Manitoba
Sustainable Development

Environmental Stewardship Division
Environmental Approvals Branch
1007 Century Street, Winnipeg, Manitoba R3H 0W4
T 204 945-8321 F 204 945-5229
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CLIENT FILE NO.: 140.40

July 25, 2018

Daniel McDermid, C.E.T.
City of Selkirk
975 Main Street
Selkirk MB R1A 2M1

Dear Mr. McDermid:

Enclosed is **Environment Act Licence No. 3273**, issued to the **City of Selkirk** for the construction, operation, and maintenance of the Development being a wastewater collection system, forcemain, and a wastewater treatment plant in accordance with the Proposal filed under The Environment Act.

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.

For further information on the administration and application of the Licence, please feel free to contact Mike Baert, Environment Officer, at 204-785-5021. Please note that for Clauses 58 - 60 of the Licence, the designated Environment Officer of the Approvals Branch is Robert Boswick, who may be contacted at Robert.Boswick@gov.mb.ca or 204-945-6030.

Pursuant to Section 27 of The Environment Act, this licensing decision may be appealed by any person who is affected by the issuance of this Licence to the Minister of Sustainable Development within 30 days of the date of the Licence.

Yours truly,

[redacted]

Tracey Braun, M.Sc.
Director

c: Don Labossiere/Tyler Kneeshaw/Mike Baert, Environmental Compliance and Enforcement
Robert Boswick, Environmental Approvals; Keith Fitchett, AECOM
Public Registries

NOTE: Confirmation of Receipt of this Licence No. 3273 *(by the Licencee only)* is required by the Director of Environmental Approvals. Please acknowledge receipt by signing in the space below and provide a copy (letter only) to the Department at robert.boswick@gov.mb.ca by Aug. 8, 2018.

On behalf of the City of Selkirk **Date**

****A COPY OF THE LICENCE MUST BE KEPT ON SITE AT THE DEVELOPMENT AT ALL TIMES****

THE ENVIRONMENT ACT
LOI SUR L'ENVIRONNEMENT

Manitoba

LICENCE

Licence No. / Licence n° 3273

Issue Date / Date de délivrance July 25, 2018

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 Sections 11(1) / Conformément au Paragraphe 11(1)

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

CITY OF SELKIRK
"the Licencee"

for the construction and operation of the Development being a wastewater collection system and a wastewater treatment plant with a maximum daily flow rate not in excess of 36,000 cubic metres over any 24-hour period with not more than 12,000 cubic metres of that volume being directed to secondary treatment over any 24-hour period for a design population of 12,823 and located at 975 Main Street in the City of Selkirk (River Lots 14 and 15, Parish of St. Peters) and with discharge of treated effluent into an outfall to the Red River, in accordance with the Proposal filed pursuant to The Environment Act on March 8, 2016 and subsequent information submitted on July 25, 2016, November 3, 2017 and January 15, 2018 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 to be equivalent to the SCC, or 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);

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

"Approvals Branch" means the Environmental Approvals Branch of Manitoba Sustainable Development, or any future branch responsible for issuing licences under The Environment Act;

"approved" means approved by the Director or assigned Environment Officer in writing;

"appurtenances" means machinery, appliances, or auxiliary structures attached to a main structure to enable it to function, but not considered an integral part of it;

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

"base" means the exposed and finished elevation of the bottom of any cell of the wastewater treatment lagoon;

"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;

"biosolids" means accumulated organic solids, resulting from wastewater treatment processes, that have received adequate treatment to permit the material to be recycled;

"composite sample" means a quantity of undiluted wastewater consisting of a minimum of 10 equal volumes of effluent, or flow proportional volumes collected over a 24-hour period, and may be collected manually or by means of an automatic sampling device;

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

"day" 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 wastewater treatment plant;

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

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

"final discharge point" means the discharge point of the UV disinfection station;

"five-day biochemical oxygen demand (BOD_5)" means that part of oxygen usually associated with biochemical oxidation of organic material within 5 days at a temperature of 20°C;

"five-day carbonaceous biochemical oxygen demand ($CBOD_5$)" means that part of the oxygen demand usually associated with biochemical oxidation of carbonaceous organic matter within 5 days at a temperature of 20°C, excluding BOD associated with nitrogenous organic matter;

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

"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;

"industrial use agreement" means an agreement to discharge industrial wastewater to municipal wastewater collection and treatment systems;

