

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 6883-C9VQQX
Issue Date: January 31, 2022

Gay Lea Foods Co-operative Limited
11301 Highway #62 North
Madoc, Ontario
K0K 2K0

Site Location: Ivanhoe Cheese Plant
11301 Highway #62 North
Municipality of Centre Hastings, County of Hastings

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:

sewage Works for the treatment and subsurface disposal of industrial process wastewater consisting of washwater from cheese processing operations and whey permeate from a whey concentration process, rated at a total maximum design capacity of 104,000 Litres per day (L/day) (for the treatment of 45,500 L/day of washwater and 58,500 L/day of whey permeate), serving the Ivanhoe Cheese Plant located in the Municipality of Centre Hastings, County of Hastings, consisting of the following:

PROPOSED WORKS

upgrades to the existing Wastewater Treatment Plant to provide the additional treatment capacity of 58,500 L/day of a reverse osmosis permeate from the whey concentration process, consisting of the following:

- one (1) two-stage Reverse Osmosis (RO) system to concentrate whey from 6% solids to 20% solids, having a design flow rate of 200 L/min, complete with high pressure and low pressure alarms and a 227 L balance tank, a 190 L concentrate tank, one (1) feed pump and two (2) booster pumps to maintain constant flow of cool whey through Thin Film Composite (TFC) sanitary reverse osmosis membranes, discharging the RO permeate at a maximum rate of 200 L/min to a new RO permeate balancing tank;
- one (1) new RO permeate balancing tank, having a working capacity of 36,000 L, complete with high level alarms and a submersible pump discharging to the existing modified aeration tank;
- one (1) existing modified aeration tank having a working capacity of 133,000 L, housing two (2) existing submersible pumps (one (1) duty and one (1) stand-by), each pump rated at 2.5 L/s at a Total Dynamic Head

(TDH) of 6 m and two (2) new submersible membrane feed pumps (one (1) duty and one (1) stand-by), each pump rated at 4.5 L/s at a TDH of 10 m, complete with the existing high and low-level controls and a new coagulant injection system designed to improve performance and reduce the amount of coagulant required for phosphorus removal, discharging mixed liquor to one (1) existing membrane filtration system and one (1) new membrane filtration system;

- one (1) new membrane filtration system located in a 2.4 m by 12.2 m by 2.9 m above ground container, consisting of a stainless steel membrane tank housing one (1) MB3-4 membrane module, complete with stainless steel housing, medium-bubble diffused aerators and permeate piping, discharging by gravity the mixed liquor back to the existing aeration tank and the clean permeate via a 150 mm diameter gravity sewer to a new effluent pump station;
- one (1) chemical metering pump for dosing an alkaline solution for pH correction, complete with spill containment rated for a 208 L chemical drum;

upgrades to the existing subsurface disposal system designed to provide additional subsurface disposal capacity for the treated whey permeate from the whey concentration process, rated at a total maximum design capacity of 109,500 L/day, consisting of the following:

- one (1) re-rated raised leaching bed located in the western portion of the site, rated at a maximum design capacity of 55,500 L/day, consisting of two (2) lobes of distribution piping, each lobe consisting of four (4) cells, each cell consisting of eight (8) runs of 30 m long absorption trenches for a total length of 240 m per cell, 960 m per lobe and 1,920 m in the leaching bed of 75 mm diameter perforated distribution piping installed in clear stone trenches, with the bottom of the absorption trenches at least 900 mm at all points above the high groundwater table, rock or soil with a percolation time more than 50 min/cm, constructed within a 600 mm thick layer of imported sand fill having a percolation time (T) of 4 min/cm to 10 min/cm and an expanded contact area of 1,885 m², complete with a minimum 300 mm thick imported sand fill mantle having a percolation time (T) of 4 min/cm to 10 min/cm and a total contact area of 5,145 m² and extending a minimum of 15 m beyond the outermost distribution pipes in any direction which the effluent will move laterally in the soil away from the leaching bed, all in accordance with the OBC requirements;
- one (1) new one-compartment precast concrete effluent pump station, receiving effluent from the new membrane filtration system, having a minimum working capacity of 2,000 L, housing two (2) submersible alternating effluent pumps, each pump rated at a minimum of 2 L/day at a TDH of 10 metres and a flow splitter directing effluent to the existing 2,300 L subsurface sewage effluent pump station, complete with an access hatch, liquid level float switches, including a high liquid level audible and visual alarm system, discharging via one (1) 50 mm diameter forcemain delivering up to approximately 58,500 L/day via three (3) distribution boxes to infiltration trenches;
- six (6) approximately 150 m long, 0.6 m wide and 2.0 m wide infiltration trenches, located west of the existing leaching bed, rated at a maximum design capacity of 58,500 L/day, consisting of two (2) cells, each cell having three (3) rows of Diffuser Infiltrator Quick 4 Equalizer 24 Chambers with a total length of distribution piping installed in the chambers of 450 m installed in three (3) - 150 m long runs and complete with 150 mm diameter perforated distribution piping located within the chambers and extending the total length of the chambers, centred at least 5 metres apart, installed within a minimum 300 mm deep layer of approved native backfill, with the bottom of the chambers installed at least 900 mm above the high

