

File No.: 178.30

December 8, 2021

Darren Myers
Chief Administrative Officer
Municipality of Glenboro-South Cypress
Box 219
Glenboro MB R0K 0X0
cao@mgsc.ca

Dear Darren Myers:

Re: Environment Act Licence No. 1023 R

Enclosed is Environment Act Licence No. 1023 R, issued to Municipality of Glenboro-South Cypress. The licence is for the alteration and continued operation of the development being a wastewater collection system and a wastewater treatment facility serving the community of Glenboro and located in NW 10-7-14 WPM.

The facility operates in accordance with the Environment Act Proposal dated November 29, 2019, and the additional information dated June 21, 2020 and subject to the specifications, limits, terms and conditions included in the enclosed licence.

This licence rescinds Environment Act Licence No. 1023 VC.

In addition to the enclosed licence requirements, please be informed that all other applicable federal, provincial and municipal regulations and by-laws must be complied with. A notice of alteration must be filed with the director for approval prior to any alteration to the development as licensed.

Should you have any questions regarding this approval, please contact Kristy Forrestall, Acting Regional Supervisor, Environmental Compliance and Enforcement Branch, at Kristy.Forrestall@gov.mb.ca or 204-573-0518. With respect to Clauses 18 – 21 and 50, the environment officer of the approvals branch is Bruce Webb, at Bruce.Webb@gov.mb.ca or 204-945-7021.

This licensing decision may be appealed by any person who is affected by the issuance of this licence to the Minister of Conservation and Climate within 30 days of the date of the licence, pursuant to section 27 of The Environment Act.

Sincerely,

Original Signed by

Laura Pyles
Acting Director

- c. Joanne Lanoie - Samson Engineering Inc.
Lynne and Allan Bartram
Kristal Harman, Yvonne Hawryliuk, Kristy Forrestall - Environmental Compliance
and Enforcement
Siobhan Burland Ross, Bruce Webb - Environmental Approvals
Public Registry

LICENCE

File No.: 178.30

Licence No. / Licence n°: 1023 R

Issue Date / Date de délivrance : August 25, 1986

Revised: Dec. 8, 2021

In accordance with The Environment Act (C.C.S.M. c. E125)/
Conformément à la Loi sur l'environnement (C.P.L.M. c. E125)

Pursuant to Section 11(1) / Conformément au Paragraphe 11(1)

THIS LICENCE IS ISSUED TO: / CETTE LICENCE EST DONNÉE À:

MUNICIPALITY OF GLENBORO-SOUTH CYPRESS.; "the licensee"

for the alteration and continued operation of the development being a wastewater collection system and a wastewater treatment facility consisting of an aerated wastewater treatment lagoon cell and a submerged attached growth reactor serving the community of Glenboro, with an average flow rate of 292 cubic metres per day and located in NW 10-7-14 WPM in the Municipality of Glenboro-South Cypress, with effluent being discharged to the Assiniboine River in accordance with the proposal filed under The Environment Act on November 29, 2019 and additional information dated June 21, 2020, and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this Licence,

"accredited laboratory" means an analytical facility accredited by the Standards Council of Canada (SCC), or accredited by another accrediting agency recognized by Manitoba Conservation and Climate to be equivalent to the SCC, or be able to demonstrate, upon request, that it has the quality assurance/quality control (QA/QC) procedures in place equivalent to accreditation based on the international standard ISO/IEC 17025, or otherwise approved by the director;

"acute lethality" means a toxic effect resulting in death in an organism by a substance or mixture of substances within a short exposure period (usually 96 hours or less);

"aerated" means the bringing about of intimate contact between air and a liquid by bubbling air through the liquid;

"aerated cell" means a cell of a wastewater treatment lagoon system in which mechanical or diffused-air aeration is used to supplement the oxygen supply;

"affected area" means a geographical area, excluding the property of the development;

"approvals branch" means the Environmental Approvals Branch of Manitoba Conservation and Climate, or any future branch responsible for issuing licences under The Environment Act;

"approved" means approved by the director or assigned environment officer in writing;

"ASAE" means the American Society of Agricultural Engineers;

"ASTM" means the American Society for Testing and Materials;

"bentonite" means specially formulated standard mill grade sodium bentonite conforming to American Petroleum Institute Specification 13-A;

"bioassay" means a method of determining toxic effects of industrial wastes and other wastewaters by using viable organisms;

