ministry records are kept accurate and current with respect to ownership and Operating Agency of the 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 regarding record drawings 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, and that prior to the commencement of construction of the portion of the Works that are approved in principle only, the Director will have the opportunity to review detailed design drawings, specifications and an engineer's report containing detailed design calculations for that portion of the Works, to determine capability to comply with the Ministry's requirements stipulated in the terms and conditions of the Approval, and also ensure that the Works are constructed in accordance with the Approval and that record drawings of the Works "as constructed" are updated and maintained for future references.

4. Condition 4 regarding Bypasses is included to indicate that Bypass is prohibited, except in circumstances where the failure to Bypass could result in greater damage to the environment than the Bypass itself. 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 Bypass Events.

5. Condition 5 regarding Overflows is included to indicate that Overflow of untreated or partially treated sewage to the receiver is prohibited, except in circumstances where the failure to Overflow could result in greater damage to the environment than the Overflow itself. 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 Overflow Events.

6. Condition 6 regarding design objectives is imposed to establish non-enforceable design objectives to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs.

7. Condition 7 regarding compliance limits is imposed to ensure that the Final Effluent discharged from the Works to the environment meets the Ministry's effluent quality requirements.

8. Condition 8 regarding operation and maintenance 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. 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 regarding monitoring and recording 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 compliance limits.

10. Condition 10 regarding Limited Operational Flexibility is included to ensure that the Works are constructed, maintained and operated in accordance with the Approval, and that any pre-approved modification will not negatively impact on the performance of the Works.

11. Condition 11 regarding reporting 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 this Approval.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 6245-AB6HDR issued on August 8, 2016

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:

a. 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;
b. 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:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. 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, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** 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) 326-5370 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 April, 2020

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

WS/

c: District Manager, DWECD, MECP Peterborough
Maxwell Christie, P.Eng., XIE Environmental

Appendix B – Monitoring Data and Comparison to Effluent Limits

Colborne Water Pollution Control Plant 2021 Annual Plant Performance

Parameter		Unit	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	ECA (5)		Annual Avg
		m3	m3	m3	m3	m3	m3	m3	m3	m3	m3	m3	m3	m3	Objective	Limit	
FIT615 EFFLUENT FLOWS																	
Maximum Effluent Flow	FIT615 Effluent	m^3/d	1,215.59	1,056.87	1,713.56	2,171.74	1,234.88	556.89	1,051.24	791.53	2,945.43	2,011.87	1,492.45	2,317.08	N/A	N/A	1,546.59
Minimum Plant Effluent Flow	FIT615 Effluent	m^3/d	764.54	626.81	770.14	969.93	661.94	529.79	664.40	577.97	548.29	805.83	915.55	938.55	N/A	N/A	731.15
Average Plant Effluent Flow	FIT615 Effluent	m^3/d	964.25	725.86	974.27	1,358.75	872.35	631.25	795.24	662.15	920.94	1,021.17	1,087.78	1,303.77	N/A	N/A	943.15
Peak Flow Rate	FIT615 Effluent	m^3/d	3,473.00	3,490.00	3,993.00	3,436.00	1,235.00	3,940.00	4,497.00	3,616.00	4,573.00	3,790.00	3,591.00	4,498.00	N/A	N/A	3,677.67
Total Plant Flow for the Month	FIT615 Effluent	m^3	29,891.80	20,324.20	30,202.30	40,762.40	27,042.80	18,937.50	24,652.50	20,527.70	27,628.20	31,656.40	32,633.40	40,416.80	N/A	1,750.00	944.32
															Total Flow		**344,676.00**
Secondary Treatment Bypasses		m^3/d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	0.00
DIVERSION FLOW TO CELL 1																	
Diversion flow to Cell 1	FIT100 Cell 1	m^3/d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3,550	0.00	0.00	0.00	N/A	N/A	3,550.00
ECA PARAMETERS																	
Raw Sewage BOD		mg/L	113.75	127.75	124.60	82.25	105.50	170.60	136.00	125.00	124.00	94.25	90.50	76.20	f	N/A	114.20
Raw Sewage TSS		mg/L	126.00	90.25	118.00	81.75	89.75	153.80	165.33	124.67	105.60	57.25	104.70	74	N/A	N/A	107.59
Raw Sewage TKN		mg/L	45.50	40.70	31.14	19.90	29.73	39.94	29.27	32.67	27.60	20.25	24.23	19.9	N/A	N/A	30.07
Raw Sewage TP		mg/L	4.98	4.20	3.52	2.20	3.14	4.41	3.35	3.28	2.86	1.89	2.48	2.20	N/A	N/A	3.21
Effluent CBOD		mg/L	3.0	2.75	2.6	3.50	2.75	2.20	2.33	3.0	2.40	3.25	2.00	6.17	15.0	25	3.00
Effluent CBOD Loading (4)		kg/d	2.89	2.00	2.53	4.76	2.40	1.39	1.86	1.99	2.21	3.74	2.18	8.04	43.8	43.8	3.00
Effluent TSS		mg/L	7.25	6.75	7.2	7.50	8.5	6.40	5.67	6.7	8.20	10.25	7.75	6.33	15.0	25	7.37
Effluent TSS Loading (4)		kg/d	6.99	4.90	7.01	10.19	7.41	4.04	4.51	4.41	7.55	7.49	8.43	8.26	N/A	43.8	6.77
Effluent NH3 and NH4		mg/L	0.10	0.100	0.10	0.10	0.10	0.14	0.13	0.13	0.14	0.10	0.10	0.10	2/4	4/8	N/A
Effluent TP		mg/L	0.26	0.400	0.21	0.24	0.38	0.68	0.27	0.34	0.45	0.36	0.25	0.21	0.40	0.70	0.34
Effluent TP Loading (4)		kg/d	0.25	0.290	0.21	0.33	0.33	0.43	0.22	0.23	0.41	0.34	0.27	0.27	N/A	1.2	0.30
Effluent TCR		mg/L	0.00	0.01	0	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0	0.02	0.01
Effluent E. Coli		CFU/100 ml	5.00	4.50	54.00	55.60	7.50	45.33	62.67	122.00	111.00	**544.00**	24.80	20.17	100	200	N/A
Effluent Lethality Trout		%	N/A	N/A	N/A	N/A	6.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50%	N/A
Effluent Lethality Dm		%	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30%	N/A
Max pH			7.37	7.43	7.38	7.58	7.36	7.52	7.3	7.4	7.61	7.78	7.48	7.48	6.0 / 9.5	6.0 / 9.5	7.47
Min pH			7.11	6.62	6.82	6.95	6.78	6.99	6.80	7.21	7.13	7.19	7.30	7.16	6.0 / 9.5	6.0 / 9.5	7.01
Temperature		Celsius	10.20	8.50	9.10	10.80	13.00	16.50	18.10	20.10	19.30	17.69	13.75	12.09			14.09
Field pH			7.28	7.10	7.10	7.10	7.11	7.40	7.00	7.30	7.50	7.46	7.60	7.60	6.0 / 9.5	6.0 / 9.5	7.30

Appendix C – Maintenance Records

	MAINTENANCE 2021			
	Date	Equipment	Company	Maintenance Performed
1	January 6, 2021	Clarifier		Skimmed floatables
2	Janiuary 15, 2021	Cross Collector		Shear pin
3	January 26, 2021	SCADA		Cannot connect remotley rebooted moderm all good
4	January 29, 2021	Lab		Calibrate pH meter
5	Febrauary 1, 2021	Bisulphite pumps		Fault pump reset
6	Februry 2, 2021	Cross Collector		Shear pin
7	February 4, 2021	pH meter		Calibrate pH meter
8	February 6, 2021	Cross Collector		Triped due to ice buildup
9	Febraury 11, 2021	Lab		Calibrate pH meter
10	February 11, 2021	Clarifier		Skim clarifier
11	February 13, 2021	Dechlor pump		Verified. Operation
12	February 23, 2021	Genset test	Rowley Electric	Rowely Electric gen test
13	FebraURY 28, 2021	Power outage		Reset Building #3 Equipment
14	February 18, 2021	Lab		Calibrate pH meter
15	February 19, 2021	Cell 2		Break ice cover for wasting
16	February 19, 2021	Wasting		Discharge pipe frozen thawed with hot water
17	February 23, 2021	Bisulphite pump P616		removed pump and brought back to plant to clean / Resinstalled and back in service
18	February 23, 2021	SCADA		Control logic being checked by Eramosa rotation delay changed shortened tp 450 seconds from 900 seconds
19	February 25, 2021	Lab		Calibrate pH meter
20	February 28, 2021	PLC 02 Fault		Bisulphite pump P616
21	March 2, 2021	Clarifier		Ice build up reset sensor
22	March 5, 2021	Comminutor		Not running pulled for inspection drive coupling broken muffin monster O/S
23	March 6, 2021	Grit		Grit channel trash rack cleaned
24	March 7, 2021	Grit trash rack		Cleaned
25	March 8, 2021	Grit		Muffin monster removed and placed out of service gear connection broken
26	March 8, 2021	Sampler		Suction hose broken replaced and put back in service
27	March 11, 2021	Lab		Calibrate pH meter
28	March 14, 2021	Cross Collector		Ice cleared
29	March 15, 2021	Cross Collector		Ice cleared
30	March 18, 2021	Lab		Calibrate pH meter
31	March 25, 2021	Lab		Calibrate pH meter
32	March 28, 2021	Clarifier		Skimmed solids
33	March 29, 2021	Grit	Quinte Sewer	Quinte Sewer. Cleaned grit channel
34	April 1, 2021	Grinder	Rowley Electric	Rowely Electrical onsite connecting grinder
35	April 1, 2021	Grinder Motor		Getting quotes on new motor, megging motor indicated motor was weak and should be replaced
36	April 8, 2021	Clarifier		Cleaned
37	April 10, 2021	SCADA		Reboot black screen
38	April 11, 2021	SCADA		Reboot black screen
39	April 12, 2021	SCADA		Reboot modem

