

48. Granular bedding and backfill material shall consist of non-frozen material.
49. Waste substances shall be used, transported, stored or disposed of in such a manner that they are not deposited, or allowed to be deposited, into any Watercourse or on any surrounding land, unless authorized by this licence.
50. Except as authorized by this licence, no Waste shall enter any Watercourse as a result of any operation carried out by the Licensee.
51. All disturbed ground surfaces shall be stabilized in such a manner so as to prevent erosion and surface runoff from carrying sediment into any Watercourse.
52. Notification, including the name and phone number of the field supervisor, shall be provided to the Board, in writing, 10 days prior to the start of construction associated with maintenance.

#### **PART I - SITE DECOMMISSIONING AND RESTORATION**

53. The Licensee shall develop a decommissioning plan for the closure of the municipal water facility and wastewater treatment facility, and submit the plan to the Board 1 year prior to the commencement of decommissioning activities. The plan shall include, but not necessarily be limited to a schedule and cost for completion of decommissioning and reclamation activities. As part of each annual report, the Licensee shall report on the status of the decommissioning plan.
  54. All disturbed ground surfaces shall be re-graded in a manner which is consistent with the topography of the site and which prevents erosion and surface runoff from carrying sediment into any Watercourse. Where soil conditions permit, disturbed areas shall be re-vegetated with appropriate reclamation seeds and/or plant species that are native in Yukon.
  55. All construction materials, equipment, temporary structures and debris shall be removed from the site upon completion of the work.
  56. Subject to any required assessments, authorizations or approvals, the Licensee shall implement the plans required by this section of this licence.
-

**SCHEDULE A - MONITORING AND SURVEILLANCE REQUIREMENTS****1. a) LOCATIONS OF SURFACE WATER SAMPLING STATIONS**

<b>Sampling Station Identification</b>	<b>Description</b>
OCL 1	Wetland area hydraulically up-gradient and northwest of the lagoon
OCL 2	Wetland location just outside of the southeast corner of the lagoon
OCL 3 Secondary Compliance Point	Downstream of the confluence of any flow from the first culvert and the second culvert (includes the unnamed creek)
OCL 4	Before the unnamed creek and upstream of the second culvert
OCL 5	At the east end of the lagoon, inside the bermed area
OCL 6 Primary Compliance Point (prior to completion of constructed wetlands)	Upstream of the first culvert, on the east side of the road
OCL 7 (Primary Compliance Point after completion of constructed wetlands)	Outlet of constructed wetland

**1. b) LOCATIONS OF GROUNDWATER SAMPLING STATIONS**

<b>Sampling Station Identification</b>	<b>Description</b>
BH03	Groundwater well outside of southwest corner of lagoon berm
BH04	Groundwater south of lagoon berm, and north of metal lay-down area
BH05	Groundwater well outside of southeast corner of lagoon berm
BH06	Groundwater well outside of northeast side of lagoon berm
BH08	(Background) Groundwater well north of lagoon berm

## 2. SURFACE WATER SAMPLING AND MONITORING SCHEDULE (Prior to completion of constructed wetlands)

Analysis	Station					
	OCL 1 (background)	OCL 2	OCL 3 (secondary compliance point)	OCL 4	OCL 5	OCL 6 (primary compliance point)
pH	X	X	X	X	X	X
Specific Conductance <sup>1</sup>	X	X	X	X	X	X
Dissolved Oxygen <sup>2</sup>	X	X	X	X	X	X
Temperature <sup>2</sup>	X	X	X	X	X	X
Total Suspended Solids	X	X	X	X	X	X
Ammonia (total)	X	X	X	X	X	X
Unionized Ammonia			X			X
Nitrate	X	X	X	X	X	X
Nitrite	X	X	X	X	X	X
Total Phosphorus	X	X	X	X	X	X
Sulphate	X	X	X	X	X	X
CBOD <sub>5</sub>		X			X	X
Oil and Grease (total)					X	X
Fecal Coliforms		X			X	X
Bioassay <sup>3</sup> (LT <sub>50</sub> – 96 hr)						X
Flow Rate <sup>4</sup>	X	X	X	X		X
Lagoon water elevation <sup>5</sup>					X	

1 = In situ and in lab

2 = In situ

3 = Must have 96 hour rainbow trout mortality of 50% or less (LT<sub>50</sub>) and pH non-adjusted to be considered nontoxic.

4 = Flow rate will be measured and recorded.

5 = Water surface elevation is to be relative to known benchmark

### LEGEND

X = Four sampling events per year: first week in June, July, August, September.



