



CITY OF YELLOWKNIFE

February 5th, 2021

Mackenzie Valley Land and Water Board
Box 2130, 7th Floor - 4910 50th Avenue
Yellowknife, NT X1A 2P6
smontgomery@mvlwb.com



Received: February 5, 2021

File #: MV2021L3-0003

Copied to: EJ / Registry

Attention: Shelagh Montgomery, Executive Director

RE: Application for Renewal of Municipal Water Licence

Dear Ms. Montgomery,

Enclosed is the application for renewal of municipal, Type A Water Licence MV2009L3-0007, which expires on May 30, 2022.

Documents included to support this water licence renewal application are as follows:

1. **Water licence application form**
2. **Licence Conformity Table (Water Licence MV2009L3-007 Annex A Schedule)**
3. **The Municipal Ordinance from the Government of the Northwest Territories**
4. **Figure 1 illustrating the general plan view of the City boundaries, associated Facilities and project structure locations, watercourses and water sources.**
5. **A plain language summary for the Management Plans and Operations and Maintenance (O&M) Plans**
6. **Management Plans and O&M Manuals**
 - Solid Waste Facility O&M Manual (2021)
 - Compost Facility O&M Manual (2021)
 - Hazardous Waste Management Plan (2021)
 - Solid Waste Facility Interim Closure and Reclamation Plan (2021)
 - Solid Waste Facility Interim Groundwater Monitoring Plan (2021)
 - Stormwater Management Plan (2021) and the Conformity Table

- Yellowknife Water Treatment Plant Operation and Maintenance Manual (2021)
- Sewage Disposal Facilities Operations and Maintenance Manual (2021)
- Fiddler's Lake Treatment System Management Plan (2021)
- Spill Contingency Plan (2021)

7. Engagement

- Engagement Plan
- Engagement Log
- Engagement Report

8. Studies undertaken to date and not previously uploaded to the MVLWB Registry

- Potable Water Source Selection (2017)
- Lagoon Sludge Volume Assessment (2019)
- SWF Hydrogeological Desktop Study (ongoing)

Hyperlinks to studies previously submitted to the MVLWB Registry are also included within the Application form (section 12).

9. Construction Figures for dams, storage reservoirs, and the deposit of waste

- Treated Water Reservoir Plan
- Fiddler's Lake Sewage Lagoon Dam and Dyke Structures
- Solid Waste Facility Site Works and Geomembrane Liner Install

Should you have any questions or require additional information, please contact me at (867) 920-5639 or by email at mwarren@yellowknife.ca.

Sincerely,



Madison Warren
Municipal Engineer (EIT)
Public Works and Engineering

Enclosures:

- Water Licence application form
- The Municipal Ordinance from the Government of the Northwest Territories
- Figure 1: Plan View of the City
- Figure 2: Yellowknife Heritage Sites
- Plain language summary for the Management Plans and Operations and Maintenance (O&M) Plans
- Solid Waste Facility O&M Plan
- Compost Facility O&M Plan
- Hazardous Waste Management Plan
- Interim Closure and Reclamation Plan
- Solid Waste Facility Interim Groundwater Monitoring Plan
- Conformity Table for Stormwater Management Plan
- Stormwater Management Plan
- Yellowknife Water Treatment Plant Operations and Maintenance Manual
- Sewage Disposal Facilities Operations and Maintenance Manual
- Fiddler's Lake Treatment System Management Plan
- Spill Contingency Plan
- Engagement Log
- Engagement Report
- Engagement Plan
- Potable Water Source Selection (2017)
- Lagoon Sludge Volume Assessment (2019)
- Construction Figures:
 - Treated Water Reservoir Plan
 - Fiddler's Lake Sewage Lagoon Dam and Dyke Structures
 - Solid Waste Facility Site Works and Geomembrane Liner Install

Land and Water Boards of the Mackenzie Valley



APPLICATION FOR RENEWAL OF LICENCE IN NON-FEDERAL AREAS

"X" indicates which Board the Application is being made to:	Mackenzie Valley Land and Water Board:	X	Sahtu Land and Water Board:	N/A
	Wek'èezhii Land and Water Board:	N/A	Gwich'in Land and Water Board:	N/A

To complete this form, the MVLWB [Guide to the Water Licensing Process \(Guide\)](#) was referred to, the grey fields filled, and additional pages attached and indicated in the specific sections below, as necessary. N/A has been applied to the grey fields for items or parts of items that are not applicable to the City of Yellowknife's water licence renewal application.