40	Aperil 13, 2021	Clarifier		Cleaned and Skimmed
41	April 14, 2021	Scum trap		Pumped out
42	April 15, 2021	Lab		Calibrate pH meter
43	April 21, 2021	Communications	Township IT	New modem installed
44	April 22, 2021	Lab		Calibrate pH meter
45	April 23, 2021	Lab		Calibrate pH meter
46	April 26, 2021	Scum trap		Pumped out
47	April 27, 2021	Genset tetsted	Rowely Electric	Test generators
48	April 28, 2021	Hypo		Hypo pump verified for proper operation by watching hypo move in the discharge tubing
49	April 29, 2021	Lab		Calibrate pH meter
50	May 1, 2021	Hypo		Verified. Operation
51	May 3, 2021	Scum trap		Scum traped pumped
52	May 5, 2021	Hypo		Hypo pump verified for proper operation by watching hypo move in the discharge tubing
53	May 9. 2021	Hypo		Hypo pump verified for proper operation by watching hypo move in the discharge tubing
54	May 10, 2021	Hypo		Hypo pump verified for proper operation by watching hypo move in the discharge tubing
55	May 13, 2021	Lab		Calibrate pH meter
56	May 17, 2021	Cross Collector		Shear pin replaced
57	May 18, 2021	Lab		Calibrate pH meter and change buffers
58	May 18, 2021	Lab		Chlorine verification using stadards DR 870 and Dr3500
59	May 19, 2021	Scum trap		Scum traped pumped
60	May 20, 2021	Lab		Calibrate pH meter
61	May 22, 021	Hypo		Verified. Operation
62	May 23, 2021	Generator	Rowely Electric	Rowley Testing Building 3 equipment required rebooting
63	M<ay 26, 2021	Generator Load test	Rowely Electric	Rowley Electric performed load test
64	May 28, 2021	Collection System	Quinte Sewer	Quinte flushing and camera work
65	May 31, 2021	Collection system	Quinte Sewer	Quinte flushing and camera work
66	June 4, 2021	Clarifier		Cleaned and Skimmed
67	June 10, 2021	Lab		Calibrate pH meter
68	June 10, 2021	Pumps		Check ground water pumps need Rowely to verify operation
69	June 13, 2021	Power outage		Reset Building #3 Equipment
70	June 14, 2021	Clarifier		Cleaned and Skimmed
71	June 14, 2021	Genset test	Rowley Electric	Genset test
72	June 16. 2021	Samplers		Raw sampler not working line plugged cleared back in service
73	June 18, 2021	Clarifier		Cleaned and Skimmed
74	June 18, 2021	Scum trap		Pumped out
75	jyne 21, 2021	Scum trap		Pumped out
76	June 21, 2021	HYpo pump P612		Service Soon alert on screen using Info button reset service notice
77	June 29, 2021	Power outage		Reset Building #3 Equipment
78	July 5, 2021	Clean Aeration and Clarifier concrete		Used pressure washer to clean concrete walls for clarifier and aeration tank
79	July 6, 2021	Blower room garage door		Painted

80	July 6, 2021	HYpo pump P612		alarms had to clean pump and verify operation
81	July 7, 2021	HYpo pump P612		Verify operation all good
82	July 15, 2021	Flow meters	Franklin Empire	Verified flow meters FIT330, 340 615
83	July 20, 2021	Effluent pump		Reboot pump faulted
84	July 22, 2021	SCADA	Eramosa	Checking alarms that did not go through dialer
85	July 23, 2021	Scum trap		Pumped out
86	July 26, 2021	Power outage		Reset Building #3 Equipment
87	July 30, 2021	Scum trap		Pumped out
88	August 4, 2021	Pumps	Rowley Electric	P220 and P730 replace with new pumps
89	August 5, 2021	Power outage		Reset Building #3 Equipment
90	August 12, 2021	Lab		Calibrate pH meter
91	August 19, 2021	Lab		Calibrate pH meter and change buffers
92	August 19, 2021	Pumps		Pulled P220 so flusher can be installed (Xylem)
93	August 25, 2021	Sampler		Raw samplew indication bottle full when bottle not full reprogrammed all good
94	August 25, 2021	Scum trap		Pumped out
95	August 29, 2021	Scum trap		Pumped out
96	August 30, 2021	Scum trap		Pumped out
97	August 31, 2021	Clarifier		Skim clarifier
98	August 31, 2021	Lab		Calibrate pH meter
99	September 2, 2021	Lab		Calibrate pH meter
100	September 6, 2021	Clarifier		Long collectors in alarms AH attended plant to investigate
101	September 7, 2021	Collectors	Rowley Electric	Rowley at plant to check collector issue found loose wire which was tightened long collector back in service
102	September 9, 2021	Lab		Calibrate pH meter
103	September 16, 2021	Genset test	Rowley Electric	Gen test
104	September 23, 2021	Lab		Calibrate pH meter
105	September 27, 2021	Coillection System		Camera collectors
106	September 29, 2021	Scum trap		Pumped out
107	September 30, 2021	Lab		Calibrate pH meter
108	September 30, 2021	Cell 2		Valve opened to lower Cell 2 sludge removal soon
109	October 4, 2021	Scum trap		Calibrate pH meter
110	October 7, 2021	Lab		Calibrate pH meter
111	October 7, 20321	Scum trap		Pumped out
112	October 8, 2021	Collection System		Checking laterals on HWY 2 with push camera
113	October 12, 2021	Sludge	Terapure	Started scheduled sludge removal cell 2
114	October 13, 2021	Sludge	Terapure	Day 2 sluydge Reoval
115	October 14, 2021	Lab		Calibrate pH meter
116	October 14, 2021	Lab		Calibrate pH meter
117	October 14, 2021	Sludge	Terapure	Day 3 Sludge removal finished today
118	October 16, 2021	Scum trap		Pumped out
119	October 18, 2021	Scum trap		Pumped out

120	October 19, 2021	Collection System	Quite	Camera work HWY 2
121	October 21, 2021	Lab		Calibrate pH meter
122	October 25, 2021	Scum trap		Pumped out
123	October 26, 2021	Lab		Calibrate pH meter
124	October 28, 2021	Lab		Calibrate pH meter
125	October 28, 2021	Building Lighting	Rowley Electric	Replacing exterior lights
126	October 31, 2021	Scum trap		Pumped out
127	November 1, 2021	Grit trash rack	Quite Sewer	Cleaning Grit channel
128	November 2, 2021	HYpo pump P612		P612 faulted removed from service cleaned and placed back in service new diaphgram
129	November 2, 2021	Lighting	Rowley Electric	Continued light replacement
130	November 4, 2021	Lab		Calibrate pH meter
131	November 5, 2021	Scum trap		Pumped out
132	November 9, 2021	Lab		Calibrate pH meter
133	November 10, 2021	P210		P210 faulted power removed pump installed backup back in service
134	November 12, 2021	Cell 2		Vavle closed between Cell 2 and Cell 1
135	November 13, 2021	Comminutor		Out of service motor running but knives not
136	November 15, 2021	Comminutor	Rowley Electric	Removed for inspec tion
137	November 17, 2021	P210	Rowley Electric	Hooking up P210
138	November 19, 2021	Scum trap		Pumped out
139	November 29, 2021	Collection System	Quite	Quinte on Simmons Stree Cleaning and camera work
140	November 30, 2021	Coillection System	EnviroTECH	Grouting on Simmon Street 5 leaks fixed
141	November 30, 2021	Blower		B801 fault motoer overload
142	December 1, 022	Scum trap		Scum traped pumped
143	December 2, 2021	Lab		Calibrate pH meter
144	December 9, 2021	Lab		Calibrate pH meter
145	December 11, 2021	Power outage		Reset Building #3 Equipment
146	December 13, 2021	Scum trap		Pumped out
147	December 13, 2021	P511 RAS Pump	Rowley Electric	Disconnected P511 RAS Pump to swap out with new pump
148	December 15, 2021	P511 RAS Pump	Rowley Electric	Connected and placed back inservice P511
149	December 16, 2021	Lab		Calibrate pH meter
150	December 22, 2021	Lab		Calibrate pH meter
151	December 30, 2021	Lab		Calibrate pH meter

Appendix D – 2021 MUMPS REPORTS

Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R1
Mechanical Plants

Fields marked with an asterisk (*) are mandatory.

Project Name
Colborne Water Pollution Control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

Operating Authority
Corporation of the Township of Cramahe

Mailing Address

Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000008	01	2021	31	2	R
1 2	3 11	16 19		20 21	22	80

C.P.		Parameter Code	Dec.	Monthly Results	# of Occurrences
01	**Flows**				
	Total Flow (10^3 m^3)	50010	3	29.892	
	Average Daily Flow (10^3 m^3/d)	50015	3	1.260	
	Maximum Daily Flow (10^3 m^3/d)	50020	3	964.000	
		30 34	35	38	
26	**Bypass**				# of Occurrences
	Plant Bypass Volume (10^3 m^3)	50026	3	0.000	0
	Duration (hours)	80563	1	0.0	
	Secondary Bypass Volume (10^3 m^3)	50040	3	0.000	0
	Duration (hours)	80565	1	0.0	
		30 34	35	38	
03	**Raw Sewage**				# of Samples
	BOD_5 (mg/L)	00001	0	125	4
	Suspended Solids (mg/L)	00006	0	90	4
	TKN (mg/L)	00020	2	40.70	4
	Total Phosphorus (mg/L)	00033	1	4.2	4
		30 34	35	38	
04	**Final Effluent**				
	BOD_5 (mg/L)	00001	1	0.0	0
	$CBOD_5$ (mg/L)	00002	1	2.7	4
	Suspended Solids (mg/L)	00006	1	6.7	4
	Ammonia + Ammonium (mg/L)	00019	2	0.10	4
	TKN (mg/L)	00020	2		
	Total Phosphorus (mg/L)	00033	2	0.40	4
		30 34	35	38	
07	**Disinfection**				
	Chlorine Used (kg as Cl_2)	50100	1	75.2	
	Chlorine Dosage (mg/L as Cl_2)	80410	1	3.7	
	Chlorine Residual (mg/L as Cl_2)	80420	1	0.0	4
		30 34	35	38	

Operator Telephone Number
613-284-7290

Operator Email Address *
jwwc_1@xplornet.ca

Comments
Ted Joynt ORO / Phil Kelly OIC (905)-396-0007

Return completed form to:

1. Environmental Monitoring and Reporting Branch, MECP, at WasteWaterReporting@ontario.ca And
2. Your Environmental Officer at your local District/Area MECP Office.

Ministry Contact Email Address *
brittney.wielgos@ontario.ca

Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R2
Mechanical Plants

Project Name
Colborne Water Pollution Control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

Operating Authority
Corporation of the Township of Cramahe

Mailing Address

Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000088	01	2021	31	2	R
1 2	3 11	16 19		20 21	22	80

C.P.		Raw Sewage	Parameter Code	Dec	Monthly Average Results	# of Samples
0	3					
12	13		30 34	35	38	

C.P.		Final Effluent		Parameter Code	Dec	Monthly Average Results	# of Samples
0	4	Alkalinity, Total	(mg/L)	00051	4		
12	13	Conductivity 25°C	(µS/cm)	91004	4		
		E. Coli	(CT/100ml)	91000	4	4.5000	4
		Nitrate, Unfiltered reactive	(mg/L)	00022	4		
		Nitrite, Unfiltered reactive	(mg/L)	00021	4		
		pH		80770	4	7.1000	4
		Temperature, Water	(°C)	80250	4	6.2500	4
		Un-ionized Ammonia	(mg/L)	91012	4	0.0010	4
		Dissolved Oxygen	(mg/L)	00003	4		
		Hydrogen Sulphide	(mg/L)	83008	4		
		CBOD Loading kg/d				2.0000	4
		TSS Loading				4.9000	4
		TP Loading				0.2900	4
		Max pH				7.4000	4
		Min pH				6.6000	4
				30 34	35	38	

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File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000088	02	2021	28	2	R
1 2	3 11	16 19		20 21	22	80