groundwater table, rock or soil with a percolation time greater than 50 min/cm, overlying a minimum 150 mm thick layer of clear stone overlying a minimum 100 mm thick layer of imported sand fill having a percolation time (T) of 2 min/cm to 8 min/cm, complete with a 1.4 m deep and 0.6 m wide imported sand fill having a percolation time (T) of less than 5 min/cm trench located below the Infiltrator Quick 4 Equalizer 24 Chambers;

Contingency Subsurface Disposal System

- provisions for future infiltration trenches when deemed necessary to ensure compliance with this Approval consisting of two (2) approximately 150 m long, 0.6 m wide and 2.0 m wide infiltration trenches, located west of the existing leaching bed, consisting of two (2) cells, each cell having one (1) row of Diffuser Infiltrator Quick 4 Equalizer 24 Chambers with a total length of distribution piping installed in the chambers of 150 m installed in one (1) - 150 m long run and complete with 150 mm diameter perforated distribution piping located within the chambers and extending the total length of the chambers, centred at least 5 metres apart, installed within a minimum 300 mm deep layer of approved native backfill, with the bottom of the chambers installed at least 900 mm above the high groundwater table, rock or soil with a percolation time greater than 50 min/cm, overlying a minimum 150 mm thick layer of clear stone overlying a minimum 100 mm thick layer of imported sand fill having a percolation time (T) of 2 min/cm to 8 min/cm, complete with a 1.4 m deep and 0.6 m wide imported sand fill having a percolation time (T) of less than 5 min/cm trench located below the Infiltrator Quick 4 Equalizer 24 Chambers;

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

EXISTING WORKS

sewage works for the collection, transmission, treatment and subsurface disposal of industrial wastewater, based on a maximum daily flow of 51,000 L/day to deliver 42,000 L/day to the subsurface disposal system to service the Ivanhoe Cheese Plant located in Municipality of Centre Hastings, County of Hastings, consisting of the following:

Washwater Lift Pump Station

- one (1) fibreglass lift station having a volume of 22,700 L, equipped with one sewage pump (1/2 hp Myers or equivalent), rated at 2.5 L/s at a TDH of 6 m, float controlled, discharging raw washwater to the Sewage Treatment Plant described below;

Sewage Treatment Plant

one (1) Sewage Treatment Plant rated at a maximum capacity of 45,500 L/day, consisting of the following:

Fine Screen Filtration

- a rotary screen basket to remove particles greater than 8 mm discharging via a single 100 mm diameter PVC pipe by gravity to the equalization tank described below;

Equalization Tank

- one (1) in-ground precast concrete tank with a capacity of 45,500 L, complete with a high level alarm

switch, equipped with aeration provided by coarse bubble air diffusers, duplex pumps (one (1) duty and one (1) stand-by) rated at 2.5 L/s at a TDH of 6 m, discharging effluent on a time dose basis to the aeration tank described below;

Dissolved Air Flotation (DAF) Clarifier

- one (1) Dissolved Air Flotation (DAF) clarifier system designed to handle a flow rate of 2.27 m³/hr and having the separation chamber's effective surface area of 1.46 m², complete with a sludge handling system discharging to a sludge thickening tank, a floating skimmer system removing the floating sludge layer, an air saturation system and all associated pumps, air supply, piping, fittings and instrument monitoring and control systems, discharging to the existing aeration tank;

Aeration Tank

- one (1) aeration tank with a capacity of 133,000 L, complete with duplex pumps (one (1) duty and one (1) stand-by) rated at 2.5 L/s at a TDH of 6 m, equipped with high and low-level controls, discharging effluent to the stainless steel membrane tanks described below (to be replaced the Proposed Works);

Stainless Steel Membrane Tanks

- two (2) stainless steel membrane tanks containing one MB2-2 Membrane Cassette located in an above grade pre-finished container (2.4 m x 12.2 m x 2.4 m high 'controls' building), each membrane cassette complete with stainless steel housing; medium-bubble diffused aerators and permeate piping, mixed liquor from the membrane tanks is constantly recycled back to the aeration tank by gravity and clean permeate is discharged to the backwash tank described below;