"composite sample" means a quantity of undiluted effluent consisting of a minimum of three equal volumes of effluent collected at approximately equal time intervals over a sampling period of not less than 7 hours and not more than 24 consecutive hours, or consisting of a quantity of undiluted effluent collected continually at an equal rate, or at a rate proportional to flow, over a sampling period of not less than 7 consecutive hours and not more than 24 consecutive hours;

"cut-off" means a vertical-side trench filled with compacted clay or a sand and bentonite mixture or a wall constructed from compacted clay;

"day" or "daily" means any 24-hour period;

"director" means an employee so designated pursuant to The Environment Act;

"effluent" means treated wastewater flowing or pumped out of the development;

"environment officer" means an employee so designated pursuant to The Environment Act;

"fecal coliform" means aerobic and facultative, Gram-negative, non-spore-forming, rod-shaped bacteria capable of growth at 44.5 °C, and associated with fecal matter of warm-blooded animals;

"five-day biochemical oxygen demand (BOD₅)" means that part of the oxygen demand usually associated with biochemical oxidation of organic matter within 5 days at a temperature of 20°C;

"five-day carbonaceous biochemical oxygen demand (CBOD₅)" means that part of the oxygen demand usually associated with biochemical oxidation of carbonaceous organic matter within five days at a temperature of 20°C, excluding the oxygen demand usually associated with the biochemical oxidation of nitrogenous organic matter;

"grab sample" means a quantity of wastewater obtained at a given place and time;

"HDPE" means high density polyethylene;

"high water mark" means the line on the interior surface of the aerated cell which is normally reached when the cell is at the maximum allowable liquid level or the line of the exterior of the perimeter dykes which is reached during local flooding;

"hydraulic conductivity" means the quantity of water that will flow through a unit cross-sectional area of a porous material per unit of time under a hydraulic gradient of 1.0;

"mil" means one thousandth of an inch;

"mixing zone" means an area adjacent to a discharge where a receiving water may not meet all water quality objectives included in the most recent version of the "Manitoba Water Quality Standards, Objectives, and Guidelines";

"MPN Index" means the most probable number of coliform organisms in a given volume of wastewater which, in accordance with statistical theory, would yield the observed test result with the greatest frequency;

"noise nuisance" means an unwanted sound, in an affected area, which is annoying, troublesome, or disagreeable to a person:

- (a) residing in an affected area;
- (b) working in an affected area; or
- (c) present at a location in an affected area which is normally open to members of the public; if the unwanted sound
- (d) is the subject of at least 5 written complaints, received by the director in a form satisfactory to the director and within a 90-day period, from 5 different persons falling within clauses (a), (b) or (c), who do not live in the same household; or
- (e) is the subject of at least one written complaint, received by the director in a form satisfactory to the director, from a person falling within clauses (a), (b) or (c) and the director is of the opinion that if the unwanted sound had occurred in a more densely populated area there would have been at least 5 written complaints received within a 90-day period, from 5 different persons who do not live in the same household;

"odour nuisance" means a continuous or repeated odour, smell or aroma, in an affected area, which is offensive, obnoxious, troublesome, annoying, unpleasant or disagreeable to a person:

- (a) residing in an affected area;
- (b) working in an affected area; or
- (c) present at a location in an affected area which is normally open to members of the public; if the odour, smell or aroma
- (d) is the subject of at least 5 written complaints, received by the director in a form satisfactory to the director and within a 90-day period, from 5 different persons falling within clauses (a), (b) or (c), who do not live in the same household; or
- (e) is the subject of at least one written complaint, received by the director in a form satisfactory to the director, from a person falling within clauses (a), (b) or (c) and the director is of the opinion that if the odour, smell or aroma had occurred in a more densely populated area there would have been at least 5 written complaints received within a 90-day period, from 5 different persons who do not live in the same household;

"operator" means a person certified to operate the wastewater collection system and the wastewater treatment plant employed by the licensee to manage the functional day-to-day operation of the wastewater collection system and the wastewater treatment plant within the constraints of this licence;

"pollutant" means a pollutant as defined in The Environment Act;

"record drawings" means engineering drawings complete with all dimensions which indicate all features of the development as it has actually been built;

"riprap" means small, broken stones or boulders placed compactly or irregularly on dykes or similar embankments for protection of earth surfaces against wave action or current;

"SAGR" means submerged attached growth reactor;

"sludge" means accumulated solid material containing large amounts of entrained water, which has separated from wastewater during processing;