C.P.			Parameter Code	Dec.	Monthly Results	# of Occurrences
01		**Flows**				
12 13		Total Flow	(10^3 m^3) 50010	3	20.320	
		Average Daily Flow	(10^3 m^3/d) 50015	3	0.726	
		Maximum Daily Flow	(10^3 m^3/d) 50020	3	1.057	
			30 34	35	38	
26		**Bypass**				# of Occurrences
12 13		Plant Bypass Volume	(10^3 m^3) 50026	3	0.000	0
		Duration	(hours) 80563	1	0.0	
		Secondary Bypass Volume	(10^3 m^3) 50040	3	0.000	0
		Duration	(hours) 80565	1	0.0	
			30 34	35	38	
03		**Raw Sewage**				# of Samples
12 13		BOD_5	(mg/L) 00001	0	125	4
		Suspended Solids	(mg/L) 00006	0	90	4
		TKN	(mg/L) 00020	2	40.70	4
		Total Phosphorus	(mg/L) 00033	1	4.2	4
			30 34	35	38	
04		**Final Effluent**				
12 13		BOD_5	(mg/L) 00001	1	0.0	0
		$CBOD_5$	(mg/L) 00002	1	2.7	4
		Suspended Solids	(mg/L) 00006	1	6.7	4
		Ammonia + Ammonium	(mg/L) 00019	2	0.10	4
		TKN	(mg/L) 00020	2		
		Total Phosphorus	(mg/L) 00033	2	0.40	4
			30 34	35	38	
07		**Disinfection**				
12 13		Chlorine Used	(kg as Cl_2) 50100	1	75.2	
		Chlorine Dosage	(mg/L as Cl_2) 80410	1	3.7	
		Chlorine Residual	(mg/L as Cl_2) 80420	1	0.0	4
			30 34	35	38	

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Operator Email Address *
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Comments
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Ministry Contact Email Address *
paul.millar@ontario.ca

Ontario — Ministry of the Environment, Conservation and Parks

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Mechanical Plants

Project Name
Colborne Water Pollution control Plant

Facility Address

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Colborne	ON - Ontario	K0K 1S0

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46	12000088	02	2021	28	2	R
1 2	3 11	16 19		20 21	22	80

C.P.		Raw Sewage	Parameter Code	Dec	Monthly Average Results	# of Samples
0	3					
12	13		30 34	35	38	

0	4	Final Effluent		Parameter Code	Dec	Monthly Average Results	# of Samples
12	13	Alkalinity, Total	(mg/L)	00051	4		
		Conductivity 25°C	(µS/cm)	91004	4		
		E. Coli	(CT/100ml)	91000	4	4.5000	4
		Nitrate, Unfiltered reactive	(mg/L)	00022	4		
		Nitrite, Unfiltered reactive	(mg/L)	00021	4		
		pH		80770	4	7.1000	4
		Temperature, Water	(°C)	80250	4	8.5000	4
		Un-ionized Ammonia	(mg/L)	91012	4	0.0010	4
		Dissolved Oxygen	(mg/L)	00003	4		
		Hydrogen Sulphide	(mg/L)	83008	4		
		CBOD Loading kg/d				2.0000	4
		TSS Loading				4.9000	4
		TP Loading				0.2900	4
		Max pH				7.4000	4
		Min pH				6.6000	4
				30 34	35	38	

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Ted Joynt ORO 613-284-7290/ Phil Kelly OIC (905) 396-0007

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Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R1
Mechanical Plants

Fields marked with an asterisk (*) are mandatory.

Project Name
Colborne Water Pollution control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

Operating Authority
Corporation of the Township of Cramahe

Mailing Address

Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000008	03	2021	31	2	R
1 2	3 — 11	16	19	20 21	22	80

C.P.		Parameter Code	Dec.	Monthly Results	# of Occurrences
01	**Flows**				
	Total Flow (10^3 m^3)	50010	3	30.202	
	Average Daily Flow (10^3 m^3/d)	50015	3	0.974	
	Maximum Daily Flow (10^3 m^3/d)	50020	3	1.714	
26	**Bypass**				# of Occurrences
	Plant Bypass Volume (10^3 m^3)	50026	3	0.000	0
	Duration (hours)	80563	1	0.0	
	Secondary Bypass Volume (10^3 m^3)	50040	3	0.000	0
	Duration (hours)	80565	1	0.0	
03	**Raw Sewage**				# of Samples
	BOD_5 (mg/L)	00001	0	124	5
	Suspended Solids (mg/L)	00006	0	118	5
	TKN (mg/L)	00020	2	31.14	5
	Total Phosphorus (mg/L)	00033	1	3.5	5
04	**Final Effluent**				
	BOD_5 (mg/L)	00001	1	0.0	0
	$CBOD_5$ (mg/L)	00002	1	2.6	5
	Suspended Solids (mg/L)	00006	1	7.2	5
	Ammonia + Ammonium (mg/L)	00019	2	0.10	5
	TKN (mg/L)	00020	2		
	Total Phosphorus (mg/L)	00033	2	0.21	5
07	**Disinfection**				
	Chlorine Used (kg as Cl_2)	50100	1	131.0	
	Chlorine Dosage (mg/L as Cl_2)	80410	1	4.3	
	Chlorine Residual (mg/L as Cl_2)	80420	1	0.0	5
12 13		30 — 34	35	38	

Operator Telephone Number
613-284-7290

Operator Email Address *
jwwc_1@xplornet.ca

Comments
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Ministry Contact Email Address *
paul.millar@ontario.ca

Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R2
Mechanical Plants

Project Name
Colborne Water Pollution control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

Operating Authority
Corporation of the Township of Cramahe

Mailing Address

Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	120000088	03	2021	31	2	R
1 2	3 11	16 19		20 21	22	80

C.P. 03 (12 13)

Raw Sewage	Parameter Code	Dec	Monthly Average Results	# of Samples
(30 34)		(35)	(38)	

C.P. 04 (12 13)

Final Effluent		Parameter Code	Dec	Monthly Average Results	# of Samples
Alkalinity, Total	(mg/L)	00051	4		
Conductivity 25°C	(µS/cm)	91004	4		
E. Coli	(CT/100ml)	91000	4	54.0000	5
Nitrate, Unfiltered reactive	(mg/L)	00022	4		
Nitrite, Unfiltered reactive	(mg/L)	00021	4		
pH		80770	4	7.2000	5
Temperature, Water	(°C)	80250	4	9.1000	5
Un-ionized Ammonia	(mg/L)	91012	4	0.0010	5
Dissolved Oxygen	(mg/L)	00003	4		
Hydrogen Sulphide	(mg/L)	83008	4		
CBOD Loading kg/d				2.5300	5
TSS Loading				7.0100	5
TP Loading				0.2100	5
Max pH				7.3800	5
Min pH				6.8200	5
(30)		34	(35)	(38)	

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Municipal Utility Monitoring Program R1
Mechanical Plants

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File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000088	04	2021	30	2	R
1 2	3 11	16	19	20 21	22	80

C.P.			Parameter Code	Dec.	Monthly Results	
01	**Flows**					
12 13	Total Flow	(10^3 m^3)	50010	3	40.762	
	Average Daily Flow	(10^3 m^3/d)	50015	3	0.969	
	Maximum Daily Flow	(10^3 m^3/d)	50020	3	1.358	
			30 34	35	38	
26	**Bypass**					# of Occurrences
12 13	Plant Bypass Volume	(10^3 m^3)	50026	3	0.000	0
	Duration	(hours)	80563	1	0.0	
	Secondary Bypass Volume	(10^3 m^3)	50040	3	0.000	0
	Duration	(hours)	80565	1	0.0	
			30 34	35	38	
03	**Raw Sewage**					# of Samples
12 13	BOD_5	(mg/L)	00001	0	82	4
	Suspended Solids	(mg/L)	00006	0	81	4
	TKN	(mg/L)	00020	2	19.90	4
	Total Phosphorus	(mg/L)	00033	1	2.2	4
			30 34	35	38	
04	**Final Effluent**					
12 13	BOD_5	(mg/L)	00001	1	0.0	0
	$CBOD_5$	(mg/L)	00002	1	3.5	4
	Suspended Solids	(mg/L)	00006	1	7.5	4
	Ammonia + Ammonium	(mg/L)	00019	2	0.10	4
	TKN	(mg/L)	00020	2		
	Total Phosphorus	(mg/L)	00033	2	0.24	4
			30 34	35	38	
07	**Disinfection**					
12 13	Chlorine Used	(kg as Cl_2)	50100	1	262.7	
	Chlorine Dosage	(mg/L as Cl_2)	80410	1	6.4	
	Chlorine Residual	(mg/L as Cl_2)	80420	1	0.0	4
			30 34	35	38	

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brittney.wielgos@ontario.ca

Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R2
Mechanical Plants

Project Name
Colborne Water Pollution control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

Operating Authority
Corporation of the Township of Cramahe

Mailing Address

Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	10000008	04	2021	30	2	R
1 2	3 11	16 19		20 21	22	80

C.P.		Raw Sewage	Parameter Code	Dec	Monthly Average Results	# of Samples
03	12 13		30 34	35	38	

C.P.		Final Effluent		Parameter Code	Dec	Monthly Average Results	# of Samples
04	12 13	Alkalinity, Total	(mg/L)	00051	4		
		Conductivity 25°C	(µS/cm)	91004	4		
		E. Coli	(CT/100ml)	91000	4	55.0000	4
		Nitrate, Unfiltered reactive	(mg/L)	00022	4		
		Nitrite, Unfiltered reactive	(mg/L)	00021	4		
		pH		80770	4	7.2000	4
		Temperature, Water	(°C)	80250	4	10.8000	4
		Un-ionized Ammonia	(mg/L)	91012	4	0.0010	4
		Dissolved Oxygen	(mg/L)	00003	4		
		Hydrogen Sulphide	(mg/L)	83008	4		
		CBOD Loading kg/d				4.7600	4
		TSS Loading				10.1900	4
		TP Loading				0.3300	4
		Max pH				7.6000	4
		Min pH				7.0000	4
				30 34	35	38	

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Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R1
Mechanical Plants

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Project Name
Colborne Water Pollution control Plant

Facility Address

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	1108	Ontario	

Municipality/City/Town	Province	Postal Code
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Municipality/City/Town	Province	Postal Code
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File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000088	05	2021	31	2	R
1 2	3 11	16 19		20 21	22	80

C.P.			Parameter Code	Dec.	Monthly Results	
01		**Flows**				
12 13		Total Flow	(10^3 m^3)	50010	3	27.042	
		Average Daily Flow	(10^3 m^3/d)	50015	3	1.234	
		Maximum Daily Flow	(10^3 m^3/d)	50020	3	0.872	
				30 34	35	38	
26		**Bypass**					# of Occurrences
12 13		Plant Bypass Volume	(10^3 m^3)	50026	3	0.000	0
		Duration	(hours)	80563	1	0.0	
		Secondary Bypass Volume	(10^3 m^3)	50040	3	0.000	0
		Duration	(hours)	80565	1	0.0	
				30 34	35	38	
03		**Raw Sewage**					# of Samples
12 13		BOD_5	(mg/L)	00001	0	105	4
		Suspended Solids	(mg/L)	00006	0	89	4
		TKN	(mg/L)	00020	2	29.70	4
		Total Phosphorus	(mg/L)	00033	1	3.1	4
				30 34	35	38	
04		**Final Effluent**					
12 13		BOD_5	(mg/L)	00001	1	0.0	0
		$CBOD_5$	(mg/L)	00002	1	2.7	4
		Suspended Solids	(mg/L)	00006	1	8.5	4
		Ammonia + Ammonium	(mg/L)	00019	2	0.10	4
		TKN	(mg/L)	00020	2		
		Total Phosphorus	(mg/L)	00033	2	0.38	4
				30 34	35	38	
07		**Disinfection**					
12 13		Chlorine Used	(kg as Cl_2)	50100	1	188.0	
		Chlorine Dosage	(mg/L as Cl_2)	80410	1	6.9	
		Chlorine Residual	(mg/L as Cl_2)	80420	1	0.0	4
				30 34	35	38	