"industrial wastewater" means wastewater derived from an industry which manufactures, handles or processes a product and does not include wastewater from commercial or residential buildings;

"influent" means water, wastewater, or other liquid flowing into the wastewater treatment plant;

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

"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";

"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;

"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;

"septage" means the sludge produced in individual on-site wastewater disposal systems such as septic tanks;

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

"sludge solids" means solids in sludge;

"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 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;

"WAS" means waste activated sludge;

"waste disposal ground" means an area of land designated by a person, municipality, provincial government agency, or crown corporation for the disposal of waste and approved for use in accordance with Manitoba Regulation 37/2016 – Waste Management Facilities, or any future amendments thereto, or a Licence pursuant to The Environment Act;

"waste solid" means a dissolved, suspended, or volatile substance that is contained in or removed from wastewater and that can no longer be used for its original purpose;

"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 and industrial wastewater;

"wastewater treatment plant" means the central facility of wastewater treatment facilities which contains all treatment processes exclusive of the collection system; and

"WWTP" means wastewater treatment plant.

GENERAL SPECIFICATIONS

This Section of the Licence contains requirements intended to provide guidance to the Licencee 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 Licencee shall direct all wastewater generated with the City of Selkirk toward the WWTP or other approved wastewater treatment facilities.

2. In addition to any of the following specifications, limits, terms and conditions specified in this Licence, the Licencee 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.

3. The Licencee 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.

4. The Licencee 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 Client File Number associated with this Licence.

5. The Licencee shall operate the WWTP in such a manner that:
   a) all wastewater, septage and sludge transported to the Development by means other than the wastewater collection system are transported in enclosed containers and in such a manner to prevent loss of wastewater, septage and sludge to the satisfaction of an Environment Officer;
   b) only wastewater as defined in this Licence is discharged into the WWTP;
   c) waste solids collected by the WWTP headworks are disposed in a waste disposal ground;
   d) sewage sludge generated by the WWTP is pumped to the WAS storage cell as identified on 'Schedule A' to this Licence for storage; and
   e) sludge stored in the storage cell is land applied periodically as necessary and in accordance with the requirements of a Licence or Licences issued pursuant to The Environment Act so as to maintain effective and stable operation of the storage cell.

6. The Licencee shall install, operate and maintain an effluent discharge route from the WWTP to the Red River such that freezing of the effluent in the discharge route is prevented.

7. The Licencee shall not spill, or allow to be spilled, wastewater and/or sludge in the area around the WWTP.

8. The Licencee 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.

9. The Licencee 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.

10. The Licencee shall not allow the discharge of any industrial wastewater from a wet industry into the wastewater collection system and WWTP or equalization cells unless the wet industry discharging the wastewater has first entered into an industrial use agreement with the Licencee.

11. Notwithstanding Clause 10 of this Licence, the Licencee shall establish an industrial use agreement with wet industries that do not currently have an industrial use agreement within six months of the date of this Licence. Any such agreement(s) shall specify the quality, quantity and timing of discharges into the wastewater collection system.

12. The Licencee shall comply with the requirements of The Heritage Resources Act and, if heritage resources are encountered during the construction of the Development, suspend construction and immediately notify the Historic Resources Branch.

13. The Licencee shall actively participate in any future watershed-based management study, plan or nutrient reduction program, approved by the Director, for the Red River and associated waterways and watersheds.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

Respecting Construction - General

14. The Licencee shall notify the assigned Environment Officer prior to beginning construction of and upgrades to the WWTP. The notification shall include the intended starting date of construction and the name of the Licencee's contact person at the construction site.

15. The Licencee shall install and maintain a security fence around all components of the WWTP that are not enclosed within secured buildings to the satisfaction of the Environment Officer.

16. The Licencee shall maintain riprap on the creek and river beds and banks at the locations of the outfalls of the effluent discharge route to prevent erosion of the river beds and banks to the satisfaction of the Environment Officer.

17. The Licencee shall locate fuel storage and equipment servicing areas established for the construction of the Development a minimum distance of 100 metres from any waterbody, and shall comply with the requirements of Manitoba Regulation 188/2001 respecting Storage and Handling of Petroleum and Allied Products or any future amendment thereof.

Respecting Construction – Equalization Cells, WAS Storage Cells, and Sludge Dewatering Pad

18. The Licencee shall maintain the equalization and WAS storage cells and the sludge dewatering pad of the WWTP as identified on Schedule "A" to this Licence with continuous liners, including cut-offs, under all interior surfaces of the cells in accordance with the following specifications:
    a) the liners shall be made of clay;
    b) the liners shall be at least one metre in thickness;
    c) the liners shall have a hydraulic conductivity of 1×10^{-7} centimetres per second or less at all locations.