Backwash Tank

- one (1) 57 L backwash tank discharging effluent by gravity flow to the holding tank described below;

Holding Tank

- one (1) 5,678 L holding tank equipped with a 1 horsepower centrifugal pump discharging effluent to the phosphorous removal plant as described below;

Phosphorous Removal Plant

one (1) phosphorous removal plant rated at a maximum capacity of 45,500 L/s and consisting of the following;

Flow meter

- as the water flows from the holding tank to the neutralization tank it passes through a flow meter which adjusts the daily flow;

Neutralization Tank

- one (1) 700 L stainless steel neutralization tank equipped with a variable speed agitator, alum is automatically dosed into the tank at a metered rate then sodium hydroxide is automatically dosed to neutralize the water to achieve the optimal pH of 7.8, water overflows and gravity feeds the polymer addition tank described below;

Polymer Addition Tank

- one (1) 700 L stainless steel polymer addition tank equipped with a variable speed agitator where polymer is automatically dosed at a metered rate, water and flocculants overflow from this tank onto the filter cloth

media described below;

Filter Cloth Media

- effluent passes through the filter media into a catch basin, the filter cloth self indexes with the collected flocculants and falls into a plastic bin for disposal;

Catch Basin

- effluent passes through another filter media then gravity flows to the pump station described below;

Subsurface Sewage Effluent Pump Station

- one (1) prefabricated sewage pumping station with a volume of 2,300 L, equipped with one (1) set of duplex pumps, each rated at 2.63 L/s at a TDH of 18.8 m, receiving effluent from the sewage treatment system and pumping effluent to each of the two lobes of the raised leaching bed described below;

Raised Leaching Bed

- one (1) raised leaching bed located to the west of the site designed and operated at a maximum daily flow of 42,000 L/day, having a total distribution pipe length of 1,920 m, consisting of two lobes, each of which will consist of 960 m of distribution pipe configured into four (4) cells of eight (8) distribution runs of 30 m length, constructed into 60 cm of imported sand fill having an expanded contact area of 1885 m², placed over a mantle of imported sand fill of 30 cm thickness with a total area of 5,145 m² with a percolation rate (T) of between 4 and 10 min/cm (to be replaced by the Proposed Works);

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

all in accordance with 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. "Approval" means this entire Environmental Compliance Approval and any Schedules attached to it;
3. "BOD₅" (also known as TBOD₅) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demands;
4. "CBOD₅" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;
5. "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;

6. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Works is geographically located;
7. "EPA" means the *Environmental Protection Act* , R.S.O. 1990, c.E.19;
8. "Existing Works" means those portions of the Works included in the Approval that have been constructed previously;
9. "Final Effluent" means effluent that is discharged to the environment through the approved effluent disposal facilities, that are required to meet the compliance limits stipulated in the Approval for the Sewage Treatment Plant at the Final Effluent sampling point(s);
10. "Grab Sample" means an individual sample of at least 1000 millilitres collected in an appropriate container at a randomly selected time over a period of time not exceeding 15 minutes;
11. "Influent" means flows to the Sewage Treatment Plant from the collection system;
12. "Licensed Engineering Practitioner" means a person who holds a licence, limited licence or temporary licence under the *Professional Engineers Act*, R.S.O. 1990, c. P.28;
13. "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;
14. "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;
15. "Normal Operating Condition" means the condition when all unit process(es), in a treatment train is operating within its design capacity;
16. "Operating Agency" means the Owner, person or the entity that is authorized by the Owner for the management, operation, maintenance, or alteration of the Works in accordance with this Approval;
17. "Owner" means Gay Lea Foods Co-operative Limited, including any successors and assignees;
18. "OWRA" means the *Ontario Water Resources Act* , R.S.O. 1990, c. O.40;
19. "Proposed Works" means those portions of the Works included in the Approval that are under construction or to be constructed;
20. "Sewage Treatment Plant" means all the facilities related to sewage treatment within the sewage treatment plant site excluding the Final Effluent disposal facilities;
21. "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;

22. "Works" means the approved sewage works, and includes Proposed Works, 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 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.
2. 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.
- 3. 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.
- 4. The Owner shall ensure that all communications made pursuant to this condition refer to the environmental compliance approval number.