### 3. SURFACE WATER MONITORING AND SAMPLING REQUIREMENTS (After completion of constructed wetlands)

Analysis	Station				
	OCL 1 (background)	OCL 3 (secondary compliance point)	OCL 4	OCL 5	OCL 7 (primary compliance point)
pH	X	X	X	X	X
Specific Conductance <sup>1</sup>	X	X	X	X	X
Dissolved Oxygen <sup>2</sup>	X	X	X	X	X
Temperature <sup>2</sup>	X	X	X	X	X
Total Suspended Solids	X	X	X	X	X
Ammonia (total)	X	X	X	X	X
Unionized Ammonia		X			X
Nitrate	X	X	X	X	X
Nitrite	X	X	X	X	X
Total Phosphorus	X	X	X	X	X
Sulphate	X	X	X	X	X
CBOD <sub>5</sub>				X	X
Oil and Grease (total)				X	X
Fecal Coliforms				X	X
Bioassay <sup>3</sup> (LT <sub>50</sub> – 96 hr)					X
Flow Rate <sup>4</sup>	X	X	X		X
Lagoon water elevation <sup>5</sup>				X	

1 = In situ and in lab

2 = In situ

3 = Must have 96 hour rainbow trout mortality of 50% or less (LT<sub>50</sub>) and pH non-adjusted to be considered nontoxic.

4 = Flow rate will be measured and recorded.

5 = Water surface elevation is to be relative to known benchmark

#### LEGEND

X = Four sampling events per year: first week in June, July, August, September.

**4. GROUNDWATER MONITORING AND SAMPLING REQUIREMENTS**

Analysis	Station				
	BH03	BH04	BH05	BH06	BH08 (background)
pH	X	X	X	X	X
Specific Conductance <sup>1</sup>	X	X	X	X	X
Dissolved Oxygen <sup>1</sup>	X	X	X	X	X
Temperature <sup>1</sup>	X	X	X	X	X
Ammonia (total)	X	X	X	X	X
Nitrate	X	X	X	X	X
Nitrite	X	X	X	X	X
Total Phosphorus	X	X	X	X	X
Sulphate	X	X	X	X	X
Oil and Grease (total)	X	X	X	X	
Fecal Coliforms	X	X	X	X	
Groundwater water elevation <sup>2</sup>	X	X	X	X	

<sup>1</sup> In situ<sup>2</sup> Groundwater elevation is to be relative to a known benchmark.**LEGEND**

X = Sampling of groundwater in September each year (during the same time as the surface water monitoring and sampling event)



Conditions of Water Licence MN17-028  
Amendment 1

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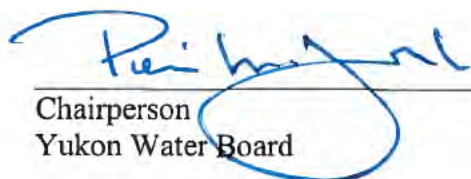
Approved this 10 day of  
November, 2018.

  
\_\_\_\_\_  
Witness

  
\_\_\_\_\_  
Minister, Executive Council Office  
Government of Yukon

Issued this 19 day of  
November, 2018.

  
\_\_\_\_\_  
Witness

  
\_\_\_\_\_  
Chairperson  
Yukon Water Board



## PART A - DEFINITIONS

“Act” means *Waters Act* and any amendments thereto.

“Application” means Water Licence Application MN17-028 and application for amendment MN17-028-1, including any additional submissions and/or revisions submitted to the Yukon Water Board by the Licensee, up to the date of the Board’s decision.

“Board” means the Yukon Water Board.

“Inspector” means any person designated as an Inspector under the Act.

“Natural Boundary” means the visible high water mark of any lake, river, stream or other body of water where the presence and action of water is so common and usual and so long continued as to mark upon the soil of the bed of the lake, river, stream or other body of water a character distinct from that of the banks thereof, both in respect to vegetation and in respect to the nature of the soil itself. In addition, the best estimates of the edge of dormant or old side channels and marsh areas are considered to be Natural Boundaries.

“Regulation” means the *Waters Regulation* made under the Act.

“Spill Contingency Plan” means the *Spill Contingency Plan Old Crow Wastewater Facility* that was submitted as part of application MN17-028 and included register MN17-028 as exhibit 1.2.8, and any subsequent revisions.

“Waste” means any substance as defined in the Act.

“Watercourse” means any stream, lake, pond, river, creek, spring, ravine or swamp whether ordinarily containing water or not.

“Wetted Perimeter” means the horizontal extent of the present water level while the work is taking place.

## PART B - GENERAL CONDITIONS

1. The Licensee shall ensure a copy of this Licence is maintained at the site during operations at all times

### Other Laws

2. No condition of the water use licence limits applicability of any statutory authority.
3. All construction or installation of works authorized by this licence shall occur on property that the Licensee has the right to enter upon and use for that purpose.



Correspondence

4. Where any direction, notice, order or report under this licence is required to be in writing, it shall be given:
- a) To the Licensee, if delivered, faxed, or mailed by registered mail, to the address identified on page 1 of this licence, and shall be deemed to have been given to the Licensee on the day it was delivered, faxed, or 7 days after the day it was mailed, as the case may be; or
  - b) To the Board, if delivered, faxed or mailed by registered mail to the following address:

Yukon Water Board  
Suite 106, 419 Range Road  
Whitehorse YT Y1A 3V1  
Fax: (867) 456-3890

and shall be deemed to have been given to the Board on the day it was delivered or faxed, or 7 days after the day it was mailed, as the case may be.
  - c) The Board or the Licensee may, by notice in writing, change its address for delivery.