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Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R2
Mechanical Plants

Project Name
Colborne Water Pollution control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

Operating Authority
Corporation of the Township of Cramahe

Mailing Address

Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No. (1–2)	Works Number * (3–11)	Data Period * Month (16–17)	Data Period * Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	120000008	05	2021	31	2	R

C.P. 03 (12–13) — Raw Sewage

Parameter Code (30–34)	Dec (35)	Monthly Average Results (38)	# of Samples

C.P. 04 (12–13) — Final Effluent

Final Effluent		Parameter Code (30–34)	Dec (35)	Monthly Average Results (38)	# of Samples
Alkalinity, Total	(mg/L)	00051	4		
Conductivity 25°C	(µS/cm)	91004	4		
E. Coli	(CT/100ml)	91000	4	7.5000	4
Nitrate, Unfiltered reactive	(mg/L)	00022	4		
Nitrite, Unfiltered reactive	(mg/L)	00021	4		
pH		80770	4	7.1000	4
Temperature, Water	(°C)	80250	4	13.0000	4
Un-ionized Ammonia	(mg/L)	91012	4	0.0010	4
Dissolved Oxygen	(mg/L)	00003	4		
Hydrogen Sulphide	(mg/L)	83008	4		
CBOD Loading kg/d				2.4000	4
TSS Loading				7.4100	4
TP Loading				0.3300	4
Max pH				7.8360	4
Min pH				6.7800	4

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Ontario

Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R2
Mechanical Plants

Project Name
Colborne Water Pollution control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

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Corporation of the Township of Cramahe

Mailing Address

Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000008	06	2021	30	2	R
1 2	3 11	16 19		20 21	22	80

C.P.		Raw Sewage	Parameter Code	Dec	Monthly Average Results	# of Samples
0	3					
12	13		30 34	35	38	

		Final Effluent		Parameter Code	Dec	Monthly Average Results	# of Samples
0	4	Alkalinity, Total	(mg/L)	00051	4		
12	13	Conductivity 25°C	(µS/cm)	91004	4		
		E. Coli	(CT/100ml)	91000	4	36.1000	5
		Nitrate, Unfiltered reactive	(mg/L)	00022	4		
		Nitrite, Unfiltered reactive	(mg/L)	00021	4		
		pH		80770	4	7.4000	5
		Temperature, Water	(°C)	80250	4	16.5000	5
		Un-ionized Ammonia	(mg/L)	91012	4	0.0010	5
		Dissolved Oxygen	(mg/L)	00003	4		
		Hydrogen Sulphide	(mg/L)	83008	4		
		CBOD Loading kg/d				2.4000	5
		TSS Loading				7.4100	5
		TP Loading				0.3300	5
		Max pH				7.3600	5
		Min pH				6.7800	5
				30 34	35	38	

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Municipal Utility Monitoring Program R1
Mechanical Plants

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Project Name
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Facility Address

Unit Number	Street Number	Street Name	PO Box
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Municipality/City/Town	Province	Postal Code
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File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000088	06	2021	30	2	R
1 2	3 11	16	19	20 21	22	80

C.P.		Parameter Code	Dec.	Monthly Results	# of Occurrences
01	**Flows**				
	Total Flow (10^3 m^3)	50010	3	18.937	
	Average Daily Flow (10^3 m^3/d)	50015	3	0.631	
	Maximum Daily Flow (10^3 m^3/d)	50020	3	0.764	
		30 34	35	38	
26	**Bypass**				# of Occurrences
	Plant Bypass Volume (10^3 m^3)	50026	3	0.000	0
	Duration (hours)	80563	1	0.0	
	Secondary Bypass Volume (10^3 m^3)	50040	3	0.000	0
	Duration (hours)	80565	1	0.0	
		30 34	35	38	
03	**Raw Sewage**				# of Samples
	BOD_5 (mg/L)	00001	0	170	5
	Suspended Solids (mg/L)	00006	0	153	5
	TKN (mg/L)	00020	2	39.80	5
	Total Phosphorus (mg/L)	00033	1	4.4	5
		30 34	35	38	
04	**Final Effluent**				
	BOD_5 (mg/L)	00001	1	0.0	0
	$CBOD_5$ (mg/L)	00002	1	2.2	5
	Suspended Solids (mg/L)	00006	1	6.4	5
	Ammonia + Ammonium (mg/L)	00019	2	0.10	5
	TKN (mg/L)	00020	2		
	Total Phosphorus (mg/L)	00033	2	0.68	5
		30 34	35	38	
07	**Disinfection**				
	Chlorine Used (kg as Cl_2)	50100	1	97.0	
	Chlorine Dosage (mg/L as Cl_2)	80410	1	5.1	
	Chlorine Residual (mg/L as Cl_2)	80420	1	0.0	5
		30 34	35	38	

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Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R2
Mechanical Plants

Project Name
Colborne Water Pollution Control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
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Corporation of the Township of Cramahe

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Colborne	ON - Ontario	K0K 1S0

File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000088	07	2021	31	2	R
1 2	3 11	16 19		20 21	22	80

C.P.	Raw Sewage	Parameter Code	Dec	Monthly Average Results	# of Samples
03					
12 13		30 34	35	38	

04	Final Effluent		Parameter Code	Dec	Monthly Average Results	# of Samples
12 13	Alkalinity, Total	(mg/L)	00051	4		
	Conductivity 25°C	(µS/cm)	91004	4		
	E. Coli	(CT/100ml)	91000	4	62.6000	4
	Nitrate, Unfiltered reactive	(mg/L)	00022	4		
	Nitrite, Unfiltered reactive	(mg/L)	00021	4		
	pH		80770	4	7.0000	4
	Temperature, Water	(°C)	80250	4	18.1000	4
	Un-ionized Ammonia	(mg/L)	91012	4	0.0010	4
	Dissolved Oxygen	(mg/L)	00003	4		
	Hydrogen Sulphide	(mg/L)	83008	4		
	CBOD Loading kg/d				1.8600	4
	TSS Loading				4.5100	4
	TP Loading				0.2200	4
	Max pH				7.3000	4
	Min pH				6.8000	4
			30 34	35	38	

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Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No. (1-2)	Works Number * (3-11)	Data Period * Month (16-17)	Data Period * Year (18-19)	Days (20-21)	Discharge Type (22)	Update Code (80)
46	12000088	07	2021	31	2	R

C.P. (12-13)			Parameter Code (30-34)	Dec. (35)	Monthly Results (38)	# of Occurrences
01	**Flows**					
	Total Flow	(10^3 m^3)	50010	3	24.652	
	Average Daily Flow	(10^3 m^3/d)	50015	3	0.795	
	Maximum Daily Flow	(10^3 m^3/d)	50020	3	1.051	
26	**Bypass**					# of Occurrences
	Plant Bypass Volume	(10^3 m^3)	50026	3	0.000	0
	Duration	(hours)	80563	1	0.0	
	Secondary Bypass Volume	(10^3 m^3)	50040	3	0.000	0
	Duration	(hours)	80565	1	0.0	
03	**Raw Sewage**					# of Samples
	BOD_5	(mg/L)	00001	0	136	4
	Suspended Solids	(mg/L)	00006	0	165	4
	TKN	(mg/L)	00020	2	29.27	4
	Total Phosphorus	(mg/L)	00033	1	3.3	4
04	**Final Effluent**					
	BOD_5	(mg/L)	00001	1	0.0	0
	$CBOD_5$	(mg/L)	00002	1	2.3	4
	Suspended Solids	(mg/L)	00006	1	5.6	4
	Ammonia + Ammonium	(mg/L)	00019	2	0.13	4
	TKN	(mg/L)	00020	2	0.00	0
	Total Phosphorus	(mg/L)	00033	2	0.27	4
07	**Disinfection**					
	Chlorine Used	(kg as Cl_2)	50100	1	141.8	
	Chlorine Dosage	(mg/L as Cl_2)	80410	1	5.7	
	Chlorine Residual	(mg/L as Cl_2)	80420	1	0.0	4

Operator Telephone Number
613-284-7290

Operator Email Address *
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Comments
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Ministry Contact Email Address *
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Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R1
Mechanical Plants

Fields marked with an asterisk (*) are mandatory.

Project Name
Colborne Water Pollution Control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

Operating Authority
Corporation of the Township of Cramahe

Mailing Address

Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000088	08	2021	31	2	R
1 2	3 11	16 19		20 21	22	80

C.P.		Parameter Code	Dec.	Monthly Results	# of Occurrences
01	**Flows**				
	Total Flow (10^3 m^3)	50010	3	20.527	
	Average Daily Flow (10^3 m^3/d)	50015	3	0.662	
	Maximum Daily Flow (10^3 m^3/d)	50020	3	0.792	
		30 34	35	38	
26	**Bypass**				# of Occurrences
	Plant Bypass Volume (10^3 m^3)	50026	3	0.000	0
	Duration (hours)	80563	1	0.0	
	Secondary Bypass Volume (10^3 m^3)	50040	3	0.000	0
	Duration (hours)	80565	1	0.0	
		30 34	35	38	
03	**Raw Sewage**				# of Samples
	BOD_5 (mg/L)	00001	0	125	4
	Suspended Solids (mg/L)	00006	0	124	4
	TKN (mg/L)	00020	2	32.60	4
	Total Phosphorus (mg/L)	00033	1	3.2	4
		30 34	35	38	
04	**Final Effluent**				
	BOD_5 (mg/L)	00001	1	0.0	0
	$CBOD_5$ (mg/L)	00002	1	3.0	4
	Suspended Solids (mg/L)	00006	1	6.6	4
	Ammonia + Ammonium (mg/L)	00019	2	0.12	4
	TKN (mg/L)	00020	2	0.00	0
	Total Phosphorus (mg/L)	00033	2	0.34	4
		30 34	35	38	
07	**Disinfection**				
	Chlorine Used (kg as Cl_2)	50100	1	101.2	
	Chlorine Dosage (mg/L as Cl_2)	80410	1	4.9	
	Chlorine Residual (mg/L as Cl_2)	80420	1	0.0	4
		30 34	35	38	

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Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R2
Mechanical Plants

Project Name
Colborne Water Pollution Control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

Operating Authority
Corporation of the Township of Cramahe

Mailing Address

Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000008 8	08	2021	31	2	R
1 2	3 11	16 19		20 21	22	80

C.P.		Raw Sewage	Parameter Code	Dec	Monthly Average Results	# of Samples
03	12 13		30 34	35	38	

C.P.		Final Effluent		Parameter Code	Dec	Monthly Average Results	# of Samples
04	12 13	Alkalinity, Total	(mg/L)	00051	4		
		Conductivity 25°C	(µS/cm)	91004	4		
		E. Coli	(CT/100ml)	91000	4	122.0000	4
		Nitrate, Unfiltered reactive	(mg/L)	00022	4		
		Nitrite, Unfiltered reactive	(mg/L)	00021	4		
		pH		80770	4	7.4000	4
		Temperature, Water	(°C)	80250	4	20.1000	4
		Un-ionized Ammonia	(mg/L)	91012	4	0.0010	4
		Dissolved Oxygen	(mg/L)	00003	4		
		Hydrogen Sulphide	(mg/L)	83008	4		
		CBOD Loading kg/d				1.9900	4
		TSS Loading				4.4100	4
		TP Loading				0.2300	4
		Max pH				7.4000	4
		Min pH				7.2000	4
				30 34	35	38	