"Standard Methods for the Examination of Water and Wastewater" means the most recent edition of Standard Methods for the Examination of Water and Wastewater published jointly by the American Public Health Association, the American Waterworks Association and the Water Environment Federation;

"total coliform" means a group of aerobic and facultative anaerobic, Gram-negative, non-spore forming, rod-shaped bacteria, that ferment lactose with gas and acid formation within 48 hours at 35°C and inhabit predominantly the intestines of man or animals, but are occasionally found elsewhere, and include the sub-group of fecal coliform bacteria;

"total residual chlorine" means the sum of free chlorine and combined chlorine, including inorganic chloramines;

"UV" means ultraviolet;

"UV disinfection" means a disinfection process for treating wastewater using ultraviolet radiation;

"UV germicidal dose" means the units of intensity of ultra violet light that is required to kill bacteria and viruses present in the effluent;

"wastewater" means the spent or used water of a community or industry which contains dissolved and suspended matter;

"wastewater collection system" means the sewer and pumping system used for the collection and conveyance of domestic, commercial, industrial and process wastewater;

"wastewater treatment facility" means the components of the development that receive and treat wastewater from the wastewater collection system, including the aerated wastewater treatment cell, the SAGR and associated piping, pumping and control facilities; and

"WWTF" means wastewater treatment facility.

GENERAL TERMS AND CONDITIONS

This section of the licence contains requirements intended to provide guidance to the licensee in implementing practices to ensure that the environment is maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for present and future Manitobans.

1. The licensee shall at all times maintain a copy of this licence at the development or at the premises from which the development's operations are managed.
2. The licensee shall direct all wastewater generated within the community of Glenboro toward the WWTF as shown in Schedule "A" attached to this licence or other approved wastewater treatment facilities.
3. In addition to any of the following specifications, limits, terms and conditions specified in this licence, the licensee shall, upon the request of the director:
 - a) sample, monitor, analyze or investigate specific areas of concern regarding any segment, component or aspect of pollutant storage, containment, handling, treatment and disposal systems, for such pollutants, ambient quality, aquatic toxicity, seepage characteristics and discharge rates and for such duration and frequencies as may be specified;
 - b) determine the environmental impact associated with the release of any pollutant from the development;
 - c) conduct specific investigations in response to the data gathered during environmental monitoring programs; or
 - d) provide the director within such time as may be specified, with such reports, drawings, specifications, analytical data, bioassay data, flow rate measurements and such other information as may from time to time be requested.
4. The licensee shall submit all information required to be provided to the director or environment officer under this licence, in writing, in such form (including number of copies), and of such content as may be required by the director or environment officer, and each submission shall be clearly labelled with the Licence Number and File Number associated with this licence.
5. The licensee shall not cause or permit a noise nuisance to be created as a result of the construction, operation or alteration of the development, and shall take such steps as the director may require to eliminate or mitigate a noise nuisance.
6. The licensee shall not cause or permit an odour nuisance to be created as a result of the construction, operation or alteration of the development, and shall take such steps as the director may require to eliminate or mitigate an odour nuisance.
7. The licensee shall actively participate in any future watershed-based management study, plan or nutrient reduction program, approved by the director, for the Assiniboine River and associated waterways and watersheds.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

Construction - General

8. The licensee shall notify the assigned environment officer prior to beginning construction of and upgrades to the WWTF. The notification shall include the intended starting date of construction and the name of the contractor responsible for the construction.
9. The licensee shall:
 - a) conduct all ditch related work activities during no flow or dry conditions and not during the April 1 to June 15 fish spawning and incubation period;
 - b) not construct components of the WWTF involving earthwork during periods of heavy rain;
 - c) place and/or isolate all excavated and construction material where it will not erode into any watercourse;
 - d) implement effective long-term sediment and erosion control measures to prevent soil-laden runoff and/or silt from entering any watercourse during construction and until vegetation is established;
 - e) routinely inspect all erosion and sediment control structures and immediately complete any necessary maintenance or repair;
 - f) revegetate soil exposed during the construction of the development with native or introduced grasses or legumes. Native species shall be used to revegetate areas where native species existed prior to construction; and
 - g) use rock that is free of silt and clay for riprap.
10. The licensee shall dispose of non-reusable construction debris and waste solids from the development at a waste disposal facility operating under the authority of a permit issued pursuant to the Waste Management Facilities Regulation, or any future amendment thereof, or a licence issued pursuant to The Environment Act.
11. The licensee shall comply with the requirements of The Heritage Resources Act, and suspend construction and immediately notify the Historic Resources Branch if heritage resources are encountered during the construction of the development.
12. The licensee shall locate fuel storage and equipment servicing areas established for the construction and operation of the development a minimum distance of 100 metres from any waterbody, and shall comply with the requirements of the Storage and Handling of Petroleum Products and Allied Products Regulation, or any future amendment thereof.
13. The licensee shall, during construction and maintenance of the development, operate, maintain and store all materials and equipment in a manner that prevents any deleterious substances (fuel, oil, grease, hydraulic fluids, coolant, paint, uncured concrete and concrete wash water, etc.) from entering the WWTF, the discharge route, and watercourses, and have an emergency spill kit for in-water use available on site during construction.
14. The licensee shall, during construction and maintenance of the development, prevent the introduction and spread of foreign aquatic and terrestrial biota by cleaning equipment prior to its delivery to the site of the development and complying with the requirements of the Aquatic Invasive Species Regulation, or any future amendment thereof.