The current Water Licence number:	MV2009L3-0007		
"X" indicates if this Application is accompanied by another Application for a Water Licence in a federal area and/or a Land Use Permit.	Water Licence:	X	
	Land Use Permit:	N/A	

1. NAME AND CONTACT INFORMATION – APPLICANT

Applicant's Name:	Madison Warren		
Position:	Municipal Engineer		
Mailing Address:	4910 52 Street, Box 580		
Community:	Yellowknife	Telephone:	(867) 920-5639
Prov/Terr:	Northwest Territories	Email:	mwarren@yellowknife.ca
Postal Code:	X1A 2N4	Other:	N/A

2. NAME AND CONTACT INFORMATION – APPLICANT'S HEAD OFFICE

The Municipal Ordinance from the Government of the Northwest Territories is attached. The following table presents the name and contact information of the applicant's Head Office.

"X" indicates if this information is the same as Item 1 above:	N/A		
Name:	Wendy Newton		
Position:	Manager, Engineering Division		
Mailing Address:	4910 52 Street, Box 580		
Community:	Yellowknife	Telephone:	(867) 920-5689
Prov/Terr:	Northwest Territories	Email:	wnewton@yellowknife.ca
Postal Code:	X1A 2N4	Other:	N/A

3. LOCATION OF PROJECT

Figure 1 (attached) is a general plan view of the City boundaries and associated Facilities that identifies local geographic features, watercourses and water sources, project structures, and location(s) of waste deposits. For more details please refer to the attached facility plans and operations and maintenance manuals applicable to water withdrawal or waste deposit.

The maximum and minimum latitude and longitude for the Yellowknife boundary is presented in the following table:

Minimum latitude:	62° 24' 30.73388"N	Maximum latitude:	62° 32' 30.74986"N
Minimum longitude:	114° 31' 4.67323" W	Maximum longitude:	114° 18' 4.66409"W

The geographic information for project structures are as follows:

- Water Treatment Plant- Lat:62.45001 Degrees N, Long:114.35279 Degrees W
- Fiddler’s Lagoon- Lat: 62.45159 Degrees N, Long:114.56802 Degrees W
- Solid Waste Facility- Lat:62.47514 Degrees N, Long:114.37653 Degrees W

NTS Map Sheet No.: Provide the map sheet number:

085J

Land Types: Use an “X” to indicate the type(s) of land on which the activities are proposed:

Free Hold/ Private:	N/A	Commissioner’s/ Territorial Lands:	N/A	Federal Land:	N/A	Municipal Land:	X
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4. DESCRIPTION OF PROJECT

The City’s activities are described in the grey field provided below. The Operations and Maintenance Manuals, Management Plans, and summaries describing the activities are included with the Application Package.

The City of Yellowknife is applying for a water licence renewal to draw water from local waterbodies and to deposit waste. The City is requesting that the water licence renewal be for a 15-year period. This is based on the following rationale:

- The City is a mature municipality and capital city and will continue to exist in the future. Preparing a water licence renewal application is complex and takes significant resources (time and tax dollars). It generally takes 2-3 years to complete the renewal application process.
- The City personnel include technically qualified and responsible staff that are working towards transparency and building relationships with community and regulating entities to operate with social and environmental compliance.

The City’s 2019 Community Plan (not included with this application) provides a 2018 residential population estimate of 20,607 persons. The Plan notes that the NWT Bureau of Statistics projects an annual City growth rate in the range of 0.5% to 0.7%. Using the low growth of this range, the projected 2050 population is approximately 24,200 persons. The City does not have specific growth rate projection information for these areas. However, the City expects any such growth to mirror the low growth of the City’s own population.