Non-Compliance

5. In the event that the Licensee fails to comply with any provision or condition of this licence, the Board may, subject to the Act, cancel the licence.

Spills and Unauthorized Discharges

6. Where a spill or an unauthorized discharge occurs, that is of a reportable quantity under the Yukon *Spills Regulations*, the Licensee shall immediately contact the 24-hour Yukon Spill Report number, (867) 667-7244 and implement the Spill Contingency Plan. A detailed written report on any such event including, but not limited to, dates, quantities, parameters, causes and other relevant details and explanations, shall be submitted to the Board not later than 10 days after the occurrence.
7. The Licensee shall apply the relevant procedures in the Spill Contingency Plan. The Licensee shall review the Spill Contingency Plan annually and shall provide a summary of that review, including any revisions to the plan, as a component of the annual report.
8. The Licensee shall maintain a log book of all spill or unauthorized discharge occurrences, including spills that are less than the reportable quantities under the Yukon *Spills Regulations*. The log book shall be made available at the request of an Inspector. The log book shall include, but not necessarily be limited to the:
- a) date and time of the spill;
  - b) substance spilt or discharged;

- c) approximate amount spilt or discharged;
  - d) location of the spill;
  - e) distance between the spill or discharge and the nearest Watercourse; and
  - f) remedial measures taken to contain and clean-up the spill area or to cease the unauthorized discharge.
9. The Licensee shall include a summary of all spills or unauthorized discharges that occurred during the year reported, as part of the annual report.
10. All personnel shall be trained in procedures to be followed and the equipment to be used in the containment of a spill.

#### Fuel Storage and Transfer

12. Fuel, lubricants, hydraulic fluids, coolants and similar substances shall be stored and/or transferred a minimum of 30 metres from the Natural Boundary of any Watercourse, in such a way that said substances are not deposited in or allowed to be deposited in waters.

#### Reporting

13. The Licensee shall provide to the Board one unbound, single-sided, paper copy of all reports required by this licence. All reports must be reproducible by standard photocopier.
14. The Licensee shall upload electronic copies of all reports required by this licence to the Yukon Water Board's online licensing registry, Waterline. Electronic copies shall be submitted in one of the following formats: MS Word, MS Excel, or Adobe .pdf format. Water quality results must be uploaded to Waterline in the format outlined in the most recent version of "*Yukon's Laboratory Data Submissions Standards for Water Quality*". This guide is available on the Yukon Water Board website.

#### Water Sampling Event Reporting

15. Within one month of each sampling event the Licensee shall submit a monitoring report to the Board. The report shall include the following information, but not necessarily limited to:
- a) Final and complete analytical report from an accredited laboratory;
  - b) Comparison of analytical results in tabular format to the effluent quality standards listed in Part E of this licence; and,
  - c) Discussion of any irregularities and corrective action.

#### Annual Reports

16. The Licensee shall submit an annual report to the Board for the period of January 1 to December 31 of each year. Annual reports are to be submitted on or before March 31 of the year following the year reported. The report shall include the information required by the Regulation including, but not necessarily limited to:

- a) Data collected according to the requirements of Schedule A of this licence;
- b) Data collected during the annual inspection conducted by the Licensee which, at a minimum, will include:
  - i. Visual observations of the condition of the lagoon berms;
  - ii. Visual observation of the water surrounding the lagoon berms (e.g. odour, colour, evidence of flow, etc.);
  - iii. Visual observations of the vegetation surrounding the lagoon berms (e.g. vigor of growth, dying vegetation, etc.);
  - iv. Visual observations of surface drainage patterns (e.g. verify if this is in south-easterly direction toward the two culverts);
  - v. An estimate of the volume of wastewater in the lagoon (based on water level gauge (as per exhibit 1.4 of the Application) readings and area of lagoon);
  - vi. Representative photographs;
- c) The results of any physical inspections of the wastewater facility, as described in Part E of this licence;
- d) A detailed record of any major maintenance work carried out or planned to be carried out;
- e) Record of the daily number of eductor loads and quantity of wastewater deposited into the lagoon;
- f) Summary of data generated as a result of the monitoring requirements outlined in Part E of this licence, including analysis and interpretation by a qualified individual or firm and a discussion of any variances from baseline conditions or from previous years' data;
- g) Description of status of decommissioning plan as per Part H of this licence;
- h) Description of any major environmental events, which occurred throughout the year, with the potential to impact the wastewater treatment facility (e.g. flooding of the Porcupine River);
- i) Details of the methods, procedures, and standards used in the collection and sample testing;
- j) A detailed record of the operation of wastewater treatment facility, including operational difficulties, significant maintenance work, and modifications;
- k) Any other information or reports required by this licence or the Regulations; and
- l) Results of the groundwater monitoring program.