19. The Licencee shall maintain the continuous liners of the equalization cells and the WAS storage cell of the WWTP as identified on Schedule "A" to this Licence across the bottom of each cell and up to the top of the dykes.

20. The Licencee shall construct and maintain the sludge dewatering pad of the WWTP as identified on Schedule "A" to this Licence such that the continuous liner is effectively graded so as to cause all surface run off from the pad and sludge located on it to be contained and directed to flow by gravity only to either the equalization cells or the WAS storage cell.

21. The Licencee shall install and maintain a fence around the equalization cells and the WAS storage cell of the WWTP to limit access. The fence shall be a minimum of 1.2 meters high and have locking gates, which shall be locked at all times except to allow access to these cells.

22. The Licencee shall construct and maintain an all-weather access road and a wastewater dumping station for truck handled wastewater at the Development. The dumping facility shall have a surface splash ramp with a smooth hard surface that can be easily washed free of solids.

Respecting Operation – General

23. The Licencee shall obtain and maintain classification of the Development pursuant to Manitoba Regulation 77/2003 respecting Water and Wastewater Facility Operators 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.

24. The Licencee shall carry out the operation of the Development with individuals properly certified to do so pursuant to Manitoba Regulation 77/2003 respecting Water and Wastewater Facility Operators or any future amendment thereof.

25. The Licencee shall, unless otherwise approved by the Director, operate and maintain the wastewater treatment plant in such a manner that:
    a) the maximum daily flow rate directed to secondary treatment is not in excess of 12,000 cubic metres per day;
    b) the maximum daily flow rate is not in excess of 36,000 cubic metres per day; and
    c) the organic loading is not in excess of 1,467 kilograms of five-day biochemical oxygen demand per day.

26. The Licencee shall not discharge effluent from the WWTP, as sampled at the monitoring station located after the membrane tanks and UV disinfection, where:
    a) the organic content of the effluent, as indicated by the five-day carbonaceous biochemical oxygen demand ($CBOD_5$), 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;

e) the total nitrogen is in excess of 15 milligrams per litre, as determined by the thirty-day rolling average; and

f) the total ammonia content of the effluent expressed as total ammonia nitrogen (N) in kilograms per day is in excess of the load specified below:

Period	Ammonia Nitrogen (as N) (kg/any 24 hour period)
January	6231
February	6695
March	10720
April	19819
May	11802
June	6514
July	3994
August	2217
September	2720
October	2400
November	3406
December	3567

27. The Licencee shall not release a quality of effluent from the WWTP which:

a) on any day, causes, or contributes to, the mixing zone for the effluent in the Red River being acutely lethal to aquatic life passing through the mixing zone; or

b) can be demonstrated to be acutely lethal to fish within the mixing zone for the effluent in the Red River by using a 96-hour static acute lethality test which results in mortality to more than 50 percent of the test fish exposed to 100 percent 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.

Respecting Disinfection

28. The Licencee shall, when 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.

29. The Licencee shall, when 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.

30. The Licencee shall, when 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.

31. The Licencee 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.

Respecting Operation – Equalization and WAS Storage Cells

32. The Licencee shall operate and maintain the equalization cells of the WWTP as identified on Schedule "A" to this Licence in such a manner that:
    a) the organic loading on each equalization cell, as indicated by the five-day biochemical oxygen demand, is not in excess of 56 kilograms per hectare per day; and
    b) that the depth of liquid in each equalization cell does not exceed 1.5 metres.

33. The Licencee shall operate and maintain the equalization cells and the WAS storage cell of the WWTP as identified on Schedule "A" to this Licence in such a manner that a 1.0 metre freeboard is maintained in the cells at all times.

34. The Licencee shall direct all WAS from the membrane system of the WWTP to the WAS storage cell at the site of the lagoon cells of the WWTP as identified on Schedule "A" to this Licence.

35. The Licencee shall direct all supernatant from the WAS storage cell to the equalization cells of the lagoon as identified on Schedule "A" to this Licence for eventual piped return to the WWTP.

36. The Licencee shall transfer all sludge from the equalization cells to the WAS storage cell of the WWTP as identified on Schedule "A" to this Licence prior to initiating operation of this Development under this Licence.