Activities undertaken by the City are municipal and include water treatment, solid waste management and storage, stormwater management, and wastewater (sewage) management for the city. Water Licence Renewal Application comprises a series of documents that cover the main aspects of the City’s waste and water management as follows:

Water Treatment

Water Treatment Plant (WTP) Operations and Maintenance Manual: Describes in detail the water supply, treatment (chemical/physical) processes, waste (residuals) treatment/disposal and related instrumentation and automation controls used at the WTP. The Manual provides information on how waste from the water treatment process is managed and the relationship between the WTP and the City's wastewater collection and disposal facilities.

For the new licence, The City is requesting that when water is withdrawn from Yellowknife Bay for non-emergency and emergency purposes, notification will be provided to the ENR Inspector Officer and a request for permission not required. This was an item that required further clarification during technical discussions based on the current water licence. MVLWB recommended that this be clarified in the new licence (email from Heather Beck, July 3, 2020).

Solid Waste

Solid Waste Facility Operations and Maintenance Manual: Describes the procedures to properly operate and maintain the solid waste facility in a manner that limits the environmental impacts and nuisances (e.g. odours, attracting animals). This includes procedures for disposal of waste materials generated in the City of Yellowknife, leachate management, and monitoring requirements. The Manual also describes inspection and maintenance requirements to maintain an organized and clean site that functions as designed.

Hazardous Waste Management Plan: Describes what types of hazardous materials are accepted and not accepted at the Solid Waste Facility. It also describes the associated health and environmental hazards for the accepted hazardous waste, and the methods for managing, handling, and storing the material prior to shipping it off site.

Compost Facility Operations and Maintenance Manual: Describes the procedures to properly operate and maintain the compost facility in a manner to produce a high-quality final product, as well as limits the environmental impacts and nuisances. This includes procedures for managing and testing materials through the composting process, management of generated leachate, and monitoring requirements. The Manual also describes inspection and maintenance requirements to maintain an organized and clean site that functions as designed.

Solid Waste Facility Interim Closure and Reclamation Plan: Describes the procedures for the closure of the landfill as waste reaches the designed height. Closure includes the construction/installation of a cover system that is designed to reduce water infiltration to prevent leachate being produced. The City is required to show how it plans to deal with the leachate from its landfill over the long term and reduce environmental impacts as well as prevent human exposure to waste. The Plan also includes the requirements for cleaning up the site during closure and monitoring of the facility for any potential impacts on the surrounding environment.

Solid Waste Facility Interim Groundwater Monitoring Plan: Describes the present groundwater monitoring activities undertaken by the City. The City has installed multiple groundwater monitoring wells at the Solid Waste Facility to monitor potential impacts on groundwater as it relates to landfill activities. This activity is intended to mitigate contamination off site.

Stormwater

Stormwater Management Plan: Describes the City's infrastructure that collects and diverts rainwater and snow melt (stormwater), the maintenance of this infrastructure, and the City's strategies to minimize

urban stormwater impacts on the environment. Key components of this Plan are pollution control measures, public education programs, and a stormwater monitoring program.

Wastewater

Sewage Disposal Facilities Operations and Maintenance Manual: Provides information to assist City personnel with the operation and maintenance of the Yellowknife wastewater facilities, which includes the wastewater collection pipe system, wastewater pumping/lift stations, and the Fiddler’s Lake Treatment System (FLTS) that includes a facultative lagoon and a wetland system. The Manual also includes trucked waste, “honey bag” and animal wastes management information. The Manual describes requirements and guidance for the sampling and monitoring program, record keeping, safety procedures, FLTS site access control, and emergency response.

Fiddler’s Lake Treatment System Management Plan: Describes the FLTS elements, current effluent requirements and objectives, and actual effluent quality relative to these needs. Water quality trends and other observations in the effluent receiving environment are discussed, which are used to inform proposed changes to effluent quality requirements and objectives, water quality triggers and thresholds, and Surveillance Network Program requirements. FLTS contingency planning is also discussed, highlighting actions the City could take if required.

Spill Contingency

Spill Contingency Plan: Provides information to assist City personnel with spill prevention and response. The Plan includes spill response methods by types of spill and locations, relevant contact information, reporting requirements, and spill response equipment.