## **PART C - OPERATING CONDITIONS**



17. The Licensee is hereby authorized to:

- a) operate and maintain an existing wastewater treatment facility;
- b) to deposit a maximum of 45.5 cubic metres per day of wastewater into the lagoon;
- c) to deposit a waste, in the form of treated wastewater from the lagoon, to the Unnamed tributary of the Porcupine River;
- d) install septage receiving station and solids handling chamber;
- e) install laydown area for sludge dewatering and composting;
- f) construct earthworks and erosion protection;
- g) install constructed wetland treatment system;
- h) replace valve outfall structure; and
- i) construct drainage improvements between the south berm and access road,

as described in the Application, subject to the terms and conditions of this licence. Where there is a discrepancy between the Application and this licence, the conditions of this licence shall prevail.

- 18. The Licensee shall operate and maintain the wastewater treatment facility in a manner which is consistent with standard municipal practices.
- 19. The Licensee shall submit a sludge management plan for the wastewater treatment facility to the Board, in writing, within one year of the sludge drying beds construction being completed, or 30 days prior to the commencement of use of the sludge drying beds, whichever occurs first.
- 20. The Licensee is authorized to use a polymer to facilitate the dewatering of sludge. The Licensee must submit Material Data Safety Sheets (MSDS) to the Board prior to use of polymers.
- 21. Dewatered sludge from the sludge laydown area shall be disposed of in a manner that meets the requirements of appropriate legislation including, but not limited to, the *Environment Act* and associated regulations.
- 22. The Licensee shall submit a Wastewater Treatment Facility Operations Manual to the Board, in writing, within one year of any major construction works being completed; including, but not limited to, the septage receiving station and solids handling chamber, the outfall valve structure, and the sludge laydown area.

**PART D - DESIGN AND CONSTRUCTION**Design

23. Ten days prior to the commencement of construction, the Licensee shall submit to the Board final detailed design construction drawings for the septage receiving station, solids holding chamber, sludge drying beds, valve outfall structure, constructed wetlands, and associated infrastructure. The final detailed design drawings must be consistent with the drawings which were submitted as part of the Application and sealed by a Professional Engineer licensed to practice in Yukon. All construction shall be carried out in accordance with the final design drawings.
24. Within 60 days of completion of the construction of the septage receiving station, solids holding chamber, sludge drying beds, valve outfall structure, constructed wetlands, and associated infrastructure, the Licensee shall submit to the Board, as-built design drawings of the above-described infrastructure, sealed by a Professional Engineer licensed to practice in the Yukon.
25. Where site conditions require minor modifications to the designs submitted to the Board, the Licensee shall notify the Board, a minimum of 10 days in advance, of the details of the modifications or variations from final detailed design, specifications and quality assurance/quality control procedures previously submitted to the Board, provide a detailed construction schedule and the name and contact number(s) of the construction superintendent. The notice shall be in writing and must include an explanation of the reasons for the change and an assessment of the potential impact on the performance of the works. The notice shall be sealed by a Professional Engineer licensed to practice in Yukon.

Construction

26. All works associated with the undertaking shall be maintained in good repair.
27. Construction and/or maintenance equipment shall be mechanically sound and free of leaks.
28. Granular bedding and backfill material shall consist of non-frozen material.
29. Waste substances shall be used, transported, stored or disposed of in such a manner that they are not deposited, or allowed to be deposited, into any Watercourse or on any surrounding land, unless authorized by this licence.
30. Except as authorized by this licence, no Waste shall enter any Watercourse as a result of any operation carried out by the Licensee.
31. All disturbed ground surfaces shall be stabilized in such a manner so as to prevent erosion and surface runoff from carrying sediment into any Watercourse.

**PART E – EFFLUENT QUALITY STANDARDS**

32. Water discharge from the wastewater treatment facility at the primary and secondary compliance points, as described in Schedule A of this licence, shall meet the following effluent discharge standards:

Parameter	Maximum Concentration for any Sample
<b>Applicable to Primary Compliance Point<sup>1</sup></b>	
CBOD <sub>5</sub>	25 mg/L
pH	6 - 9
Oil and grease	5 mg/L
Fecal Coliforms	400 counts/100 ml
Total Suspended Solids	25 mg/L
Un-ionized Ammonia (NH <sub>3</sub> )	1.25 mg/L @ 15° C, +/- 1° C
Bioassay <sup>2</sup> (LT <sub>50</sub> – 96 hr) pH adjusted	non-toxic
Total Phosphorous (P)	1 mg/L
<b>Applicable to Secondary Compliance Point<sup>3</sup></b>	
Un-ionized Ammonia (NH <sub>3</sub> )	0.019 mg/L @ 15° C, +/- 1° C

1 = Primary Compliance Point as described in Schedule A of this licence.

2 = Must have 96 hour rainbow trout mortality of 50% or less (LT<sub>50</sub>), pH adjusted to be considered nontoxic.

3 = Secondary Compliance Point as described in Schedule A of this licence.