37. The Licencee shall develop, and submit to the Director for approval within one year of the date of this Licence, a sludge management plan relative to future periodic removal of accumulated sludge from within the WAS storage cell as identified on Schedule "A" to this Licence for land application.

Respecting Maintenance – Equalization and WAS Storage Cells

38. The Licencee shall, if in the opinion of the Environment Officer, significant erosion of the interior surfaces of the dykes occurs, repair the dyke 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.

39. The Licencee shall provide and maintain a grass cover on the dykes of the equalization and WAS storage cells and shall regulate the growth of the vegetation so that the height of the vegetation does not exceed 0.3 metres on all dykes.

40. The Licencee shall annually remove by mechanical methods all reeds, rushes and trees located above the low water mark in the equalization and WAS storage cells.

41. The Licencee shall implement an ongoing program to remove burrowing animals from the site of the equalization and WAS storage cells.

MONITORING AND REPORTING SPECIFICATIONS

42. The Licencee shall:
    a) maintain a record of all wastewater hauled to the WWTP, including the number of loads on a daily and weekly basis, the volume of each load, the name of the hauler, and the source of the contents of each load according to the type of waste and the name and location of each property serviced;
    b) make all records available to an Environment Officer upon request; and
    c) submit an annual report of all the waste hauling information to the Director within 30 days of the end of the 12 month period.

43. The Licencee shall monitor, and make the records of such monitoring available to the Director as may be requested, the wastewater treatment process for the following parameters:
    a) total flow rate(s) into the WWTP;
    b) flow rates into each bioreactor;
    c) flow rates from the equalization cells to the WWTP;
    d) flow rates into and through the UV disinfection system;
    e) flow rates through each of the two trains of the membrane system; and
    f) other process parameters approved or required by the Director.

44. The Licencee shall:
    a) construct, maintain, and make available for use by an Environment Officer, secured and heated monitoring stations, allowing direct accesses to:
        i) the influent wastewater channel(s); and
        ii) the effluent discharge channel(s) following UV disinfection or the membrane system;
    b) have the monitoring stations accessible to an Environment Officer at all times;
    c) install and maintain flow measuring devices at the monitoring stations or at locations acceptable to the Director which are capable of measuring the volumes of influent and effluent with an accuracy of ± 2 percent;
    d) have the flow measuring devices re-calibrated biannually or on the request of an Environment Officer;
    e) equip the monitoring stations with flow-proportional sampling devices equipped to function with the flow measuring device and have the sampling devices available on request for use by an Environment Officer; and
    f) equip the monitoring stations with an electrical power source of 15 amperes at 110 volts.

45. The Licencee shall arrange for the taking of samples of influent before the wastewater enters the WWTP and of the effluent at locations that are accessible during all weather conditions.

46. The Director shall approve the sampling locations for the influent and the effluent.

Respecting Effluent Monitoring

47. The Licencee shall:
    a) take one flow proportional composite sample of effluent from the effluent monitoring station over a 24-hour period once each week;
    b) have the flow proportional composite effluent sample analyzed for:
        i) carbonaceous biochemical oxygen demand ($CBOD_5$);
        ii) total suspended solids;
        iii) unionized ammonia;
        iv) total ammonia;

v) total nitrogen;
vi) total phosphorus;
vii) pH; and
viii) temperature.

c) take three grab samples of the effluent from the effluent monitoring station during the discharge period once each week;
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 twelve (12) grab samples.

48. The Licencee shall report the results from the sampling required by Clause 47 of this Licence to the Director in accordance with the requirements of Clause 3 d) of this Licence.

49. The Licencee shall, during the first year of operation of the Development following the upgrade of the WWTP, obtain grab samples of the effluent, have them analyzed and report the results in accordance with Schedule "B" attached to this licence.

Respecting Acute Lethality

50. The Licencee shall:
a) take two flow proportional composite samples of effluent from the effluent monitoring station over a 24 hour period every three months each year with a minimum separation time of 90 days between samples;
b) have one bioassay sample of the effluent analyzed at 100 percent 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;
c) have one sample of the effluent analyzed for chronic toxicity in accordance with a method approved by the Director; and
d) report the results to the Director within 30 days of the end of the month during which the samples were taken.

Respecting Records Maintenance and Reporting

51. The Licencee shall during each year maintain the following records and retain them for a minimum period of five calendar years:
a) reports of visual inspections conducted at a minimum of once per month;
b) wastewater sample dates;
c) original copies of laboratory analytical results of the sampled wastewater;
d) a summary of laboratory analytical results;
e) monthly effluent discharge volumes;
f) maintenance and repairs; and

g) a summary of any sanitary sewer overflows.