15. The licensee shall construct and maintain an all-weather access road and a wastewater dumping station for truck-hauled wastewater. The dumping facility shall have a surface splash ramp with a smooth hard surface that can be easily washed free of solids.
16. The licensee shall install and maintain a fence around the WWTF to control access. The fence shall be a minimum of 1.2 metres high and have locking gates, which shall be locked at all times except to allow access to the WWTF.

Construction – Clay Liner of Aerated Wastewater Treatment Cell

17. The licensee shall construct and maintain the aerated wastewater treatment cell of the development with a continuous liner, including cut-offs, under all interior surfaces of the cell in accordance with the following specifications:
 - a) the liner shall be made of clay;
 - b) the liner of the dykes shall be at least one metre in thickness;
 - c) the thickness of the existing bentonite and clay liner of the floor of the cell of 0.350 metres to 0.600 metres shall not be reduced in construction or operation;
 - d) the liner of the dykes shall have a hydraulic conductivity of 1×10^{-7} centimetres per second or less at all locations; and
 - e) the liner of the dykes shall be constructed to an elevation of 2.5 metres above the floor elevation of the cell.
18. The licensee shall arrange with the designated environment officer of the approvals branch a mutually acceptable time and date for any required soil sampling between the 15th day of May and the 15th day of October of any year, unless otherwise approved by the environment officer.
19. The licensee shall take and test undisturbed soil samples, in accordance with Schedule "B" attached to this licence, from the liner of the dykes of the aerated wastewater treatment cell; the number and location of samples and test methods to be specified by the designated environment officer of the approvals branch up to a maximum of ten samples.
20. The licensee shall, not less than 2 weeks before the aerated wastewater treatment cell is placed in operation, submit for the approval of the environment officer of the approvals branch the results of the tests carried out pursuant to clause 19 of this licence.

Construction - HDPE Liner of SAGR Cells

21. The licensee shall construct and maintain a continuous liner, within the SAGR cells of the WWTF, such that:
 - a) the liner is constructed from HDPE geomembrane;
 - b) the liner has a minimum thickness of 60 mils;
 - c) all sections of the liner are joined by dual track seaming;
 - d) the liner is installed in accordance with ASAE Standard EP340.2 for the Installation of Flexible Membrane Linings;
 - e) the liner is installed on the floors and all walls of the SAGR cells;
 - f) non-destructive test methods are used to test the integrity of:
 - i) all field seams joining liner sections in accordance with ASTM Standard D 5820-95 (Reapproved 2006); and
 - ii) all other field seams in accordance with ASTM Standard D 4437-99; and

- g) an installation report is prepared and submitted to the designated environment officer of the approvals branch for approval within 30 days of commencing the installation of the liner. The installation report shall include the test results, a discussion of the results, and a statement that the liner was installed in accordance with the manufacturer's requirements.
22. The licensee shall not cover the liner or use the SAGR cells until receiving the approval of the environment officer of the report submitted pursuant to sub-clause 21 g) of this licence.

Breakdown or Process Upset Reporting

23. The licensee shall, in the case of physical or mechanical equipment breakdown or process upset where such breakdown or process upset results or may result in the release of a pollutant in an amount or concentration, or at a level or rate of release, that causes or may cause a significant adverse effect, immediately report the event by calling the 24-hour environmental accident reporting line at 204-944-4888 (toll-free 1-855-944-4888). The report shall indicate the nature of the event, the time and estimated duration of the event and the reason for the event.
24. The licensee shall, following the reporting of an event pursuant to clause 23,
- a) identify the repairs required to the mechanical equipment;
 - b) undertake all repairs to minimize unauthorized discharge of a pollutant;
 - c) complete the repairs in accordance with any written instructions of the director and/or the environment officer; and
 - d) submit a report to the director about the causes of breakdown and measures taken, within one week of the repairs being done.