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Municipal Utility Monitoring Program R1
Mechanical Plants

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Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No. (1–2)	Works Number * (3–11)	Data Period * Month (16–17)	Data Period * Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	12000008 8	09	2021	30	2	R

C.P.				Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	
01		**Flows**					
		Total Flow	(10^3 m^3)	50010	3	27.628	
		Average Daily Flow	(10^3 m^3/d)	50015	3	0.921	
		Maximum Daily Flow	(10^3 m^3/d)	50020	3	2.945	
26		**Bypass**					# of Occurrences
		Plant Bypass Volume	(10^3 m^3)	50026	3	0.000	0
		Duration	(hours)	80563	1	0.0	
		Secondary Bypass Volume	(10^3 m^3)	50040	3	0.000	0
		Duration	(hours)	80565	1	0.0	
03		**Raw Sewage**					# of Samples
		BOD_5	(mg/L)	00001	0	105	5
		Suspended Solids	(mg/L)	00006	0	96	5
		TKN	(mg/L)	00020	2	22.08	5
		Total Phosphorus	(mg/L)	00033	1	2.2	5
04		**Final Effluent**					
		BOD_5	(mg/L)	00001	1	0.0	0
		$CBOD_5$	(mg/L)	00002	1	3.0	5
		Suspended Solids	(mg/L)	00006	1	11.4	5
		Ammonia + Ammonium	(mg/L)	00019	2	0.10	5
		TKN	(mg/L)	00020	2	0.00	0
		Total Phosphorus	(mg/L)	00033	2	0.53	5
07		**Disinfection**					
		Chlorine Used	(kg as Cl_2)	50100	1	183.0	
		Chlorine Dosage	(mg/L as Cl_2)	80410	1	6.6	
		Chlorine Residual	(mg/L as Cl_2)	80420	1	0.0	5

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Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R2
Mechanical Plants

Project Name
Colborne Water Pollution Control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

Operating Authority
Corporation of the Township of Cramahe

Mailing Address

Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000008	09	2021	30	2	R
1 2	3 11	16 19		20 21	22	80

C.P.		Raw Sewage	Parameter Code	Dec	Monthly Average Results	# of Samples
03	12 13		30 34	35	38	

C.P.		Final Effluent		Parameter Code	Dec	Monthly Average Results	# of Samples
04	12 13	Alkalinity, Total	(mg/L)	00051	4		
		Conductivity 25°C	(µS/cm)	91004	4		
		E. Coli	(CT/100ml)	91000	4	111.0000	5
		Nitrate, Unfiltered reactive	(mg/L)	00022	4		
		Nitrite, Unfiltered reactive	(mg/L)	00021	4		
		pH		80770	4	7.4000	5
		Temperature, Water	(°C)	80250	4	18.8000	5
		Un-ionized Ammonia	(mg/L)	91012	4	0.0010	5
		Dissolved Oxygen	(mg/L)	00003	4		
		Hydrogen Sulphide	(mg/L)	83008	4		
		CBOD Loading kg/d				2.2100	5
		TSS Loading				7.5500	5
		TP Loading				0.4100	5
		Max pH				7.6000	5
		Min pH				7.3600	5
				30 34	35	38	

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Municipal Utility Monitoring Program R1
Mechanical Plants

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Project Name
Colborne Water Pollution Control Plant

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File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000088	10	2021	31	2	R
1 2	3 11	16 19		20 21	22	80

C.P.			Parameter Code	Dec.	Monthly Results	# of Occurrences
01		**Flows**				
12 13		Total Flow	(10³ m³) 50010	3	31.656	
		Average Daily Flow	(10³ m³/d) 50015	3	1.021	
		Maximum Daily Flow	(10³ m³/d) 50020	3	2.012	
			30 34	35	38	
26		**Bypass**				# of Occurrences
12 13		Plant Bypass Volume	(10³ m³) 50026	3	0.000	0
		Duration	(hours) 80563	1	0.0	
		Secondary Bypass Volume	(10³ m³) 50040	3	0.000	0
		Duration	(hours) 80565	1	0.0	
			30 34	35	38	
03		**Raw Sewage**				# of Samples
12 13		BOD_5	(mg/L) 00001	0	94	4
		Suspended Solids	(mg/L) 00006	0	57	4
		TKN	(mg/L) 00020	2	20.25	4
		Total Phosphorus	(mg/L) 00033	1	1.8	4
			30 34	35	38	
04		**Final Effluent**				
12 13		BOD_5	(mg/L) 00001	1	0.0	0
		$CBOD_5$	(mg/L) 00002	1	3.2	4
		Suspended Solids	(mg/L) 00006	1	10.3	4
		Ammonia + Ammonium	(mg/L) 00019	2	0.10	4
		TKN	(mg/L) 00020	2	0.00	0
		Total Phosphorus	(mg/L) 00033	2	0.36	4
			30 34	35	38	
07		**Disinfection**				
12 13		Chlorine Used	(kg as Cl_2) 50100	1	270.6	
		Chlorine Dosage	(mg/L as Cl_2) 80410	1	8.5	
		Chlorine Residual	(mg/L as Cl_2) 80420	1	0.0	4
			30 34	35	38	

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Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R2
Mechanical Plants

Project Name
Colborne Water Pollution Control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

Operating Authority
Corporation of the Township of Cramahe

Mailing Address

Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	120000088	10	2021	31	2	R
1 2	3 11	16 19		20 21	22	80

C.P.		Raw Sewage	Parameter Code	Dec	Monthly Average Results	# of Samples
0	3					
12	13		30 34	35	38	

C.P.		Final Effluent		Parameter Code	Dec	Monthly Average Results	# of Samples
0	4						
12	13	Alkalinity, Total	(mg/L)	00051	4		
		Conductivity 25°C	(µS/cm)	91004	4		
		E. Coli	(CT/100ml)	91000	4	544.0000	4
		Nitrate, Unfiltered reactive	(mg/L)	00022	4		
		Nitrite, Unfiltered reactive	(mg/L)	00021	4		
		pH		80770	4	7.4000	4
		Temperature, Water	(°C)	80250	4	17.6000	4
		Un-ionized Ammonia	(mg/L)	91012	4	0.0010	4
		Dissolved Oxygen	(mg/L)	00003	4		
		Hydrogen Sulphide	(mg/L)	83008	4		
		CBOD Loading kg/d				3.7400	4
		TSS Loading				7.4900	4
		TP Loading				0.3400	4
		Max pH				7.8000	4
		Min pH				7.4600	4
				30 34	35	38	

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File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000088	11	2021	30	2	R
1 2	3 — 11	16 — 19		20 21	22	80

C.P.		Raw Sewage	Parameter Code	Dec	Monthly Average Results	# of Samples
12	13					
			30 — 34	35	38	

0	4	Final Effluent		Parameter Code	Dec	Monthly Average Results	# of Samples
12	13						
		Alkalinity, Total	(mg/L)	00051	4		
		Conductivity 25°C	(µS/cm)	91004	4		
		E. Coli	(CT/100ml)	91000	4	24.8000	4
		Nitrate, Unfiltered reactive	(mg/L)	00022	4		
		Nitrite, Unfiltered reactive	(mg/L)	00021	4		
		pH		80770	4	7.6000	4
		Temperature, Water	(°C)	80250	4	13.7000	4
		Un-ionized Ammonia	(mg/L)	91012	4	0.0010	4
		Dissolved Oxygen	(mg/L)	00003	4		
		Hydrogen Sulphide	(mg/L)	83008	4		
		CBOD Loading kg/d				2.1800	4
		TSS Loading				8.4300	4
		TP Loading				0.2700	4
		Max pH				7.7000	4
		Min pH				7.5000	4
				30 — 34	35	38	

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46	12000088	11	2021	30	2	R
1 2	3 11	16 19		20 21	22	80

C.P.			Parameter Code	Dec.	Monthly Results	# of Occurrences
01		**Flows**				
12 13		Total Flow	(10³ m³) 50010	3	32.633	
		Average Daily Flow	(10³ m³/d) 50015	3	1.088	
		Maximum Daily Flow	(10³ m³/d) 50020	3	1.492	
			30 34	35	38	
26		**Bypass**				# of Occurrences
12 13		Plant Bypass Volume	(10³ m³) 50026	3	0.000	0
		Duration	(hours) 80563	1	0.0	
		Secondary Bypass Volume	(10³ m³) 50040	3	0.000	0
		Duration	(hours) 80565	1	0.0	
			30 34	35	38	
03		**Raw Sewage**				# of Samples
12 13		BOD_5	(mg/L) 00001	0	90	4
		Suspended Solids	(mg/L) 00006	0	104	4
		TKN	(mg/L) 00020	2	24.20	4
		Total Phosphorus	(mg/L) 00033	1	2.4	4
			30 34	35	38	
04		**Final Effluent**				
12 13		BOD_5	(mg/L) 00001	1	0.0	0
		$CBOD_5$	(mg/L) 00002	1	2.0	4
		Suspended Solids	(mg/L) 00006	1	7.7	4
		Ammonia + Ammonium	(mg/L) 00019	2	0.10	4
		TKN	(mg/L) 00020	2	0.00	0
		Total Phosphorus	(mg/L) 00033	2	0.25	4
			30 34	35	38	
07		**Disinfection**				
12 13		Chlorine Used	(kg as Cl_2) 50100	1	391.4	
		Chlorine Dosage	(mg/L as Cl_2) 80410	1	11.9	
		Chlorine Residual	(mg/L as Cl_2) 80420	1	0.0	4
			30 34	35	38	

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Mechanical Plants

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File No. (1–2)	Works Number * (3–11)	Data Period * Month (16–17)	Data Period * Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	12000088	12	2021	31	2	R

C.P.			Parameter Code (30–34)	Dec. (35)	Monthly Results (36–38)	# of Occurrences
01	**Flows**					
	Total Flow	(10^3 m^3)	50010	3	40.410	
	Average Daily Flow	(10^3 m^3/d)	50015	3	1.304	
	Maximum Daily Flow	(10^3 m^3/d)	50020	3	2.317	
26	**Bypass**					# of Occurrences
	Plant Bypass Volume	(10^3 m^3)	50026	3	0.000	0
	Duration	(hours)	80563	1	0.0	
	Secondary Bypass Volume	(10^3 m^3)	50040	3	0.000	0
	Duration	(hours)	80565	1	0.0	
03	**Raw Sewage**					# of Samples
	BOD_5	(mg/L)	00001	0	76	5
	Suspended Solids	(mg/L)	00006	0	74	5
	TKN	(mg/L)	00020	2	19.90	5
	Total Phosphorus	(mg/L)	00033	1	2.2	5
04	**Final Effluent**					
	BOD_5	(mg/L)	00001	1	0.0	0
	$CBOD_5$	(mg/L)	00002	1	6.1	5
	Suspended Solids	(mg/L)	00006	1	6.3	5
	Ammonia + Ammonium	(mg/L)	00019	2	0.10	5
	TKN	(mg/L)	00020	2	0.00	0
	Total Phosphorus	(mg/L)	00033	2	0.21	5
07	**Disinfection**					
	Chlorine Used	(kg as Cl_2)	50100	1	394.1	
	Chlorine Dosage	(mg/L as Cl_2)	80410	1	9.7	
	Chlorine Residual	(mg/L as Cl_2)	80420	1	0.0	5

Operator Telephone Number
613-284-7290

Operator Email Address *
jwwc_1@xplornet.ca

Comments
Ted Joynt ORO 613-284-7290 / Phil Kelly OIC (905)-396-0007

Return completed form to:

1. Environmental Monitoring and Reporting Branch, MECP, at WasteWaterReporting@ontario.ca And
2. Your Environmental Officer at your local District/Area MECP Office.