5. TYPE OF UNDERTAKING

Based on Schedule B of the [Waters Regulations](#). The “X” indicates which one type of undertaking applies:

1	Industrial	N/A	
2	Mining and milling	N/A	
3	Municipal	X	
4	Power	N/A	
5	Agriculture	N/A	
6	Conservation	N/A	
7	Recreation	N/A	
8	Miscellaneous	N/A	(describe): N/A

6. WATER USE CRITERIA

Based on Schedules D to H of the [Waters Regulations](#). The “X” indicates which criteria apply:

	N/A	Type A	
To obtain water	N/A	X	
To cross a watercourse	N/A	N/A	
To modify the bed or bank of a watercourse	N/A	N/A	
Flood control	N/A	N/A	
To divert water	N/A	N/A	
To alter the flow of, or store, water	N/A	N/A	
Other	N/A	N/A	(describe): N/A

7. PROPOSED QUANTITY OF WATER INVOLVED

The purpose of each water use, name, and type (e.g., lake, river) of the water source, the location, and the quantity of water used are summarized in the grey fields below.

Purpose of Water Use	Name and Type of Water Source	Location	Geographic Coordinates		Proposed Water Use Volume/Rate, including units
			Latitude	Longitude	
Drinking Water	River, Yellowknife River	Near Pumphouse #2	62.52138 degrees N	114.31769 degrees W	4 million m ³ /year or 575,000 m ³ /month
Emergency Water Needs	Lake, Yellowknife Bay	Near Pumphouse #1	62.45112 degrees N	114.35188 degrees W	N/A
Maintenance Water Needs	Lake, Yellowknife Bay	Near Pumphouse #1	62.45112 degrees N	114.35188 degrees W	300 m ³ /month

For each water source identified in the table above, a comparison of total proposed water use to the available capacity is listed.

Water Source	Capacity of Water Source, including units	Other Users of the Water Source	Comparison of Total Proposed Water Use to Available Capacity
Yellowknife River	1.157 km ³ /year (mean annual)	No	The water use is negligible compared to the capacity
Great Slave lake	Approximately 2,088 km ³	Various town, cities and villages. The combined water usage is negligible compared to the total available volume of Great Slave Lake.	The water use is negligible compared to the capacity

8. PROPOSED WASTE MANAGEMENT METHODS

The City's Management Plans and Operations and Maintenance Manuals describe the waste management methods and are included with this Application Package. The proposed effluent quality criteria for the Fiddler's Lake Treatment System (FLTS) is included in the Management Plan. A plain language summary for the documents is attached to this application. Proposed waste removal contractors retained by the City are listed in Section 11 (below).

See attached document summary and included Management Plans and Operations and Maintenance Manuals.

9. EXISTING WATER USERS AFFECTED BY THIS PROJECT

Pre-Application engagement efforts are summarized in the grey field below. The Engagement Plan, Logs, and Report are included with this Application Package.

Name:	A comprehensive list of stakeholders was developed. All groups listed below received a formal notification of the City's plans for licence renewal and were invited to provide feedback. They also received regular updates about information materials produced by the City and opportunities for engagement.
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	<p>Primary stakeholders *Stakeholders we anticipate will want to more actively participate in the engagement process</p> <ul style="list-style-type: none"> • Yellowknife residents • Residents of Ndilo and Dettah • Yellowknives Dene First Nation (YKDFN) (with a cc to Akaitcho Treaty 8) • North Slave Métis Alliance (NSMA) 	<p>Secondary stakeholders *Others who will be notified and may choose to provide comments</p> <ul style="list-style-type: none"> • Yellowknife Ski Club (nearby lease holder) • Tłıchǫ Government • Northwest Territory Métis Nation (cc to Fort Resolution Métis Council requested) • Mountain Island Métis • Crown-Indigenous Relations and Northern Affairs Canada (NWT Region) • GNWT Municipal and Community Affairs
	<p>Regulating bodies invited to participate in the informal technical reference group are listed below. While this engagement is not required by the Board it was considered a helpful process to improve the overall quality of the water licence submission.</p>	
	<p>Primary regulatory agencies *Have a direct interest in the Water Licence</p> <ul style="list-style-type: none"> • GNWT Department of Environment and Natural Resources (ENR) • Environment and Climate Change Canada (ECCC) • Fisheries and Oceans Canada (DFO) 	<p>Also invited to participate in technical discussions:</p> <ul style="list-style-type: none"> • Yellowknives Dene First Nation (YKDFN) • North Slave Métis Alliance (NSMA) • GNWT Municipal and Community Affairs
Territory:	NWT	
Describe Engagement Completed:	The Engagement Plan, Logs, and Report are attached.	