Aerated Wastewater Treatment Cell - Maintenance

25. The licensee shall, if in the opinion of the environment officer, significant erosion of the interior surfaces of the dykes occurs, repair the dykes of the aerated wastewater treatment cell to the satisfaction of the environment officer. Upon approval of the environment officer, install riprap as necessary. The riprap shall be placed on the interior dyke surfaces from 0.6 metres above the high water mark to the bottom of the dykes to protect the dykes from wave action.
26. The licensee shall provide and maintain a grass cover on the dykes of the aerated wastewater treatment cell and shall regulate the growth of the vegetation so that the height of the vegetation does not exceed 0.3 metres on all dykes.
27. The licensee shall annually remove by mechanical methods all reeds, rushes and trees in the aerated wastewater treatment cell.
28. The licensee shall implement an ongoing program to remove burrowing animals from the site of the aerated wastewater treatment cell.

Operation – General

29. The licensee shall obtain and maintain classification of the development pursuant to the Water and Wastewater Facility Operators Regulation or any future amendment thereof and maintain compliance with all requirements of the regulation including, but not limited to, the preparation and maintenance of a table of organization, emergency response plan and standard operating procedures.
30. The licensee shall carry out the operation of the development with individuals properly certified to do so pursuant to the Water and Wastewater Facility Operators Regulation or any future amendment thereof.

Operation – Aerated Wastewater Treatment Cell

31. The licensee shall maintain a minimum freeboard of 1.0 metre and a maximum depth of effluent of 1.5 metres in the aerated wastewater treatment cell.
32. The licensee shall maintain a minimum of 2 milligrams of dissolved oxygen per litre in the liquid in the aerated wastewater treatment cell.

Operation – Effluent Discharge

33. The licensee shall not discharge effluent to the Assiniboine River from the WWTF where:
 - a) the organic content of the effluent, as indicated by the five-day carbonaceous biochemical oxygen demand (CBOD₅), is in excess of 25 milligrams per litre;
 - b) the fecal coliform or E. coli content of the effluent, as indicated by the MPN index, is in excess of 200 per 100 millilitres of sample, as determined by the monthly geometric mean of 1 grab sample collected at equal intervals on each of a minimum of 3 consecutive days per week;
 - c) the total suspended solids content of the effluent, as indicated by the non-filterable residue, is in excess of 25 milligrams per litre;
 - d) the total phosphorus is in excess of 1.0 milligram per litre, as determined by the thirty-day rolling average for the WWTF; and

- e) the total ammonia content of the effluent of the WWTF expressed as total ammonia nitrogen (N) in milligrams per litre is in excess of the limit specified below:

Effluent pH	Effluent, Total Ammonia expressed as N (mg/L)
6.50	48.83
6.60	46.84
6.70	44.57
6.80	42.00
6.90	39.16
7.00	36.09
7.10	32.86
7.20	29.54
7.30	26.21
7.40	22.97
7.50	19.89
7.60	17.03
7.70	14.44
7.80	12.14
7.90	10.13
8.00	8.41
8.10	6.95
8.20	5.73
8.30	4.71
8.40	3.88
8.50	3.20
8.60	2.65
8.70	2.20
8.80	1.84
8.90	1.56
9.00	1.32

These limits apply after commissioning of the WWTF. Until the WWTF has been commissioned, effluent shall be discharged into the existing infiltration cell.

34. The licensee shall not release a quality of effluent from the WWTF which:
- on any day, causes, or contributes to, the mixing zone for the effluent in the Assiniboine River being acutely lethal to aquatic life passing through the mixing zone; or
 - can be demonstrated to be acutely lethal to fish within the mixing zone for the effluent in the Assiniboine River by using a 96-hour static acute lethality test which results in mortality to more than 50 per cent of the test fish exposed to 100 per cent concentration of effluent, with the test carried out in accordance with the protocol outlined in Environment Canada's "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout: EPS 1/RM/13 Second Edition – December 2000" or any future amendment thereof.