3. CONSTRUCTION OF PROPOSED WORKS

- 1. All Proposed Works in this Approval shall be constructed and installed and must commence operation within five (5) years of issuance of this Approval, after which time the Approval ceases to apply in respect of any portions of the Works not in operation. In the event that the construction, installation and/or operation of any portion of the Proposed Works is anticipated to be delayed beyond the time period stipulated, the Owner shall submit to the Director an application to amend the Approval to extend this time period, at least six (6) months prior to the end of the period. The amendment application shall include the reason(s) for the delay and whether there is any design change(s).
- 2. The Owner shall ensure that the construction of the Proposed Works is supervised by a Licensed Engineering Practitioner.
- 3. Upon completion of construction of the Proposed Works, the Owner shall prepare and submit a written statement to the District Manager, certified by a Licensed Engineering Practitioner, that the Proposed Works is constructed in accordance with this Approval.
- 4. One (1) week prior to the commencement of the operation of the Proposed Works, the Owner shall notify the District Manager (in writing) of the pending start-up date.
- 5. Within one (1) year of completion of construction of the Proposed Works, a set of record drawings of the Works shall be prepared or updated. These drawings 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.
- 6. The Owner shall ensure that the treatment technologies are installed in accordance with the manufacturer's installation manual.
- 7. The Owner shall ensure that the Works are constructed such that minimum horizontal clearance distances as specified in the OBC are satisfied.
- 8. The Owner shall ensure that an imported soil that is required for construction of any subsurface disposal bed as per this Approval is tested and verified by the Licensed Engineering Practitioner for the percolation time (T) prior to delivering to the site location and the written records are kept at the site.

4. 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 included in Schedule B.

5. GROUNDWATER TRIGGER PARAMETER

1. Within six (6) months of the issuance of this Approval, the Owner shall prepare, and submit for approval by the District Manager, a "Chloride Levels in the unnamed creek Contingency and Remedial Action Plan" describing measures to be taken in case the Chlorine levels in the unnamed creek do not decrease significantly as predicted.
2. Within six (6) months of the issuance of this Approval, the Owner shall prepare, and submit for approval by the District Manager, an "Increase in Chloride Loading in the Groundwater Flow System Contingency and Remedial Action Plan" describing measures to be taken in case the Groundwater Trigger Concentration of 120 mg/L for Chloride is exceeded.
3. The Owner shall design, construct and operate the Works such that the trigger concentration of Chloride listed in the table included in Schedule C in the down-gradient groundwater monitoring wells GW-1, GW-2 and GW-3 are not exceeded.
4. Should any single sample concentration exceed the respective concentration in column 2 of the table included in Schedule C in down-gradient monitoring wells GW-1, GW-2 and GW-3, the Owner shall undertake the following immediately:
 - a. Notify the District Manager of the exceedance;
 - b. Take another sample within a week of receiving the laboratory result to confirm the concentration;
 - c. Take immediate action to identify the source of contamination, including the assessment of the performance of the sewage Works;
 - d. Take immediate action to prevent further exceedance; and
 - e. Implement the approved "Increase in Chloride Loading in the Groundwater Flow System Contingency and Remedial Action Plan" and take appropriate corrective measures based on the understanding of the source of the exceedance.

6. 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 laboratory facilities, adequate staffing and training, including training in all procedures and other requirements of this Approval and the OWRA and relevant regulations made under the OWRA, process controls and alarms and the use of process chemicals and other substances used in the Works.

2. The Owner shall prepare/update 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,
 - f. a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the Spills Action Centre (SAC) and District Manager;
 - g. procedures for receiving, responding and recording public complaints, including recording any followup actions taken.
3. The Owner shall maintain an up to date operations manual and make the manual readily accessible for reference at the Works for the operational life of the Works. Upon request, the Owner shall make the manual available to Ministry staff.
4. The Owner shall maintain a logbook to record the results of all inspections, repair and maintenance undertaken, calibrations, monitoring and spill response or contingency measures undertaken and shall make the logbook available for inspection by Ministry staff. The logbook shall include the following:
 - a. the name of the operator making the entry; and
 - b. the date and results of each inspection, repair, maintenance, calibration, monitoring, spill response and contingency measure.
5. The Owner shall ensure that grass-cutting is maintained regularly over the subsurface disposal beds, and that adequate steps are taken to ensure that the area of the underground works is protected from vehicle traffic.
6. The Owner shall visually inspect the general area where sewage Works are located for break-out once every month.
7. In the event a break-out is observed from a subsurface disposal bed, the Owner shall do the following:

- a. sewage discharge to that subsurface disposal system shall be discontinued;
 - b. the incident shall be immediately reported verbally to the Spills Action Centre (SAC) at (416) 325-3000 or 1-800-268-6060;
 - c. submit a written report to the District Manager within one (1) week of the break-out;
 - d. access to the break-out area shall be restricted until remedial actions are complete;
 - e. during the time remedial actions are taking place the sewage generated at the site shall not be allowed to discharge to the environment; and
 - f. sewage generated at the site shall be safely collected and disposed of through a licensed waste hauler to an approved sewage disposal site.
8. The Owner shall ensure that the Operating Agency possesses the level of training and experience sufficient to allow safe and environmentally sound operation of the Works.
 9. The Owner shall have a valid written agreement with a hauler who is in possession of a Waste Management Systems Approval, for the treatment and disposal of the sludge generated from the Works, at all times during operation of the Works.
 10. The Owner shall ensure that flow of treated effluent discharged into the existing subsurface sewage system does not exceed 55,500 L/day and into the new subsurface sewage system does not exceed 58,500 L/day.
 11. Upon request, the Owner shall make the Inspection Reports available to Ministry staff.

7. 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 2.b.
 - c. definitions for frequency:
 - i. Monthly means once every month; and

- ii. Quarterly means once every three months.
- d. The measurement frequencies specified in Schedule D in respect to any parameter may, after one (1) year of monitoring in accordance with this Condition, be modified by the Director in writing.
2. Samples of groundwater shall be collected from three (3) Monitoring Wells: GW-1, GW-2 and GW-3 (two monitoring wells GW-1 and GW-2 located at the eastern edge of the wetland boundary one monitoring well GW-3 located adjacent to Highway #62) at the sampling frequency and using the sample type specified for each parameter listed in the Groundwater Monitoring Table included in Schedule D.
 3. The Owner may install additional groundwater monitoring wells with the District Manager approval.
 4. Samples of surface water shall be collected upstream and downstream of the existing and new subsurface disposal beds from three (3) Monitoring Stations: SW-1, SW-2A (existing monitoring location) and SW-2B (new monitoring location) at the sampling frequency and using the sample type specified for each parameter listed in the Surface Water Monitoring Table included in Schedule D.
 5. 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; and
 - d. for any parameters not mentioned in the documents referenced in Paragraphs 2.a, 2.b and 2.c, the written approval of the District Manager shall be obtained prior to sampling.
 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. Effluent discharged to the existing subsurface sewage system by flow measuring devices, including but not limited to water/wastewater flow meters, event counters, running time clocks, or electronically controlled dosing; and
 - b. Effluent discharged to the new subsurface sewage system by flow measuring devices, including but not limited to water/wastewater flow meters, event counters, running time clocks, or electronically controlled dosing.
 7. The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and

information related to or resulting from the monitoring activities required by this Approval.

8. 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 Private 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 Licensed Engineering Practitioner 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.

9. REPORTING

1. The Owner shall report to the District Manager orally as soon as possible any exceedence of the

Groundwater Trigger Parameter, and in writing within seven (7) days of non-compliance.

2. In addition to the obligations under Part X of the EPA and O. Reg. 675/98 (Classification and Exemption of Spills and Reporting of Discharges), the Owner shall, within fifteen (15) days of the occurrence of any reportable spill as provided in Part X of the EPA and Ontario Regulation 675/98, 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 a schedule of implementation.
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 in an electronic format 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 monitoring data, and a review of the historical trend of the washwater and reverse osmosis (RO) permeate characteristics and flow rates;
 - b. a summary and interpretation of all flow data and results achieved in not exceeding the maximum daily flow discharged into the subsurface disposal systems;
 - c. a summary and interpretation of all Final Effluent monitoring data, including concentration and flow rates and a comparison to the design objectives in this Approval, including an overview of the success and adequacy of the Works;
 - d. a summary and interpretation of all groundwater monitoring data including shallow groundwater flow direction, interpretation of analytical results and comparison with the Groundwater Trigger Concentration of 120 mg/L for Chloride and the historical trend of the Chloride concentration in the groundwater, including a summary of any corrective measures taken as outlined in the approved "Increase in Chloride Loading in the Groundwater Flow System Contingency and Remedial Action Plan";
 - e. a summary and interpretation of all surface water monitoring data and the historical trend of the Chloride levels in the unnamed creek and the amount and time to the projected decrease of Chlorine levels in the groundwater discharging to the unnamed creek, including a summary of any corrective measures taken as outlined in the approved "Chloride Levels in the unnamed creek Contingency and Remedial Action Plan";
 - f. a summary and description of efforts made and the results achieved in implementing the approved Chloride Mitigation Plan, including recommendations with respect to proposed changes to the Chloride Mitigation Plan;
 - g. a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism

or thing forming part of the Works;

- h. a summary of all operating issues encountered and corrective actions taken;
- i. 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;
- j. a summary of any effluent quality assurance or control measures undertaken;
- k. a summary of the calibration and maintenance carried out on all monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;
- l. 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 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;
- m. a summary of any complaints received and any steps taken to address the complaints;
- n. a summary of all situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;
- o. a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 8, including a report on status of implementation of all modification;
- p. any other information the District Manager requires from time to time.