10. POTENTIAL ENVIRONMENTAL IMPACTS OF THE PROJECT AND PROPOSED MITIGATIONS

The Impact-Mitigation Table below identifies potential impacts and possible mitigations that are relevant to the City’s operations.

ABIOTIC COMPONENTS

Land

Land			
Extent of land area to be disturbed (m ² or ha)			
Are sensitive land features present? If so, indicate the type(s): karsts, eskers, ice patches, mineral licks, hot and warm springs, glacial refugia, other	N/A		
Extent of sensitive land areas to be disturbed (m ² or ha)	N/A		
Potential Impacts	Activity <i>Use an "x" to indicate which apply</i>	X	Potential Project Impacts and Proposed Mitigations <i>Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.</i>
<ul style="list-style-type: none"> • Soil contamination • Soil compaction • Destabilization/erosion • Change in soil structure • Inability to support vegetation • Other 	Clearing of timber, brush, or vegetation mat	N/A	N/A
	Stripping of overburden	N/A	N/A
	Bulk soil sampling	N/A	N/A
	Trenching, diamond drilling, geotechnical borehole drilling	N/A	N/A
	Cut and fill	N/A	N/A
	Oil and gas exploration well drilling	N/A	N/A
	Directional drilling (underground)	N/A	N/A
	On-site storage or disposal of wastes (domestic garbage, sewage, waste petroleum products, hazardous wastes, etc.)	X	Refer to the Solid Waste Facility Plans/Manuals and FLTS Management Plan included with this Application.

	Transfer, storage, and use of petroleum products and/or chemicals	N/A	N/A
	Transfer, storage, and use of explosives	N/A	N/A
	Use of fertilizers, pesticides, herbicides	N/A	N/A
	Use of motorized and heavy equipment	N/A	N/A
	Other	N/A	N/A
Water			
Groundwater			
Is groundwater present? If so, indicate the type(s): shallow, deep, fresh, saline	Groundwater is present at the Solid Waste Facility and is monitored by the City. Monitoring wells located at the Solid Waste Facility indicate there is shallow fresh groundwater present in overburden surficial geology, and deeper fresh groundwater in bedrock fractures. Please see the SWF Interim Groundwater Monitoring Plan included in this Application Package.		
Potential Impacts	Activity <i>Use an "x" to indicate which apply</i>	X	Potential Project Impacts and Proposed Mitigations <i>Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.</i>
<ul style="list-style-type: none"> • Water table alteration • Infiltration changes • Changes in water quality • Temperature changes • Other 	Withdrawal of groundwater	N/A	N/A
	Trenching, diamond drilling, geotechnical borehole drilling	N/A	N/A
	Installation of groundwater monitoring wells	X	Refer to the Interim Groundwater Plan and SWF Hydrogeological Desktop Study included with this Application.
	Directional drilling (underground)	N/A	N/A
	Oil and gas exploration well drilling	N/A	N/A
	Clearing of timber, brush, or vegetation mat	N/A	N/A
	Stripping of overburden	N/A	N/A
	Transfer, storage, and use of	N/A	N/A