Operation - Disinfection

35. The licensee shall, if UV disinfection is employed, have adequate instrumentation installed to provide constant monitoring of the UV process to ensure compliance with the UV disinfection requirements. Such instrumentation shall include but not be limited to the following:
 - a) a UV sensor to monitor lamp intensity;
 - b) appropriate alarm and shutdown systems;
 - c) a lamp monitoring system to identify the location of individual lamp failures;
 - d) an hour meter which cannot be reset to display actual hours of UV lamp operation; and
 - e) protective circuits for overcurrent and ground current leakage detection.
36. The licensee shall, if UV disinfection is employed, utilize UV lamps in the UV disinfection process that have a rated output of at least 254 nanometres (nm) capable of delivering a germicidal dose in excess of 30,000 microwatt seconds/sq cm.
37. The licensee shall, if UV disinfection is employed, operate and maintain the UV disinfection system to give a germicidal dose of 80% or more of the design UV germicidal dose, at the end of the lamp life.
38. The licensee shall when chlorine is used as a disinfecting agent:
 - a) notify the director in advance;
 - b) dechlorinate effluent prior to discharge;
 - c) obtain grab samples prior to and daily during the discharge period and have them analyzed for total residual chlorine; and
 - d) not discharge effluent where the concentration of the total residual chlorine is in excess of 0.02 milligrams per litre.

MONITORING AND REPORTING SPECIFICATIONS

39. The licensee shall, unless otherwise specified in this licence:
 - a) carry out all preservations and analyses of liquid samples in accordance with the methods prescribed in the Standard Methods for the Examination of Water and Wastewater or in accordance with equivalent preservation and analytical methodologies approved by the director;
 - b) carry out all sampling of, and preservation and analyses on, soil, compost, and air samples in accordance with methodologies approved by the director;
 - c) have all analytical determinations undertaken by an accredited laboratory; and
 - d) report the results to the director, in writing and in an electronic format acceptable to the director, within 60 days of the samples being taken.
40. The licensee shall, until the commissioning of the WWTF, continue to monitor and report to the environment officer on the operation of the existing infiltration cell:
 - a) the dates of the discharge of effluent to the infiltration cell; and
 - b) sampling results for fecal coliform, nitrite-nitrate, sodium and chloride from the eight existing groundwater monitoring wells obtained two weeks after the discharge of effluent to the infiltration cell.

41. The licensee shall monitor, and make the records of such monitoring available to the environment officer as may be requested, the wastewater treatment process for the following parameters:
- a) total flow rate(s) into the WWTF;
 - b) operation of the aeration system at least once each week; and
 - c) other process parameters approved or required by the director or environment officer.
42. The licensee shall:
- a) construct, maintain, and make available for use by an environment officer, a monitoring station allowing direct accesses to the WWTF effluent discharge pipe following UV disinfection (if UV disinfection is required);
 - b) have the monitoring station accessible to an environment officer at all times;
 - c) install and maintain a flow measuring device at the monitoring station or at a location acceptable to the director which is capable of measuring the volumes of effluent with an accuracy of ± 2 per cent;
 - d) have the flow measuring device re-calibrated biannually or on the request of an environment officer;
 - e) equip the monitoring station with a flow-proportional sampling device equipped to function with the flow measuring device and have the sampling device available on request for use by an environment officer; and
 - f) equip the monitoring station with an electrical power source of 15 amperes at 110 volts.

Effluent Monitoring

43. The licensee shall:
- a) take one composite sample of effluent from the WWTF effluent monitoring station over a 24-hour period once each month;
 - b) have the composite effluent sample analyzed for:
 - i) five-day carbonaceous biochemical oxygen demand (CBOD₅);
 - ii) total suspended solids;
 - iii) unionized ammonia;
 - iv) total ammonia;
 - v) total phosphorus;
 - vi) pH; and
 - vii) temperature;
 - c) take three daily grab samples on consecutive days of the effluent from the effluent monitoring station during the discharge period once biweekly;
 - d) have the grab samples analyzed for fecal coliform content or E. coli; and
 - e) determine and record the monthly geometric mean for the fecal coliform or E. coli counts based on all the data collected during each month, from a minimum of six (6) grab samples.
44. The licensee shall, during the first year of operation of the development following the commissioning of the WWTF, obtain grab samples of the effluent from the WWTF, have them analyzed and report the results in accordance with Schedule "C" attached to this licence.

Acute Lethality

45. The licensee shall, upon the request of the director:
- take a flow proportional composite sample of effluent from the WWTF effluent monitoring station over a 24 hour period;
 - have the sample of the effluent analyzed at 100 per cent concentration for acute lethality in accordance with the protocol outlined in Environment Canada's "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout: EPS 1/RM/13 Second Edition – December 2000", or any future amendment thereof; and
 - report the results to the director within 30 days of the end of the month during which the sample was taken.