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

1. Condition 1 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 construction of Proposed Works 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 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.
5. Condition 5 regarding Groundwater Trigger Parameter is imposed to ensure the effluent discharged from the Works to the groundwater meets the Ministry's effluent quality requirements thus minimizing environmental impact on the receiver.
6. Condition 6 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.
7. Condition 7 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.
8. Condition 8 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.
9. Condition 9 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.

SCHEDULE 'A'

1. Environmental Compliance Approval Application submitted by Yazmin Ramirez Avila, B.Sc., M.Sc., Project Manager, The Greer Galloway Group Inc., Consulting Engineers, dated December 23, 2020 and received on January 5, 2021.
2. The design report titled "Hydrogeological Assessment and Design Basis Environmental Compliance Approval (Sewage) for Disposal of Whey Permeate for the Ivanhoe Cheese Factory " dated December 2020, specifications and engineering drawings, all prepared by The Greer Galloway Group Inc., Consulting Engineers.
3. All additional documentation provided by Gay Lea Foods Co-operative Limited and The Greer Galloway Group Inc., Consulting Engineers.
4. Environmental Compliance Approval Application for Industrial Sewage Works submitted by Gay Lea Foods Co-operative Ltd., dated January 30, 2018 and received on February 8, 2018.
5. Environmental Compliance Approval Application for Industrial Sewage Works submitted by Dave Toop, Gay Lea Foods Co-operative Ltd., dated June 12, 2012, together with the design report and supporting information.
6. Final plans and specifications prepared by The Greer Galloway Group Inc. and Lissom Soil & Water Inc.
7. Email Correspondences from John Porritt, P.Geo., The Greer Galloway Group to the Ontario Ministry of the Environment.
8. Surface and groundwater monitoring locations map (Drawing #SP1) provided by John Porritt, P.Geo., The Greer Galloway Group.
9. Environmental Compliance Approval Application for Industrial Sewage Works submitted and signed by Ms. Victoria Cox, Operations Manager, of Gay Lea Foods Co-operative Ltd., dated April 7, 2016, together with the supporting information.

Schedule B

Final Effluent Design Objectives

- 1) Existing Works: Outlet Pipe from the Existing Subsurface Sewage Effluent Pump Station and Upstream from the Existing Leaching Bed; and
- 2) New Works: Outlet Pipe from the New Effluent Pump Station and Upstream from the New Leaching Bed (Equalizer 24 Chamber System)

Final Effluent Parameter	Averaging Calculator	Objective (milligrams per litre unless otherwise indicated)
CBOD5	Annual Average Effluent Concentration	< 10.0 mg/L
Total Suspended Solids	Annual Average Effluent Concentration	< 10.0 mg/L
Total Phosphorus	Annual Average Effluent Concentration	< 1.5 mg/L
Fats, Oil, and Grease	Annual Average Effluent Concentration	< 10.0 mg/L

Schedule C

GROUNDWATER TRIGGER CONCENTRATION

GROUNDWATER MONITORING WELLS GW-1, GW-2 and GW-3

Trigger Parameter	Groundwater Trigger Concentration (milligrams per litre unless otherwise indicated)
Chloride	120 mg/L

Schedule D

MONITORING PROGRAM

INFLUENT

RAW WASHWATER

OUTLET PIPE FROM THE EXISTING WASHWATER LIFT PUMP STATION

Parameters	Sample Type	Minimum Frequency
BOD ₅	Grab	Quarterly
Total Suspended Solids (TSS)	Grab	Quarterly
Total Phosphorus (TP)	Grab	Quarterly
Total Kjeldahl Nitrogen	Grab	Quarterly
Total Ammonia Nitrogen	Grab	Quarterly
Nitrite Nitrogen	Grab	Quarterly
Nitrate Nitrogen	Grab	Quarterly
Chloride (Cl)	Grab	Quarterly
Sodium (Na)	Grab	Quarterly
Magnesium (Mg)	Grab	Quarterly
Calcium (Ca)	Grab	Quarterly
Fats, Oils, Grease	Grab	Quarterly
pH	Grab	Quarterly