Ministry Contact Email Address *
paul.millar@ontario.ca

Ontario — Ministry of the Environment, Conservation and Parks

Municipal Utility Monitoring Program R2
Mechanical Plants

Project Name
Colborne Water Pollution Control Plant

Facility Address

Unit Number	Street Number	Street Name	PO Box
	1108	Ontario	

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

Operating Authority
Corporation of the Township of Cramahe

Mailing Address

Unit Number	Street Number	Street Name	PO Box
	1	Toronto	357

Municipality/City/Town	Province	Postal Code
Colborne	ON - Ontario	K0K 1S0

File No.	Works Number *	Data Period * Month	Data Period * Year	Days	Discharge Type	Update Code
46	12000088	12	2021	31	2	R
1 2	3 11	16 19		20 21	22	80

C.P.						
0	3	Raw Sewage	Parameter Code	Dec	Monthly Average Results	# of Samples
12	13		30 34	35	38	

		Final Effluent		Parameter Code	Dec	Monthly Average Results	# of Samples
0	4						
12	13	Alkalinity, Total	(mg/L)	00051	4		
		Conductivity 25°C	(µS/cm)	91004	4		
		E. Coli	(CT/100ml)	91000	4	20.7000	5
		Nitrate, Unfiltered reactive	(mg/L)	00022	4		
		Nitrite, Unfiltered reactive	(mg/L)	00021	4		
		pH		80770	4	7.3000	5
		Temperature, Water	(°C)	80250	4	12.0900	5
		Un-ionized Ammonia	(mg/L)	91012	4	0.0010	5
		Dissolved Oxygen	(mg/L)	00003	4		
		Hydrogen Sulphide	(mg/L)	83008	4		
		CBOD Loading kg/d				8.0400	5
		TSS Loading				8.2600	5
		TP Loading				0.2700	5
		Max pH				7.4800	5
		Min pH				7.1600	5
				30 34	35	38	

Operator Telephone Number
613-284-7290

Operator Email Address
jwwc_1@xplornet.ca

Comments
Ted Joynt ORO 613-284-7290/ Phil Kelly OIC (905) 396-0007

Return completed form to:

1. Environmental Monitoring and Reporting Branch, MECP, at WasteWaterReporting@ontario.ca And
2. Your Environmental Officer at your local District/Area MECP Office. (Find your local MECP office: https://www.ontario.ca/environment-and-energy/ministry-environment-district-locator)

Appendix E – Lethality Testing

AquaTox Testing & Consulting Inc.
B-11 Nicholas Beaver Road
Puslinch, ON N0B 2J0
Tel. (519) 763-4412
Fax. (519) 763-4419

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

Work Order : 245430
Sample Number : 68147

SAMPLE IDENTIFICATION

Company :	The Corporation of the Township of Cramahe	Sample Date :	2021-05-27
Location :	Colborne ON	Time Collected :	08:00
Substance :	Final Effluent Sample Station #2	Date Received :	2021-05-28
Sampling Method :	Grab	Time Received :	09:40
Sampled By :	P. Kelly	Temperature on Receipt :	15 °C
Sample Description :	Clear, colourless	Date Tested :	2021-05-28

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	6.7 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	9.8 days
Organism Batch :	Dm21-11	Average Brood Size :	30.7 young
Culture Mortality :	1.3% (previous 7 days)		

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	None	Organisms / Replicate :	10
Pre-aeration Rate :	~30 mL/min/L	Organisms / Test Level :	30
Duration of Pre-Aeration :	0 minutes	Organism Loading Rate :	15.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	None	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Sodium Chloride	Historical Mean LC50 :	6.2 g/L
Date Tested :	2021-05-25	Warning Limits (± 2SD) :	5.8 - 6.6 g/L
LC50 :	6.5 g/L	Organism Batch :	Dm21-11
95% Confidence Limits :	6.2 - 6.8 g/L	Analyst(s) :	AGP
Statistical Method :	Spearman-Kärber		

COMMENTS

All test validity criteria as specified in the test method were satisfied.

Adam Wartman
I am approving this document
2021-06-09
19:03-04:00

Approved By : _____

Project Manager

AQUATOX

TOXICITY TEST REPORT
Daphnia magna
EPS 1/RM/14

Work Order : 245430
Sample Number : 68147

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	7.3	8.6	1591	20	99	330 mg/L

0 HOURS

Date & Time 2021-05-28 13:55
Analyst(s) : JMH (SV)

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
100	A	0	0	7.3	8.6	1591	20	99	330
100	B	0	0	7.3	8.6	1591	20	99	330
100	C	0	0	7.3	8.6	1591	20	99	330
Control	A	0	0	8.5	8.7	768	20	100	240
Control	B	0	0	8.5	8.7	768	20	100	240
Control	C	0	0	8.5	8.7	768	20	100	240

Notes:

24 HOURS

Date & Time 2021-05-29 13:55
Analyst(s) : JMH (MJT)

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature
100	A	–	0	–	–	–	20
100	B	–	0	–	–	–	20
100	C	–	0	–	–	–	20
Control	A	–	0	–	–	–	20
Control	B	–	0	–	–	–	20
Control	C	–	0	–	–	–	20

Notes:

48 HOURS

Date & Time 2021-05-30 13:55
Analyst(s) : JW

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature
100	A	0	0	8.4	8.5	1623	19
100	B	1	0	8.4	8.6	1626	19
100	C	1	0	8.4	8.6	1624	19
Control	A	0	0	8.5	8.7	786	19
Control	B	0	0	8.5	8.7	785	19
Control	C	0	0	8.5	8.6	791	19

Notes:

Number immobile does not include number dead.

"–" = not measured/not required
* adjusted for temperature and barometric pressure

Test Data Reviewed By : KP
Date : 2021-06-01

AquaTox Testing & Consulting Inc.
B-11 Nicholas Beaver Road
Puslinch, ON N0B 2J0
Tel. (519) 763-4412
Fax. (519) 763-4419

TOXICITY TEST REPORT

Rainbow Trout
EPS 1/RM/13

Work Order : 245430
Sample Number : 68147

SAMPLE IDENTIFICATION

Company :	The Corporation of the Township of Cramahe	Sample Date :	2021-05-27
Location :	Colborne ON	Time Collected :	08:00
Substance :	Final Effluent Sample Station #2	Date Received :	2021-05-28
Sampling Method :	Grab	Time Received :	09:40
Sampled By :	P. Kelly	Temperature on Receipt :	15 °C
Sample Description :	Clear, colourless	Date Tested :	2021-05-28

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007 and February 2016 amendments).

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Average Fork Length (± 2 SD) :	36.7 mm (±6.1)
Organism Batch :	T21-13	Range of Fork Lengths :	33 - 44 mm
Control Sample Size :	10	Average Wet Weight (± 2 SD) :	0.44 g (±0.21)
Cumulative stock tank mortality rate	0.2% (previous 7 days)	Range of Wet Weights :	0.34 - 0.68 g
Control organisms showing stress :	0 (at test completion)	Organism Loading Rate :	0.2 g/L

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	19
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 1 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Potassium Chloride	Date Tested :	2021-05-21
Organism Batch :	T21-13	Analyst(s) :	JMH, MDH
LC50 :	3464 mg/L	Historical Mean LC50 :	3932 mg/L
95% Confidence Limits :	3088 - 3883 mg/L	Warning Limits (± 2SD) :	3244 - 4766 mg/L
Statistical Method :	Linear Regression (MLE)		

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Adam Wartman
I am approving
this document
2021-06-09
19:04-04:00

Approved By : _____

Project Manager

Work Order : 245430
Sample Number : 68147

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*
Initial Water Chemistry (100%) :	7.3	8.6	1621	15	91
After 30 min pre-aeration :	7.4	9.1	1623	14	95

0 HOURS

Date & Time 2021-05-28 11:30
Analyst(s) : LL (FS)

Concentration	Dead	Impaired	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
100%	0	0	7.4	9.1	1623	14	95
Control	0	0	8.3	9.4	810	15	99

Notes:

24 HOURS

Date & Time 2021-05-29 11:30
Analyst(s) : LL (FS)

Concentration	Dead	Impaired	pH	Dissolved O_2	Conductivity	Temperature
100%	0	0	–	–	–	15
Control	0	0	–	–	–	15

Notes:

48 HOURS

Date & Time 2021-05-30 11:30
Analyst(s) : MDH

Concentration	Dead	Impaired	pH	Dissolved O_2	Conductivity	Temperature
100%	0	0	–	–	–	15
Control	0	0	–	–	–	15

Notes:

72 HOURS

Date & Time 2021-05-31 11:30
Analyst(s) : JCS (MDH)

Concentration	Dead	Impaired	pH	Dissolved O_2	Conductivity	Temperature
100%	0	0	–	–	–	15
Control	0	0	–	–	–	15

Notes:

96 HOURS

Date & Time 2021-06-01 11:30
Analyst(s) : JMH (FS)

Concentration	Dead	Impaired	pH	Dissolved O_2	Conductivity	Temperature
100%	0	0	8.3	9.4	1620	15
Control	0	0	8.3	9.2	768	15

Notes:

"–" = not measured/not required
Number impaired does not include number dead.
* adjusted for temperature and barometric pressure

Test Data Reviewed By : KP
Date : 2021-06-02

CHAIN OF CUSTODY RECORD

AQUATOX

AquaTox Work Order No: 245430

Shipping Address: AquaTox Testing & Consulting Inc.
11B Nicholas Beaver Road, RR #3
Guelph, Ontario Canada N1H 6H9

Voice: (519) 763-4412 **Fax:** (519) 763-4419

P.O. Number:	
Field Sampler Name (print):	P. Kelly
Signature:	
Affiliation:	OPERATOR
Sample Storage (prior to shipping):	
Custody Relinquished by:	P. Kelly
Date/Time Shipped:	05/27/21

Client:	TOWNSHIP CHAMAHE COCHRANE ONT. | TORONTO RD. P.O. Box 357 K0K 1S0
Phone:	905-396-0007
Fax:	
Contact:	905-396-0007 P. Kelly

Sample Identification					Analyses Requested									Sample Method and Volume		
Date Collected (yyyy-mm-dd)	Time Collected (e.g. 14:30, 24 hr clock)	Sample Name	AquaTox Sample Number	Temp. on arrival	Rainbow Trout Single Concentration	Rainbow Trout LC50	*Daphnia magna* Single Concentration	*Daphnia magna* LC50	Fathead Minnow Survival & Growth	*Ceriodaphnia dubia* Survival & Reproduction	*Lemna minor* Growth	*Pseudokirchneriella subcapitata* Growth	Other (please specify below)	Grab	Composite	# of Containers and Volume (eg. 2 x 1L, 3 x 10L, etc.)
05/27/21	8:00AM	FINAL EFFLUENT SAMPLE STATION 2	68147	15°C	✓		✓							✓		1-2L Poly

For Lab Use Only	
Received By:	CGR / SOW
Date:	2021-05-28
Time:	09:40
Storage Location:	
Storage Temp.(°C):	

Please list any special requests or instructions:

Standard COC rev 2 2009 07 09 TC

Appendix F - Calibration Reports

FIELD SERVICES REPORT

REPORT OF: Mike Humphries
DATE OF SERVICE: July 15, 2021
CUSTOMER / ADDRESS:
Colborne WWTP
Ontario Street
Colborne, Ontario

CONTACT: Phil Kelly
EMAIL:

PURPOSE FOR SERVICE:
Check operation and calibration of OCM III measuring Final Effluent leaving the plant.