Records Maintenance and Reporting

46. The licensee shall during each year maintain the following records and retain them for a minimum period of five calendar years:
- reports of visual inspections conducted at a minimum of once per month;
 - wastewater sample dates;
 - original copies of laboratory analytical results of the sampled wastewater;
 - a summary of laboratory analytical results;
 - monthly effluent discharge volumes from the WWTF;
 - aeration system inspection dates;
 - maintenance and repairs;
 - expansions to the wastewater collection system with associated capacity assessment;
 - updated organization charts identifying all certified operators, including backup operators; and
 - a summary of any sanitary sewer overflows.
47. The licensee shall submit an annual report to the environment officer by February 28 of the following year including all records required by clause 46 of this licence.

Operating Depth and Freeboard Non-Compliance Events

48. The licensee shall immediately notify the director each time the operating depth of the aerated wastewater treatment cell does not comply with the maximum operating depth and minimum freeboard requirements as specified in clause 31 of this licence for a period of time exceeding ten consecutive days.
49. The licensee shall, if reporting is required pursuant to clause 48 of this licence in two consecutive years:
- engage the services of a qualified consultant, acceptable to the director, to undertake an investigation of the wastewater treatment facility and related infrastructure, to determine the ability or inability of the existing system to meet the hydraulic loading capacity of the community. The investigation shall include but not be necessarily limited to:
 - diagnosis of the cause(s) of the recent exceedances of maximum operating depth;
 - sources of infiltration into the wastewater system including the municipal infrastructure;

- iii) current hydraulic loading of the system;
 - iv) lack of storage capacity due to sludge build-up within existing cells;
 - v) the organic loading on the primary cell in terms of the five day biochemical oxygen demand; and
 - vi) operating procedures.
- b) provide to the director, within four months of the notification given pursuant to clause 48 of this licence, an engineering report describing in detail the results and observations concluded by virtue of the investigation; and
- c) provide to the director, within four months of the report provided pursuant to sub-clause b) of this section, a remedial action plan in the form of a detailed engineering report describing recommended modifications, repairs or upgrading works to overcome excessive hydraulic loading of the system.

Record Drawings

50. The licensee shall:
- a) prepare "record drawings" for the development and shall label the drawings "record drawings"; and
 - b) provide to the designated environment officer of the approvals branch, within six months of commissioning the WWTF, one set of "record drawings" of the development.

Decommissioning of Existing Infiltration Cell

51. The licensee shall, within one year of commissioning of the WWTF, submit for the approval of the director a decommissioning plan for the existing infiltration cell, and implement the approved plan.

Alterations

52. The licensee shall notify the director and receive the approval of the director for any alterations to the development as licensed, prior to proceeding with such alterations.

REVIEW AND REVOCATION

- A. Licence No. 1023 VC is hereby rescinded.
- B. If, in the opinion of the director, the licensee has exceeded or is exceeding or has or is failing to meet the specifications, limits, terms, or conditions set out in this licence, the director may, temporarily or permanently, revoke this licence.
- C. If, in the opinion of the director, new evidence warrants a change in the specifications, limits, terms or conditions of this licence, the director may require the filing of a new proposal pursuant to section 11 of The Environment Act.

Original Signed by

Laura Pyles
Acting Director

[illegible]

Schedule "B" to Environment Act Licence No. 1023 R

Liner Sampling and Testing Requirements Pursuant to Clause 19.

Soil Sampling:

1. The licensee shall provide a drilling rig, acceptable to the designated environment officer, to extract soil samples from the liner which is not placed or found at the surface of the lagoon structure. This includes all wastewater treatment lagoons constructed with clay cutoffs at the interior base of the dyke or with a clay cutoff in the centre of the dyke. The drill rig shall have the capacity to drill to the maximum depth of the clay cutoff plus an additional 2 metres. The drill rig shall be equipped with both standard and hollow stem augers. The minimum hole diameter shall be 5 inches.
2. For lagoon liners placed or found at the surface of the lagoon structure, the licensee shall provide a machine, acceptable to the designated environment officer, capable of pressing a sampling tube into the liner in a straight line motion along the centre axis line of the sample tube and without sideways movement.
3. Soil samples shall be collected and shipped in accordance with ASTM Standard D 1587 (Standard Practice for Thin-Walled Tube Sampling of Soils), D 4220 (Standard Practice for Preserving and Transporting Soil Samples) and D 3550 (Standard Practice for Ring-Lines Barrel Sampling of Soils). Thin-walled tubes shall meet the stated requirements including length, inside clearance ratio and corrosion protection. An adequate venting area shall be provided through the sampling head.
4. At the time of sample collection, the designated environment officer shall advise the licensee as to the soil testing method that must be used on each sample. The oedometer method may be used for a sample where the environment officer determines that the soil sample is taken from an undisturbed clay soil which has not been remoulded and which is homogeneous and unweathered. The triaxial test shall be used for all samples taken from disturbed and remoulded soils or from non homogenous and weathered soils.
5. The licensee shall provide a report on the collection of soil samples to the designated environment officer and to the laboratory technician which includes but is not limited to the following: a plot plan indicating all drill holes, onsite visual observations, sample location, depth or elevation of sample, length of advance of the sample tube, length of soil sample contained in the tube after its advancement, the soil test method specified by the environment officer for each soil sample and all necessary instructions from the site engineer to the laboratory technician.
6. All drill and sample holes shall be sealed with bentonite pellets after the field drilling and sampling has been completed.

Schedule "B" to Environment Act Licence No. 1023 R (cont'd)

Soil Testing Methods:

1. Triaxial Test Method

- a) The soil samples shall be tested for hydraulic conductivity using ASTM D 5084 (Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter).
- b) Soil specimens shall have a minimum diameter of 70 mm (2.75 inches) and a minimum height of 70 mm (2.75 inches). The soil specimens shall be selected from a section of the soil sample which contains the most porous material based on a visual inspection. The hydraulic gradient shall not exceed 30 during sample preparation and testing. Swelling of the soil specimen should be controlled to adjust for the amount of compaction measured during sample collection and extraction from the tube and the depth or elevation of the sample. The effective stress used during saturation or consolidation of the sample shall not exceed 40 kPa (5.7 psi) or the specific stress level, that is expected in the field location where the sample was taken, whichever is greater.
- c) The complete laboratory report, as outlined in ASTM D 5084, shall be supplied for each soil sample collected in the field.

2. Oedometer Test Method

- a) The soil samples shall be tested for hydraulic conductivity using ASTM D 2435 (Standard Test Method for One-Dimensional Consolidation Properties of Soils).
- b) Soil specimens shall have a minimum diameter of 50 mm (2 inches) and a minimum height of 20 mm (0.8 inches). The soil specimens shall be selected from a section of the soil sample which contains the most porous material based on a visual inspection. The soil specimen shall be taken from an undisturbed soil sample. The soil specimen shall be completely saturated.
- c) The complete laboratory report, as outlined in ASTM D 2435, shall be supplied for each soil sample collected in the field.

Schedule "C" to Environment Act Licence No. 1023 R

Initial Characterization of Wastewater from the Wastewater Treatment Facility Pursuant to Clause 44

Facility Size: Very small (less than 500 m³/day)

Facility Type: Sewage Treatment Plant - Continuous discharge

Effluent Sampling:

During the first year of operation:

1. a grab sample shall be collected every month;
2. a grab sample shall be collected on a daily basis, if chlorine is used.

Effluent Analysis:

1. Have the monthly sample analyzed for:
 - a) the organic content as indicated by the five-day biochemical oxygen demand and expressed as milligrams per litre;
 - b) the organic content as indicated by the five-day carbonaceous biochemical oxygen demand and expressed as milligrams per litre;
 - c) the total suspended solids content expressed as milligrams per litre;
 - d) the Escherichia coli (E. Coli) content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
 - e) the fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
 - f) the total coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
 - g) total ammonia nitrogen expressed as milligrams per litre;
 - h) nitrate-nitrite nitrogen expressed as milligrams per litre;
 - i) total Kjeldahl nitrogen, TKN (ammonia + organic N) expressed as milligrams per litre;
 - j) dissolved phosphorus expressed as milligrams per litre;
 - k) total phosphorus expressed as milligrams per litre;
 - l) temperature; and
 - m) pH.
2. Have the daily sample analyzed for total residual chlorine (TRC), if required.

Effluent Reporting:

1. Report the results to the director, in writing and in an electronic format acceptable to the director, within 60 days of the sampling date. The report shall include the sampling date, sample temperature, the dates of the effluent discharge, and copies of the laboratory analytical results of the sampled effluent.