REVERSE OSMOSIS (RO) SYSTEM OUTLET PIPE

REVERSE OSMOSIS (RO) PERMEATE

Parameters	Sample Type	Minimum Frequency
BOD ₅	Grab	Monthly
Total Suspended Solids (TSS)	Grab	Monthly
Total Phosphorus (TP)	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly
Total Ammonia Nitrogen	Grab	Monthly
Nitrite Nitrogen	Grab	Monthly
Nitrate Nitrogen	Grab	Monthly
Chloride (Cl)	Grab	Monthly
Sodium (Na)	Grab	Monthly
Magnesium (Mg)	Grab	Monthly
Calcium (Ca)	Grab	Monthly
Fats, Oils, Grease	Grab	Monthly
pH	Grab	Monthly

EFFLUENT

1) Existing Works: Outlet Pipe from the Existing Subsurface Sewage Effluent Pump Station and Upstream from the Existing Leaching Bed; and

2) New Works: Outlet Pipe from the New Effluent Pump Station and Upstream from the New Leaching Bed (Equalizer 24 Chamber System)

Parameters	Sample Type	Minimum Frequency
CBOD ₅	Grab	Monthly
Total Suspended Solids (TSS)	Grab	Monthly
Total Phosphorus (TP)	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly
Total Ammonia Nitrogen	Grab	Monthly
Nitrite Nitrogen	Grab	Monthly
Nitrate Nitrogen	Grab	Monthly
Chloride (Cl)	Grab	Monthly
Sodium (Na)	Grab	Monthly
Magnesium (Mg)	Grab	Monthly
Calcium (Ca)	Grab	Monthly
Fats, Oils, Grease	Grab	Monthly
pH*	Grab	Monthly

*pH of the Effluent shall be determined in the field at the time of sampling for Total Ammonia Nitrogen.

GROUNDWATER MONITORING

GROUNDWATER MONITORING WELLS: GW-1, GW-2 and GW-3 (two monitoring wells GW-1 and GW-2 located at the eastern edge of the wetland boundary one monitoring well GW-3 located adjacent to Highway #62)

Parameters	Sample Type	Minimum Frequency
CBOD ₅	Grab	Monthly
Total Suspended Solids (TSS)	Grab	Monthly
Total Phosphorus (TP)	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly
Total Ammonia Nitrogen	Grab	Monthly
Nitrite Nitrogen	Grab	Monthly
Nitrate Nitrogen	Grab	Monthly
Chloride (Cl)	Grab	Monthly
Sodium (Na)	Grab	Monthly
Magnesium (Mg)	Grab	Monthly
Calcium (Ca)	Grab	Monthly
pH	Grab	Monthly

SURFACE WATER MONITORING

UNNAMED CREEK LOCATED TO THE WEST OF THE CHEESE FACTORY

UPSTREAM AND DOWNSTREAM OF THE EXISTING AND NEW SUBSURFACE DISPOSAL BEDS MONITORING STATIONS: SW-1, SW-2A (EXISTING MONITORING LOCATION) AND SW-2B (NEW MONITORING LOCATION)

Parameters	Sample Type	Minimum Frequency
CBOD ₅	Grab	Monthly (July to October) Quarterly (November to June)
Total Suspended Solids (TSS)	Grab	Monthly (July to October) Quarterly (November to June)
Total Phosphorus (TP)	Grab	Monthly (July to October) Quarterly (November to June)
Total Kjeldahl Nitrogen	Grab	Monthly (July to October) Quarterly (November to June)
Total Ammonia Nitrogen	Grab	Monthly (July to October) Quarterly (November to June)
Nitrite Nitrogen	Grab	Monthly (July to October) Quarterly (November to June)
Nitrate Nitrogen	Grab	Monthly (July to October) Quarterly (November to June)
Chloride (Cl)	Grab	Monthly (July to October) Quarterly (November to June)
Sodium (Na)	Grab	Monthly (July to October) Quarterly (November to June)
Magnesium (Mg)	Grab	Monthly (July to October) Quarterly (November to June)
Calcium (Ca)	Grab	Monthly (July to October) Quarterly (November to June)
Dissolved Oxygen	Grab	Monthly (July to October) Quarterly (November to June)
Conductivity,	Grab	Monthly (July to October) Quarterly (November to June)
field Temperature	Grab	Monthly (July to October) Quarterly (November to June)
field pH	Grab	Monthly (July to October) Quarterly (November to June)
Flow levels	-	Monthly (July to October) Quarterly (November to June)

Schedule E

Limited Operational Flexibility

Protocol for Pre-Authorized Modifications to Private 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 or 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;
- e. Replacement, reconfiguration and modifications to pump suction 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 or 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 or realignment of existing sewers (including pipes and channels), 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 or relocation of loading bays, connect/disconnect hook-up systems and unloading/transferring systems;
 - b. Replacement or relocation of screens, grit removal units and compactors;
 - c. Replacement or relocation of pumps, such as dosing pumps and transfer pumps, valves, piping and appurtenances;
 - d. Replacement or relocation of storage tanks/chambers and spill containment systems;
 - e. Replacement, relocation or installation of flow measurement and sampling equipment.
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 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 of scum removal mechanism, including scum chamber;
- c. Replacement 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 of scum removal mechanism, including scum chamber;
- c. Replacement 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 of chemical storage tanks, provided that the tanks are provided with effective spill containment.