52. The Licencee shall submit an annual report to the Environment Officer by February 28 of the following year including all records required by Clause 51 of this Licence.

Respecting Operating Depth and Freeboard Non-Compliance Events

53. The Licencee shall immediately notify the Director each time the operating depth of any cell of the WWTP as identified on Schedule "A" of this Licence does not comply with the maximum operating depth and minimum freeboard requirements for that cell as specified in Clause 33 of this Licence.

54. The Licencee shall, if reporting is required pursuant to Clause 53 of this Licence in two consecutive years:
    a) engage the services of a qualified consultant, acceptable to the Director, to undertake an investigation of the cells of the WWTP as identified on Schedule "A" of this Licence 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:
        i) diagnosis of the cause(s) of the recent exceedances of maximum operating depth;
        ii) 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 any 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 53 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.

55. The Licencee shall maintain a record of all septage, sewage and wastewater hauled to the WWTP, including the number of loads on a daily and weekly basis, the volume of each load, the name of the hauler, and the source of the contents of each load according to the type of waste and the name and location of each property serviced. The Licencee shall retain this record and provide it to an Environment Officer upon request.

Respecting Breakdown or Process Upset Reporting

56. The Licencee 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.

57. The Licencee shall, following the reporting of an event pursuant to Clause 56:
    a) identify the repairs required to the mechanical equipment;
    b) undertake all repairs to minimize unauthorized discharges of a pollutant;
    c) complete the repairs in accordance with any written instructions of the Director; and
    d) submit a report to the Director about the causes of breakdown and measures taken, within one week of the repairs being done.

Respecting Soil Liner Sampling, Testing and Reporting

58. The Licencee 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.

59. The Licencee shall take and test undisturbed soil samples, in accordance with Schedule "C" to this Licence, from the soil liners of the equalization cells and the WAS storage cell of the lagoon as identified on Schedule "A" to this Licence; 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 40 samples.

60. The Licencee shall, not less than 2 weeks before the WAS storage cell and the equalization cells as identified on Schedule "A" to this Licence are 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 59 of this Licence.

Respecting Record Drawings

61. The Licencee shall:
    a) prepare "record drawings" for the Development and shall label the drawings "record drawings"; and
    b) provide to the Director, within six months of commissioning the Development, two sets of "record drawings" of the Development.

DECOMMISSIONING OF PREVIOUSLY EXISTING WASTEWATER TREATMENT PLANT

62. The Licencee shall, within six months of commissioning the Development, submit to the Director for approval, a plan to decommission or re-purpose all components of the previously existing WWTP that operated under Licence No. 2265 R that were not proposed to become components of the WWTP that will operate under this Licence.

63. The Licencee shall, within one year of the decommissioning plan being approved by the Director, implement the approved decommissioning plan.