**PART F – MONITORING AND SURVEILLANCE**Water

33. The Licensee shall comply with the monitoring and surveillance requirements specified in Schedule A of this licence.
34. All data collection shall be conducted in accordance to a nationally recognized sampling protocol (e.g. CCME Protocols Manual for Water Quality Sampling in Canada, 2011).
35. Laboratory analyses shall be performed by a laboratory accredited under the International Organization for Standardization ISO/IEC 17025:2005 standard and the accreditation must include the actual tests being performed by the laboratory.
36. Water sampling stations OCL 1, OCL 2, OCL 3, OCL 4, OCL 5, OCL 6, and OCL 7 shall be sampled as specified in Schedule A.
37. Groundwater sampling stations BH03, BH04, BH05, BH06, and BH08 shall be sampled as specified in Schedule A.



Wastewater Input to Lagoon

38. The Licensee shall monitor and record daily the number of eductor loads and quantity of wastewater deposited into the lagoon.

Wastewater Discharge from the Lagoon

39. The Licensee shall monitor if effluent begins to exfiltrate through the lagoon. The findings shall be included in the annual report described in Part B of this licence.
40. If effluent begins to exfiltrate through the lagoon, the Licensee shall contact an Inspector immediately for mitigations.

Sludge

41. In August of each year the sludge levels in the facultative lagoon shall be measured and recorded.

Physical Inspections

42. An annual inspection of the wastewater facility shall be carried out by a Professional Engineer licensed to practice in Yukon. A report on the inspection, prepared by the Professional Engineer, shall be submitted as part of the annual report described in Part B of this licence. The report shall assess the condition and performance of the facility, include inspection locations and methodologies, present remedial measures recommended.
43. The Licensee shall monitor and record observations pertaining to the stability of the lagoon berms, in particular during or after high water events. If monitoring indicates potential berm failure, corrective action shall be taken immediately. The inspection findings shall be submitted as part of the annual report described in Part B of this licence.

**PART G – ASSESSMENTS / STUDIES**

44. The Licensee shall develop and implement a plan to manage the collection, storage and disposal the wastewater during a flood event. The Licensee shall submit this plan to the Board as part of the annual report by the third operating year authorized by this Licence.

**PART H – MAINTENANCE**

45. Lagoon berms shall be maintained annually to keep trees and shrubs from taking root, populating and destabilizing the lagoon and earthen structure.
46. All works associated with the undertaking shall be maintained in good repair.
47. Maintenance equipment shall be mechanically sound and free of leaks.

48. Granular bedding and backfill material shall consist of non-frozen material.
49. Waste substances shall be used, transported, stored or disposed of in such a manner that they are not deposited, or allowed to be deposited, into any Watercourse or on any surrounding land, unless authorized by this licence.
50. Except as authorized by this licence, no Waste shall enter any Watercourse as a result of any operation carried out by the Licensee.
51. All disturbed ground surfaces shall be stabilized in such a manner so as to prevent erosion and surface runoff from carrying sediment into any Watercourse.
52. Notification, including the name and phone number of the field supervisor, shall be provided to the Board, in writing, 10 days prior to the start of construction associated with maintenance.

#### **PART I - SITE DECOMMISSIONING AND RESTORATION**

53. The Licensee shall develop a decommissioning plan for the closure of the municipal water facility and wastewater treatment facility, and submit the plan to the Board 1 year prior to the commencement of decommissioning activities. The plan shall include, but not necessarily be limited to a schedule and cost for completion of decommissioning and reclamation activities. As part of each annual report, the Licensee shall report on the status of the decommissioning plan.
  54. All disturbed ground surfaces shall be re-graded in a manner which is consistent with the topography of the site and which prevents erosion and surface runoff from carrying sediment into any Watercourse. Where soil conditions permit, disturbed areas shall be re-vegetated with appropriate reclamation seeds and/or plant species that are native in Yukon.
  55. All construction materials, equipment, temporary structures and debris shall be removed from the site upon completion of the work.
  56. Subject to any required assessments, authorizations or approvals, the Licensee shall implement the plans required by this section of this licence.
-

## **SCHEDULE A - MONITORING AND SURVEILLANCE REQUIREMENTS**

### **1. a) LOCATIONS OF SURFACE WATER SAMPLING STATIONS**

<b>Sampling Station Identification</b>	<b>Description</b>
OCL 1	Wetland area hydraulically up-gradient and northwest of the lagoon
OCL 2	Wetland location just outside of the southeast corner of the lagoon
OCL 3 Secondary Compliance Point	Downstream of the confluence of any flow from the first culvert and the second culvert (includes the unnamed creek)
OCL 4	Before the unnamed creek and upstream of the second culvert
OCL 5	At the east end of the lagoon, inside the bermed area
OCL 6 Primary Compliance Point (prior to completion of constructed wetlands)	Upstream of the first culvert, on the east side of the road
OCL 7 (Primary Compliance Point after completion of constructed wetlands)	Outlet of constructed wetland

### **1. b) LOCATIONS OF GROUNDWATER SAMPLING STATIONS**

<b>Sampling Station Identification</b>	<b>Description</b>
BH03	Groundwater well outside of southwest corner of lagoon berm
BH04	Groundwater south of lagoon berm, and north of metal lay-down area
BH05	Groundwater well outside of southeast corner of lagoon berm
BH06	Groundwater well outside of northeast side of lagoon berm
BH08	(Background) Groundwater well north of lagoon berm