SYSTEM CONFIGURATION:
OCM III, REV 3.31
XRS-5C transducer
TS2 temperature sensor

APPLICATION:
Primary element: 6" Parshall Flume
Maximum flow: 6000 m^3/day
Maximum head: 34.0746 cm

OBSERVATIONS / CHANGES MADE:

Totalizer As Found	5522465	m^3
Totalizer As Left	5522485	m^3
Zero As Found	87.430740	cm
Zero As Left	85.407280	cm
Change in Zero	2.023460	cm

OCM Flow Table

Head Applied (m)	Head Displayed (m)	Error (%)	Calculated Flow (m^3/d)	Flow Displayed (m^3/d)	Error (%)	Calculated MA Output	Measured mA Output	Error (%)
0.00	0.0000	0.00	0.00	0.00	0.00	4.00	4.00	0.00
0.10	0.1002	0.20	865	865	0.02	6.31	6.31	0.06
0.20	0.2003	0.15	2585	2588	0.10	10.89	10.90	0.05
0.30	0.3009	0.30	4906	4920	0.28	17.08	17.13	0.27
0.340746	0.3408	0.02	6000	5995	-0.08	20.00	19.98	-0.10

CONCLUSIONS / RECOMMENDATIONS:
OCM III is functioning as expected giving good accurate results.

FRANKLIN EMPIRE INC

OPEN CHANNEL METER III

USER: Colborne WWTP

SERIAL #:

LOCATION: Effluent

TAG #: Final

Par	As found	As Left	Description	Par	As found	As left	Description
0	0		Language	U0	1.58		
1	0		Dimensional units	U1			
2	0		Temperature units	U2			
3	0		Primary element	U3			
4	1		Calculation method	U4			
5	7		Units flow rate	F 4	X	OK	Time
6	6000		Flow at max head	F 5	OK		Date
7	34.0746		Height of max head	F 6	3.31		Eprom #
8	0		Volts in at zero velocity	F 11			Totalizer master reset
9	0		Velocity @ 5 volts in	D0	0		Head
10			Velocity @ max flow	D1	0		Flow rate
11			N/a	D2	734483		Short totalizer *
12			N/a	D3	5724	C	Flow rate maximum
13			Display damping	D4	0	C	Flow rate minimum
14			Display lighting	D5	26.96		Temperature
15	1		Relay 1 assignment	D6	34.74	C	Temperature max.
16			Relay 1 high setpoint	D7	-16.75	C	Temperature min.
17			Relay 1 low setpoint	D8			Velocity
18			Relay 2 assignment	D9	85		Target range
19			Relay 2 high setpoint	D10	4.00		mA output
20			Relay 2 low setpoint	D11			DC volts internal
21			Relay 3 assignment	D12			Velocity volts
22			Relay 3 high setpoint	D13			Auxiliary input volts
23			Relay 3 low setpoint	D14	8739		Temperature sensor ohms
24			mA assignment	D15			Self test checksum
25			Custom mA	D16	15	C	Restarts
26			Span mA	D17	0		Exceptions
27	30		Damping mA (sec)	D18	100		Echos
28			Emulator tracking mA o/p	A0			Head point 1
29	60		Fail-safe timer (sec)	A1			Flow point 1
30			Fail-safe analog mode	A2			Head point 2
31			Failsafe mA (default)	A3			Flow point 2
32	3		Totalizer multiplier	A4			Head point 3
33	2		Display flow-rate dec point #	A5			Flow point 3
34			Printer mode	A6			Head point 4
35			Printer timing	A7			Flow point 4
36			Measurement interval	A8			Head point 5
37	5		Serial data rate (baud)	A9			Flow point 5
38			Site #	A10			Head point 6
39	2		Data logging rate	A11			Flow point 6
40			Log rapid setpoint	A12			Head point 7
41			Log normal set point	A13			Flow point 7
42			Head determination	A14			Head point 8
43			Volts in for zero head	A15			Flow point 8
44			Head @ 5 volts in	A16			Head point 9
45	0.5		Low cutoff head	A17			Flow point 9
46	87.43074	85.40728	Range @ zero head	A18			Head point 10
47	50		Blanking distance	A19			Flow point 10
				A20			Head point 11
				A21			Flow point 11

FIELD SERVICES REPORT

REPORT OF: Mike Humphries
DATE OF SERVICE: July 15, 2021
CUSTOMER / ADDRESS:
Colborne WWTP
Ontario Street
Colborne, Ontario

CONTACT: Phil Kelly
EMAIL:

PURPOSE FOR SERVICE:
Check operation and calibration of OCM III on Raw Influent coming into Plant.

SYSTEM CONFIGURATION:
OCM III, REV 3.31
XRS-5C transducer
TS2 temperature sensor

APPLICATION:
Primary element: 6" Parshall Flume
Maximum flow: 6000 m³/day
Maximum head: 34.0746 cm

OBSERVATIONS / CHANGES MADE:

Totalizer As Found	2563399	m^3
Totalizer As Left	0	m^3
Zero As Found	66.282270	cm
Zero As Left	65.577360	cm
Change in Zero	0.704910	cm

OCM Flow Table

Head Applied (m)	Head Displayed (m)	Error (%)	Calculated Flow (m^3/d)	Flow Displayed (m^3/d)	Error (%)	Calculated MA Output	Measured mA Output	Error (%)
0.00	0.0000	0.00	0.00	0.00	0.00	4.00	4.00	0.00
0.10	0.1000	0.00	865	865	0.02	6.31	6.30	-0.10
0.20	0.1996	-0.20	2585	2581	-0.17	10.89	10.87	-0.23
0.30	0.2989	-0.37	4906	4888	-0.38	17.08	17.02	-0.37
0.34	0.3411	0.10	6000	6011	0.18	20.00	20.02	0.10

CONCLUSIONS / RECOMMENDATIONS:
OCM III malfunctioned during testing and required replacement (FE supplied used).
OCM III is now functioning as expected giving good accurate results.

FRANKLIN EMPIRE INC

OPEN CHANNEL METER III

USER: Colborne WWTP **SERIAL #:**

LOCATION: Inlet **TAG #:** Raw

Par	As found	As Left	Description	Par	As found	As left	Description
0	0		Language	**U0**	1.58		
1	0		Dimensional units	**U1**			
2	0		Temperature units	**U2**			
3	0		Primary element	**U3**			
4	1		Calculation method	**U4**			
5	7		Units flow rate	**F 4**	X	OK	Time
6	6000		Flow at max head	**F 5**	X	OK	Date
7	34.0746		Height of max head	**F 6**	3.32		Eprom #
8	0		Volts in at zero velocity	**F 11**			Totalizer master reset
9	0		Velocity @ 5 volts in	**D0**	0		Head
10			Velocity @ max flow	**D1**	0		Flow rate
11			N/a	**D2**	960971		Short totalizer *
12			N/a	**D3**	6654	C	Flow rate maximum
13			Display damping	**D4**	0	C	Flow rate minimum
14			Display lighting	**D5**	25.33		Temperature
15	1		Relay 1 assignment	**D6**	36.52	C	Temperature max.
16			Relay 1 high setpoint	**D7**	-18.52	C	Temperature min.
17			Relay 1 low setpoint	**D8**			Velocity
18			Relay 2 assignment	**D9**	65		Target range
19			Relay 2 high setpoint	**D10**	4.00		mA output
20			Relay 2 low setpoint	**D11**			DC volts internal
21			Relay 3 assignment	**D12**			Velocity volts
22			Relay 3 high setpoint	**D13**			Auxiliary input volts
23			Relay 3 low setpoint	**D14**	8957		Temperature sensor ohms
24			mA assignment	**D15**			Self test checksum
25			Custom mA	**D16**	15	C	Restarts
26			Span mA	**D17**	0		Exceptions
27	30		Damping mA (sec)	**D18**	100		Echos
28			Emulator tracking mA o/p	**A0**			Head point 1
29	60		Fail-safe timer (sec)	**A1**			Flow point 1
30			Fail-safe analog mode	**A2**			Head point 2
31			Failsafe mA (default)	**A3**			Flow point 2
32	3		Totalizer multiplier	**A4**			Head point 3
33	2		Display flow-rate dec point #	**A5**			Flow point 3
34			Printer mode	**A6**			Head point 4
35			Printer timing	**A7**			Flow point 4
36			Measurement interval	**A8**			Head point 5
37	5		Serial data rate (baud)	**A9**			Flow point 5
38			Site #	**A10**			Head point 6
39	2		Data logging rate	**A11**			Flow point 6
40			Log rapid setpoint	**A12**			Head point 7
41			Log normal set point	**A13**			Flow point 7
42			Head determination	**A14**			Head point 8
43			Volts in for zero head	**A15**			Flow point 8
44			Head @ 5 volts in	**A16**			Head point 9
45	0.5		Low cutoff head	**A17**			Flow point 9
46	66.28227	65.57736	Range @ zero head	**A18**			Head point 10
47	30.48264		Blanking distance	**A19**			Flow point 10
				A20			Head point 11
				A21			Flow point 11

Flowmeter Verification Certificate Transmitter

Colborne	WW header to Lake
Customer	Plant

Order code	Tag Name
PROMAG 53 P DN350	0.9786 - 0.9786
Device type	K-Factor
EA095116000	-13
Serial number	Zero point
V2.03.00	V1.05.03
Software Version Transmitter	Software Version I/O-Module
16.09.2020	15:14
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	**Simubox Details**
550149	8781637
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
04/2020	04/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. [1)]

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

Endress+Hauser
People for Process Automation

FieldCheck - Result Tab Transmitter

Customer	**Colborne**	Plant	**WW header to Lake**
Order code		Tag Name	**--------**
Device type	**PROMAG 53 P DN350**	K-Factor	**0.9786 - 0.9786**
Serial number	**EA095116000**	Zero point	**-13**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.05.03**
Verification date	**16.09.2020**	Verification time	**15:14**

Verification Flow end value (100 %): 384.845 l/s
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	19.242 l/s (5%)	1.50 %	-0.58 %
✓		38.485 l/s (10.0%)	1.00 %	-0.01 %
✓		192.424 l/s (50.0%)	0.60 %	0.01 %
✓		384.846 l/s (100%)	0.55 %	0.04 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.004 mA
✓		4.800 mA (5%)	0.05 mA	0.003 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.011 mA
✓		12.000 mA (50.0%)	0.05 mA	0.003 mA
✓		20.000 mA (100%)	0.05 mA	0.007 mA
–	Pulse Output 1	---	---	---
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	29.600 ms	0.000..52.500 ms	30.625 ms
✓	Coil Curr. Stability		---	---
✓	Electrode Integrity	mV	0.0..300.001 mV	9.746 mV

Legend of symbols

✓	✘	–	?	!
Passed	Failed	not tested	not testable	Attention

Appendix G- Bypass Report

Colborne WWTP Quarterly Bypass and Plant Overflow Report 2017

This report is submitted to fufill requirements of ECA 6014-9Y7HRH Section 4 (3)

Plant Works # 120000088

Quarter	Event #	Date	Volume	Duration	Reason/Cause	Treatment	Disinfection
			m^3	hr			
Feb-14	N/A	N/A	N/A	N/A	No bypass events	N/A	N/A
May-15	N/A	N/A	N/A	N/A	No bypass events	N/A	N/A
Aug-14	N/A	N/A	N/A	N/A	No bypass events	N/A	N/A
Nov-15	N/A	N/A	N/A	N/A	No bypass events	N/A	N/A

The plant has a peak flow anttenuation pond to which some flow is diverted during high flows and directed back for treatment as inflow diminishes.