REVIEW AND REVOCATION

A. Licence No. 2265 R is rescinded.

B. If, in the opinion of the Director, the Licencee 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.

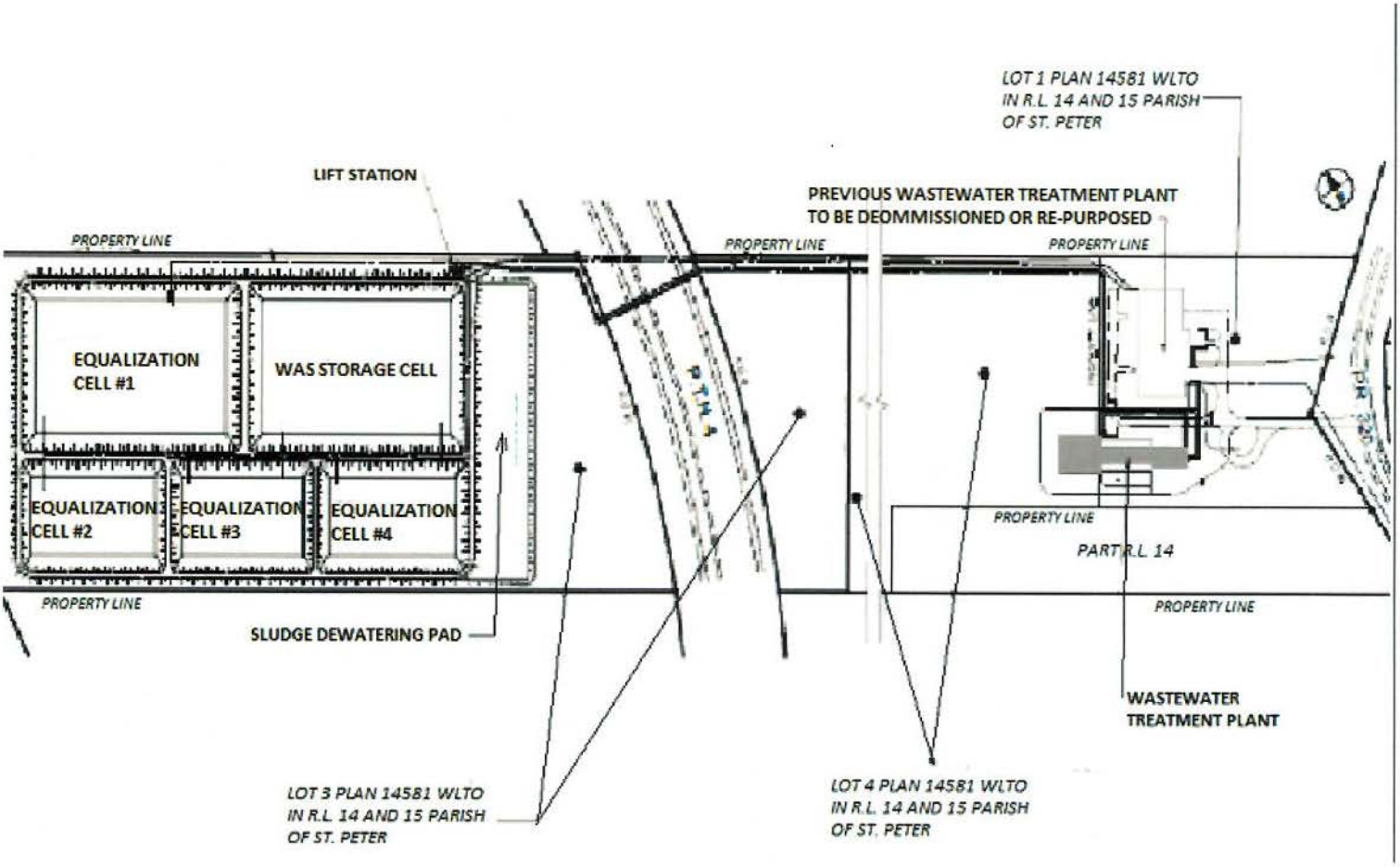
C. If, in the opinion of the Director, new evidence warrants a change in the specifications, limits, terms or conditions of this Licence, the Director may require the filing of a new proposal pursuant to Section 11 of The Environment Act.

[redacted]

Tracey Braun, M.Sc.
Director
Environment Act

Client File No.: 140.40

Schedule "A" to Environment Act Licence No. 3273



Not to Scale

Schedule "B" to Environment Act Licence No. 3273

Initial Characterization of Wastewater Pursuant to Clause 49

Facility Size: Medium (greater than 2500 m^3/day but less than 17,500 m^3/day)
Facility Type: Wastewater Treatment Plant - Continuous discharge

Effluent Sampling:

During the first year of operation:
1. a grab sample shall be collected every two weeks;
2. a grab sample shall be collected on a quarterly basis; and
3. a grab sample shall be collected on a daily basis, if chlorine is used.

Effluent Analysis:

1. Have the bi-weekly 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 indicted 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 quarterly sample analyzed for:
   a) fluoride;
   b) nitrate;
   c) nitrate + nitrite;
   d) total extractable metals and metal hydrides (full range);
   e) chemical oxygen demand (COD);
   f) organochlorine pesticides;
   g) polychlorinated biphenyls (PCBs);
   h) polycyclic aromatic hydrocarbon (PAHs);

i) cyanide (total);
j) pH;
k) volatile organic compounds;
l) mercury;
m) phenolic compounds;
n) surfactants;
o) acute toxicity; and
p) chronic toxicity.

3. 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.

Schedule "C" to Environment Act Licence No. 3273

Soil Sampling and Testing Pursuant to Clause 59

Soil Sampling:

1. The Licencee 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 Licencee 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 Licencee as to the soil testing method that must be used on each sample. The oedometer method may be used for a sample were 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 Licencee 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: a plot plan indicating 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.

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 were the sample was taken, which ever 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.