## 2. SURFACE WATER SAMPLING AND MONITORING SCHEDULE (Prior to completion of constructed wetlands)

Analysis	Station					
	OCL 1 (background)	OCL 2	OCL 3 (secondary compliance point)	OCL 4	OCL 5	OCL 6 (primary compliance point)
pH	X	X	X	X	X	X
Specific Conductance <sup>1</sup>	X	X	X	X	X	X
Dissolved Oxygen <sup>2</sup>	X	X	X	X	X	X
Temperature <sup>2</sup>	X	X	X	X	X	X
Total Suspended Solids	X	X	X	X	X	X
Ammonia (total)	X	X	X	X	X	X
Unionized Ammonia			X			X
Nitrate	X	X	X	X	X	X
Nitrite	X	X	X	X	X	X
Total Phosphorus	X	X	X	X	X	X
Sulphate	X	X	X	X	X	X
CBOD <sub>5</sub>		X			X	X
Oil and Grease (total)					X	X
Fecal Coliforms		X			X	X
Bioassay <sup>3</sup> (LT <sub>50</sub> – 96 hr)						X
Flow Rate <sup>4</sup>	X	X	X	X		X
Lagoon water elevation <sup>5</sup>					X	

1 = In situ and in lab

2 = In situ

3 = Must have 96 hour rainbow trout mortality of 50% or less (LT<sub>50</sub>) and pH adjusted to be considered nontoxic.

4 = Flow rate will be measured and recorded.

5 = Water surface elevation is to be relative to known benchmark

### LEGEND

X = Four sampling events per year: first week in June, July, August, September.

### 3. SURFACE WATER MONITORING AND SAMPLING REQUIREMENTS (After completion of constructed wetlands)

Analysis	Station				
	OCL 1 (background)	OCL 3 (secondary compliance point)	OCL 4	OCL 5	OCL 7 (primary compliance point)
pH	X	X	X	X	X
Specific Conductance <sup>1</sup>	X	X	X	X	X
Dissolved Oxygen <sup>2</sup>	X	X	X	X	X
Temperature <sup>2</sup>	X	X	X	X	X
Total Suspended Solids	X	X	X	X	X
Ammonia (total)	X	X	X	X	X
Unionized Ammonia		X			X
Nitrate	X	X	X	X	X
Nitrite	X	X	X	X	X
Total Phosphorus	X	X	X	X	X
Sulphate	X	X	X	X	X
CBOD <sub>5</sub>				X	X
Oil and Grease (total)				X	X
Fecal Coliforms				X	X
Bioassay <sup>3</sup> (LT <sub>50</sub> – 96 hr)					X
Flow Rate <sup>4</sup>	X	X	X		X
Lagoon water elevation <sup>5</sup>				X	

1 = In situ and in lab

2 = In situ

3 = Must have 96 hour rainbow trout mortality of 50% or less (LT<sub>50</sub>) and pH adjusted to be considered nontoxic.

4 = Flow rate will be measured and recorded.

5 = Water surface elevation is to be relative to known benchmark

#### LEGEND

X = Four sampling events per year: first week in June, July, August, September.

#### 4. GROUNDWATER MONITORING AND SAMPLING REQUIREMENTS

Analysis	Station				
	BH03	BH04	BH05	BH06	BH08 (background)
pH	X	X	X	X	X
Specific Conductance <sup>1</sup>	X	X	X	X	X
Dissolved Oxygen <sup>1</sup>	X	X	X	X	X
Temperature <sup>1</sup>	X	X	X	X	X
Ammonia (total)	X	X	X	X	X
Nitrate	X	X	X	X	X
Nitrite	X	X	X	X	X
Total Phosphorus	X	X	X	X	X
Sulphate	X	X	X	X	X
Oil and Grease (total)	X	X	X	X	
Fecal Coliforms	X	X	X	X	
Groundwater water elevation <sup>2</sup>	X	X	X	X	

<sup>1</sup> In situ

<sup>2</sup> Groundwater elevation is to be relative to a known benchmark.

#### LEGEND

X = Sampling of groundwater in September each year (during the same time as the surface water monitoring and sampling event)



## YUKON WATER BOARD

Pursuant to the *Waters Act and Regulation*, the Yukon Water Board hereby issues a water licence to:

<b>LICENSEE:</b>	City of Whitehorse
<b>CONTACT INFORMATION:</b>	2121 Second Avenue Whitehorse, YT Y1A 1C2 Email: <a href="mailto:larry.shipman@whitehorse.ca">larry.shipman@whitehorse.ca</a> <a href="mailto:taylor.eshpeter@whitehorse.ca">taylor.eshpeter@whitehorse.ca</a>
<b>LICENCE NUMBER:</b>	MN18-059
<b>RENEWAL:</b>	This licence is a renewal of MN93-001
<b>UNDERTAKING:</b>	Municipal <b>LICENCE TYPE: A</b>
<b>WATER MANAGEMENT AREA:</b>	02 Yukon
<b>WATER SOURCE:</b>	Selkirk Aquifer and Schwatka Lake
<b>MAXIMUM QUANTITY:</b>	20,000 cubic metres of water per day
<b>LOCATION:</b>	Whitehorse
<b>MAP CO-ORDINATES:</b>	Latitude: Max.: 60° 48' 02" N Min.: 60° 47' 02" Longitude: Max.: 135° 08' 08" W Min.: 135° 05' 00"
<b>PURPOSE:</b>	To obtain and store water for the municipal purposes and to deposit a waste to water.
<b>EFFECTIVE DATE:</b>	The effective date of this licence shall be the date on which the signature of the Chairperson of the Yukon Water Board is affixed.
<b>EXPIRY DATE:</b>	May 1, 2020

This licence is subject to the restrictions and conditions contained herein and to the restrictions and conditions contained in the *Waters Act and Regulation*.

Approved this 18 day of March, 2019.

D. Pillai  
Witness

[Signature]  
Minister, Executive Council Office  
Government of Yukon

Issued this 19<sup>th</sup> day of March, 2019.

[Signature]  
Witness

[Signature]  
Chairperson  
Yukon Water Board

**PART A – DEFINITIONS**

“Act” means *Waters Act* and any amendments thereto.

“Application” means Water Licence Application MN18-059 including any additional submissions and/or revisions submitted to the Yukon Water Board by the Licensee, up to the date of the Board’s decision.

“Board” means the Yukon Water Board.

“Inspector” means any person designated as an Inspector under the Act.

“LTECF” means the Livingston Trail Environmental Control Facility.

“Natural Boundary” means the visible high water mark of any lake, river, stream or other body of water where the presence and action of water is so common and usual and so long continued as to mark upon the soil of the bed of the lake, river, stream or other body of water a character distinct from that of the banks thereof, both in respect to vegetation and in respect to the nature of the soil itself. In addition, the best estimates of the edge of dormant or old side channels and marsh areas are considered to be Natural Boundaries.

“Operation and Maintenance Plan” means the *City of Whitehorse Water and Waste Services Operational Plan Water, Sanitary Sewer and Storm Water Systems* that was submitted as part of the Application and included in water licence register MN18-059 as exhibit 1.15 and any subsequent revisions.

“Regulation” means the *Waters Regulation* made under the Act.

“Spill Contingency Plan” means the *City of Whitehorse Spill Contingency Plan* that was submitted as part of the Application and included in water licence register MN18-059 as exhibit 1.7 and any subsequent revisions.

“Waste” means any substance as defined in the Act.

“Watercourse” means a natural watercourse, body of water or water supply, whether usually containing water or not, and includes groundwater, springs, swamps, and gulches.

**PART B – WATER USE AND DEPOSIT OF WASTE**

1. The Licensee is hereby authorized to:
  - a) obtain water from Schwatka Lake and from wells in the Selkirk aquifer to a maximum combined quantity of 20,000 cubic meters per day;
  - b) use water for municipal purposes;
  - c) store water in reservoirs;
  - d) convey water via a distribution system;
  - e) operate and maintain a water distribution system;
  - f) collect and convey sewage to, and store and treat sewage at the Crestview, Whitehorse and LTECF wastewater treatment facilities;
  - g) discharge treated wastewater to the Yukon River from the LTECF;
  - h) discharge treated wastewater to the Pothole Lake from the LTECF;
  - i) discharge treated wastewater to the Yukon River from the Whitehorse Sewage Lagoon, once per calendar year when such discharges are necessary for inspection, maintenance and/or repair of the lagoon;
  - j) discharge treated wastewater to groundwater from the Crestview wastewater treatment facility;
  - k) collect, convey and discharge storm water to the Yukon River through existing storm water outfalls;
  - l) operate and maintain sludge drying beds; and
  - m) apply dried sludge to the soil within the LTECF;

as described in the Application, and subject to the conditions of this licence. Where there is a discrepancy between the Application and this licence, the conditions of this licence shall prevail.

**PART C – OPERATING CONDITIONS**General

2. The Licensee shall operate and maintain all water supply, water distribution, sewage collection, sewage treatment and disposal systems, and storm water systems in a manner which is consistent with standard municipal practices for the types of systems being used.
3. Operation and maintenance equipment shall be maintained in good repair.
4. Except as authorized by this Licence, no Waste shall enter any Watercourse as a result of any operation carried out by the Licensee.



Public Protection

5. The Licensee shall maintain signage around the perimeters of the LTECF, the Crestview wastewater treatment facility, the Whitehorse lagoons, the Pothole Lake, and along the banks of the Yukon River in the vicinities of the effluent outfalls. Signs will provide a warning to the public of the existence of a wastewater treatment facility, expected timing of effluent discharge, and the potential for diminished surface and groundwater quality.