Appendix H- Operators Licensing

WASTEWATER OPERATOR LICENCE / PERMIS D'EXPLOITANT DE RESEAU D'EGOUT

EDWARD A. JOYNT

has met the requirements under Ontario Regulation 129/04 made under the Ontario Water Resources Act, 1990 for the Wastewater Operator Licensing Program. / a satisfait aux exigences en vertu du Reglement de l'Ontario 129/04 pris en application de la Loi de 1990 sur les ressources en eau de l'Ontario du Programme de delivrance des permis d'exploitant de reseau d'egout.

WASTEWATER TREATMENT FACILITY
INSTALLATION DE TRAITEMENT DES EAUX USÉES

CLASS/CATEGORIE 4

Expiry Date: *Date d'expiration:*	Licence No. *Permis n°*
February 28, 2023	**13359**

C 42354

Director
Directeur(trice)

Ontario

WASTEWATER OPERATOR LICENCE / PERMIS D'EXPLOITANT DE RESEAU D'EGOUT

EDWARD A. JOYNT

has met the requirements under Ontario Regulation 129/04 made under the Ontario Water Resources Act, 1990 for the Wastewater Operator Licensing Program. / a satisfait aux exigences en vertu du Reglement de l'Ontario 129/04 pris en application de la Loi de 1990 sur les ressources en eau de l'Ontario du Programme de delivrance des permis d'exploitant de reseau d'egout.

WASTEWATER COLLECTION FACILITY
INSTALLATION DE COLLECTE DES EAUX USÉES

CLASS/CATEGORIE 2

Expiry Date:
Date d'expiration: **February 29, 2024**

17609 Licence No.
Permis n°

C 51029

Director
Directeur(trice)

Ontario

WASTEWATER OPERATOR LICENCE / PERMIS D'EXPLOITANT DE RESEAU D'EGOUT

PHILIP B. KELLY

has met the requirements under Ontario Regulation 129/04 made under the Ontario Water Resources Act, 1990 for the Wastewater Operator Licensing Program. / a satisfait aux exigences en vertu du Reglement de l'Ontario 129/04 pris en application de la Loi de 1990 sur les ressources en eau de l'Ontario du Programme de delivrance des permis d'exploitant de reseau d'egout.

WASTEWATER TREATMENT FACILITY
INSTALLATION DE TRAITEMENT DES EAUX USÉES

CLASS/CATEGORIE 1

Expiry Date: / *Date d'expiration:* **September 30, 2022**

Licence No. / *Permis n°* **67307**

C 46186

Director
Directeur(trice)

Ontario

WASTEWATER OPERATOR LICENCE / PERMIS D'EXPLOITANT DE RESEAU D'EGOUT

ANDREW W. HARPER

has met the requirements under Ontario Regulation 129/04 made under the Ontario Water Resources Act, 1990 for the Wastewater Operator Licensing Program. / a satisfait aux exigences en vertu du Reglement de l'Ontario 129/04 pris en application de la Loi de 1990 sur les ressources en eau de l'Ontario du Programme de delivrance des permis d'exploitant de reseau d'egout.

WASTEWATER TREATMENT FACILITY
INSTALLATION DE TRAITEMENT DES EAUX USÉES

OPERATOR-IN-TRAINING/APPRENTI(E)-OPÉRATEUR(TRICE)

Expiry Date: *Date d'expiration:*	**November 30, 2023**	**OT99102**	Licence No. *Permis nº*

C 47581

Director
Directeur(trice)

Ontario

APPENDIX I Sampling Schedule 2021

Sampling Schedule D

Influent - Influent sampling point Inlet Works

Parameters	Sample Type	Minimum Frequency
BOD5	8 hour composite	Monthly
Total Suspended Solids	8 hour composite	Monthly
Total Phosphorus	8 hour composite	Monthly
Total Kjeldahl Nitrogen	8 hour composite	Monthly

Imported Sewage - Imported Sewage Receiving Station

Parameters	Sample Type	Minimum Frequency
BOD5	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorus	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly

Loading Limits

Final Effluent Parameter	Averaging Calculator	Limit (maximum unless otherwise indicated)
CBOD5	Monthly Average Daily Effluent Loading	43.8 kg/d
Total Suspended Solids	Monthly Average Daily Effluent Loading	43.8 kg/d
Total Phosphorus	Monthly Average Daily Effluent Loading	1.2 kg/d

Final Effluent Sampling Points

Parameters	Sample Type	Minimum Frequency
CBOD5	8 hour composite	Weekly
Total Suspended Solids	8 hour composite	Weekly
Total Phosphorus	8 hour composite	Weekly
Total Ammonia Nitrogen	8 hour composite	Weekly
Total Residual Chlorine	Grab	Weekly
E. coli	Grab	Weekly
Acute Lethality to Rainbow Trout and Daphnia magna	Grab	Quarter
pH*	Grab	Weekly
Temperature*	Grab	Weekly

*pH and temperature of the Final Effluent 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 "Ontario's Provincial Water Quality Objectives" dated July 1994, as amended.

APPENDIX J Reserved Capacity as of December 31, 2021

CRAMAHE
It's In Our Nature

REPORT
Public Works

Meeting: Committee of the Whole

Date: February 8, 2022

Report No.: PW-03-22

RESOLUTION NO:_____ BY-LAW NO: _____

Subject: Wastewater Treatment Plant Uncommitted Reserve Capacity

Recommendation(s):

BE IT RESOLVED THAT Committee of the Whole receive the Wastewater Treatment Plant Uncommitted Reserve Capacity Report PW-03-22, for information.

Background:

The previous report on uncommitted reserve capacity was presented at Council for information on May 11, 2021 (attached for reference). Please note some of the variable factors have changed. This report will provide an updated look at the Wastewater Treatment Plant Uncommitted Reserve Capacity

These variable factors include the following items:

- The 3-year average daily flow is now 1034 m3/d using effluent meter (FIT-615))
- The 3-year average for daily flow (m3/day) have been improving from years past.
- Township staff have completed several repairs on the sanitary collections system.

As a result of the following changes the uncommitted hydraulic reserve capacity has been recalculated.

Staff Comments:

The Average day flow from Meter FIT615:

2019 = 1128.68 m^3
2020 = 1028.00 m^3
2021 = 944.32 m^3

The 3-year average for the Average day flow = 1,033.67 m^3

The uncommitted hydraulic reserve capacity is calculated by using the following formula:

Cu=Cr-([L*F*P]/H)

Cu = Uncommitted Hydraulic Reserve Capacity (m3/d).
Cr = Hydraulic Reserve Capacity (m3/d).
L = Number of unconnected approved lots
H = Number of Households or Residential connections
P = Existing Connected Population
F = Average day flow per capita(m3/capita/d)

What Populates The Formula

Cr = Hydraulic Reserve Capacity (m3/d).

Cr = WWTP capacity (m3/day) – 3-year average for daily use (m3/day)

Cr =(80% Capacity of 1750 = 1400)- 1034
Cr = 366 (m3/day)

Cr=(85% Capacity of 1750 =1488)-1034
CR=454 (m3/day)

L = Number of Unconnected Approved Lots

Foxtail Ridge Phase 1 & 2	= (102-44)
	= 58 Lots
McDonald Homes	= 12 Lots
Residential Infill (Victoria/Division)	= 12 Lots
Ontario St Infill	= 2 Lots
Church St.	=16 Lots
L = 100 Lots	

H = Number of Households or Residential connections

Existing residential connections = 784 plus 44 (Phase 1 of Foxtail)

H = 828 Lots

P = Existing Connected Population

P = Number of Residential Connections* Population per household (Census)
P = 828*2.3

P = 1905

F = Average day flow per capita(m3/capita/d)

F = 3-year average for daily use (m3/day)/ Existing population (P)
F = 1034/1905

F = 0.5428

Cu = Uncommitted Hydraulic Reserve Capacity (m3/d)

Use 80% of rated Capacity
Cu=Cr-([L*F*P]/H)
Cu = 366-([100*0. 5428*1905]/828)
Cu = 366-125

Cu =241 (m3/day)

Use 85% of rated Capacity
Cu = Cr-([L*F*P]/H)
Cu = 454-([100*0.5428*1905]/828)
Cu = 454-125

Cu = 329 (m3/day)

Additional Available Connections

Additional Lots = Uncommitted Hydraulic Reserve (Cu)/(Population per Lot* (MOECC Rates m3/d)

Note: MOECC provides a range for wastewater usage per person between (0.225 m3/d to 0.45 m3/d) for this calculation we used the midpoint of the range of 3.4 m3/d

80% Capacity Lots = 241 /(2.3*0.34 m3/d)
= 241/0.782

Use 80% of rated Capacity
Available Connections = **308 Lots**

85% Capacity Lots = 329/(2.3*0.34)
= 329/0.782

Use 85% of rated Capacity
Available Connections **= 421 Lots**

Financial Implications:

N/A

Concluding Comments:

In conclusion, the calculation above shows that there are 308 available residential connections (lots) to reach 80% of the rated capacity for the Colborne Wastewater System at the time of writing this report.

There are many variables that could change the capacity of the Wastewater Treatment Plant.

These factors include:

- Changes to the 3-year average for daily flow
- The number of connected residential lots.
- The number of approved unconnected lots
- Population
- Upgrades to the Wastewater treatment plant.

Each time one of these factors change, the uncommitted hydraulic reserve capacity will need to be recalculated using the calculation in this report.

Consultation:

Contracted ORO, Operator in Charge

Submitted by: _____
Dave MacPherson, C.E.T., Manager of Public Works

Reviewed by: _____
Mark MacDonald, Acting CAO

Report Approval Details

Document Title:	2022 Wastewater Treatment Plant Uncommitted Reserve Capacity - PW-03-22.docx
Attachments:	- PW-13-21 Wastewater Treatment Plant Uncommitted Reserve Capacity.pdf
Final Approval Date:	Jan 31, 2022