9. Supplementary Treatment Systems

1. Chemical systems

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

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

d. replace 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.



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		
<i>(Insert the ECA's owner, number and issuance date and notice number, which should start with "01" and consecutive numbers thereafter)</i>		
ECA Number	Issuance Date (mm/dd/yy)	Notice number (if applicable)
ECA Owner		Municipality

Part 2: Description of the modifications as part of the Limited Operational Flexibility
<i>(Attach a detailed description of the sewage works)</i>
<p>Description shall include:</p> <ol style="list-style-type: none"> 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						
<p>I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:</p> <ol style="list-style-type: none"> 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. <p>I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate</p>						
<table border="1"> <tr> <td>Name (Print)</td> <td>PEIO License Number</td> </tr> <tr> <td>Signature</td> <td>Date (mm/dd/yy)</td> </tr> <tr> <td colspan="2">Name of Employer</td> </tr> </table>	Name (Print)	PEIO License Number	Signature	Date (mm/dd/yy)	Name of Employer	
Name (Print)	PEIO License Number					
Signature	Date (mm/dd/yy)					
Name of Employer						

Part 4 – Declaration by Owner				
<p>I hereby declare that:</p> <ol style="list-style-type: none"> 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 <i>Environmental Assessment Act</i>. <p>I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate</p>				
<table border="1"> <tr> <td>Name of Owner Representative (Print)</td> <td>Owner representative's title (Print)</td> </tr> <tr> <td>Owner Representative's Signature</td> <td>Date (mm/dd/yy)</td> </tr> </table>	Name of Owner Representative (Print)	Owner representative's title (Print)	Owner Representative's Signature	Date (mm/dd/yy)
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:
- 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;
 - 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;
 - 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;
 - 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:
- Group No Bypass Days (**NBPD**) data and Bypass Days (**BPD**) data during a calendar month separately;
 - 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**;
 - Obtain the “**Total Monthly NBPD Flow**” which is the total amount of Final Effluent discharged on all NBPD during the calendar month;
 - 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:

$$\frac{[(\text{Monthly Average NBPD Effluent Concentration} \times \text{Total Monthly NBPD Flow}) + (\text{Monthly Average BPD Effluent Concentration} \times \text{Total Monthly BPD Flow})]}{(\text{Total Monthly NBPD Flow} + \text{Total Monthly BPD Flow})}$$

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:

$$[(\text{Annual Average NBPD Effluent Concentration} \times \text{Total Annual NBPD Flow}) + (\text{Annual Average BPD Effluent Concentration} \times \text{Total Annual BPD Flow})] \div (\text{Total Annual NBPD Flow} + \text{Total Annual BPD Flow})$$

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	<i>E. coli</i> 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.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 6700-B2XLPY issued on August 31, 2018.

In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me, the Ontario Land Tribunal and in accordance with Section 47 of the *Environmental Bill of Rights*, 1993, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") 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 available 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:

Registrar*
Ontario Land Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5
OLT.Registrar@ontario.ca

and

The Minister of the Environment,
Conservation and Parks
777 Bay Street, 5th Floor
Toronto, Ontario
M7A 2J3

and

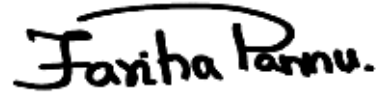
The Director appointed for the purposes of
Part II.1 of the *Environmental Protection Act*
Ministry of the Environment,
Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.gov.on.ca**

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

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

DATED AT TORONTO this 31st day of January, 2022



Fariha Pannu, P.Eng.

Director

appointed for the purposes of Part II.1 of the
Environmental Protection Act

KC/

c: Area Manager, MECP Belleville Area Office

c: District Manager, MECP Kingston District Office

Charles Mitz, Ph.D., P.Geo., Senior Project Manager, The Greer Galloway Group Inc., Consulting
Engineers

Yazmin Ramirez Avila, B.Sc., M.Sc., Project Manager, The Greer Galloway Group Inc., Consulting
Engineers

Typhany Choinard, CAO/Clerk, Municipality of Centre Hastings