Effluent Discharge

6. The Licensee may discharge treated municipal wastewater to the Pothole Lake during the period of August 1 to December 15, or to the Yukon River during the period of September 1 to December 15.
7. The water level in the Pothole Lake shall be maintained at least two meters below the natural lowest height of land surrounding the lake.

Notification of Discharge

8. The Licensee shall notify the Board by July 15 prior to commencing any effluent discharge from the LTECF to the Yukon River. The notice will include confirmation that notice has been provided to the public.
9. The Licensee shall notify the Board at least one week prior to commencing any effluent discharge from the Whitehorse Lagoon to the Yukon River. The notice will include the results of the monitoring program required by this licence, and will include confirmation that notice has also been provided to Fisheries and Oceans Canada, to an Inspector and the public.

Sludge Management

10. Dried sludge that meets the standards listed in clause 25 shall only be disposed of in an appropriately signed location within the fenced footprint of the LTECF.

Spills and Unauthorized Discharges

11. Where a spill or an unauthorized discharge occurs that is of a reportable quantity under the Yukon *Spills Regulations*, the Licensee shall immediately contact the 24-hour Yukon Spill Report number, (867) 667-7244 and implement the *Spill Contingency Plan*. A detailed written report on any such event shall be submitted to the Board no later than 10 days after the occurrence. The report shall include but not be limited to:
  - a) date and time of occurrence;
  - b) substance spilt or discharged;
  - c) quantity of substance spilt or discharged;
  - d) location of the spill including distance to nearest Watercourse; and

- e) remedial actions taken to contain or cease the spill, and to clean-up the spill area.
12. The Licensee shall review the *Spill Contingency Plan* annually and shall provide a summary of that review, including any revisions to the plan, as a component of the annual report.
  13. The Licensee shall maintain a log book of all spill or unauthorized discharge occurrences, including spills that are less than the reportable quantities under the *Yukon Spills Regulations*. The log book shall be made available at the request of an Inspector. The log book shall include at minimum, the items identified in clause 11.
  14. The Licensee shall include a summary of all spills or unauthorized discharges that occurred during the year reported as part of the annual report.
  15. All relevant staff shall be trained in procedures to be followed and the equipment to be used in the containment of a spill.
  16. The *Spill Contingency Plan* shall be posted on site for the duration of the works.

#### Fuel Storage and Transfer

17. Fuel, lubricants, hydraulic fluids, coolants and similar substances shall be stored and/or transferred a minimum of 30 metres from the Natural Boundary of any Watercourse, in such a way that said substances are not deposited in waters.

#### Hazardous Materials

18. A complete inventory of chemicals, fuels, oils, lubricants and other hazardous materials contained in the facilities relating to the water uses authorized by this licence shall be maintained by the Licensee.

#### Deliverables

19. The Licensee shall provide to the Board, one unbound, single-sided, paper copy of all deliverables required by this licence. All deliverables, with the exception of design drawings, must be reproducible by standard photocopier.
20. The Licensee shall upload electronic copies of all deliverables required by this licence to the Yukon Water Board's online licensing registry, Waterline. Electronic copies shall be submitted in one of the following formats: MS Word, MS Excel, or Adobe.pdf. Water quantity/water level results must be submitted in MS Excel, and water quality results must be in the format outlined in the most recent version of Yukon's "*Laboratory Data Submission Standards for Water Quality*". This guide is available on the Yukon Water Board website.

#### Annual Reports

21. The Licensee shall submit annual reports to the Board for the period of January 1 to December 31 of each year. Annual reports are to be submitted to the Board on or before April 1 of the

year following the year reported. The report shall include the information required by the Regulation including, but not necessarily limited to:

- a) a description of the water use operations carried out during the year;
- b) the quantity of water used each day;
- c) the total number of days of wastewater effluent discharge to the Yukon River from the LTECF and the total volume of wastewater discharged.
- d) the total number of days of wastewater effluent discharge to the Yukon River from the Whitehorse Lagoons and the total volume of wastewater discharged.
- e) summaries of all data generated as required by the monitoring and surveillance requirements of this licence, and an analysis and interpretation of the data by an individual qualified to do so.
- f) details of the methods, procedures and standards used in the data collection and sampling testing;
- g) a detailed record of the operations of the wastewater treatment facilities including operational difficulties, including monthly inspection reports;
- h) physical inspection reports including photographs, repairs or plans for modification as required by clause 35 of this licence;
- i) details of any maintenance, repairs, or improvements to all physical works, including details of how recommendations from inspections reports have been addressed;
- j) summary of the review and revisions of the *Spill Contingency Plan*;
- k) records of all spills/unauthorized discharges;
- l) details of any work carried out or planned to be carried out under the *Operations and Maintenance Plan*;
- m) a record of maintenance activities for the year reported;
- n) a summary of expected maintenance activities for the next year; and
- o) details of sludge management as required by clause 34.

#### Monthly Reports

22. Unless otherwise specified in this licence, the Licensee shall forward to the Board a copy of all data collected as part of the monitoring programs as described in Schedule A of this licence, no more than 30 days after the conclusion of the month in which that data was collected.