	petroleum products and/or chemicals		
	Other	N/A	N/A
Permafrost			
Is permafrost present? If so, indicate the type(s): continuous or discontinuous	Present permafrost is understood to be discontinuous in the region.		
Extent of permafrost area to be disturbed (m ² or ha)	Expansion of the City's operations is not planned as part of this Application renewal, and permafrost is not expected to be disturbed.		
Potential Impacts	Activity <i>Use an "x" to indicate which apply</i>	X	Potential Project Impacts and Proposed Mitigations <i>Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.</i>
<ul style="list-style-type: none"> • Loss or change in extent • Changes in seasonal fluctuations • Change in persistence 	Clearing of timber, brush, or vegetation mat	N/A	N/A
	Stripping of overburden	N/A	N/A
	Construction of structures (buildings, water or waste management facilities, etc.)	N/A	N/A
	Construction (development or alteration: widening, straightening, detours), maintenance, and operation of lines, trails, or rights-of-way	N/A	N/A
	Trenching, diamond drilling, geotechnical borehole drilling	N/A	N/A
	Other	N/A	N/A
Surface Water			
Is surface water present? If so, indicate the type(s): lake, river, stream, wetland (bog, marsh, swamp, fen), seasonal, year-round	Yes. Types of surface water are lake, river, stream, and wetland.		
Potential Impacts	Activity		Potential Project Impacts and Proposed Mitigations

	<i>Use an "x" to indicate which apply</i>	X	<i>Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.</i>
<ul style="list-style-type: none"> • Water flow or level changes (permanent, temporary, seasonal) • Drainage pattern changes • Temperature changes • Changes in water quality • Wetland impairment • Changes to aquatic habitat (see Biotic section below) • Other 	Withdrawal of water from a watercourse	X	Refer to the WTP O&M Manual included with this Application.
	Retaining, storing, or diverting water	X	Refer to the WTP O&M Manual included with this Application.
	Construction and use of a watercourse crossing (bridge, ford)	N/A	N/A
	Watercourse alteration (ditch construction, channelling, training, installation of culvert)	X	Refer to the Stormwater Management Plan included with this Application.
	Construction of dams and impoundments	X	Refer to the FLTS Management Plan included with this Application.
	Direct or indirect disposal of waste into water	X	Refer to the FLTS Management Plan included with this Application.
	Clearing of timber, brush, or vegetation mat near a watercourse	N/A	N/A
	Stripping of overburden adjacent to a watercourse	N/A	N/A
	Excavation or stockpiling of earth or gravel adjacent to a watercourse	N/A	N/A
	Use of motorized or heavy equipment adjacent to, within, or through a watercourse	N/A	N/A
	Transfer, storage, and use of petroleum products and/or chemicals near a	N/A	N/A

	watercourse		
	Use of fertilizers, pesticides, or herbicides	N/A	N/A
	Other	N/A	N/A
Air			
If applicable, indicate the type(s) of air pollutants: aerosols, particulate matter, noxious gases, volatile organic carbons, hazardous air pollutants, dust, other	N/A		
Indicate the estimated maximum dispersal distance	N/A		
Potential Impacts	Activity <i>Use an "x" to indicate which apply</i>	X	Potential Project Impacts and Proposed Mitigations <i>Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.</i>
<ul style="list-style-type: none"> • Changes in air quality • Harm to living things • Increased greenhouse gases • Other 	Burning of fossil fuels	N/A	N/A
	Mobilization and operation of equipment for construction and operational activities	N/A	N/A
	Release of underground gases	N/A	N/A
	Increased road traffic	X	Traffic is present and will increase with population growth. The current infrastructure will not cause additional impacts on air quality or harm living things.
	Other	N/A	N/A
BIOTIC COMPONENTS			
Vegetation			
If vegetation will be removed or compacted, indicate type(s):	N/A		

trees, shrubs, thickets, muskeg, Species at Risk plants, may-be-at-risk plant species, other			
Extent of vegetation to be removed or compacted (m ³ or ha)	N/A		
Potential Impacts	Activity <i>Use an "x" to indicate which apply</i>	X	Potential Project Impacts and Proposed Mitigations <i>Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.</i>
<ul style="list-style-type: none"> • Direct loss of vegetation • Loss of Species at Risk or may-be-at-risk plants • Change in species composition • Introduction of non-native (invasive) species • Effects on plant health (dust, metals, toxins) • Increased risk of fire • Compaction of vegetation • Other 	Clearing of timber, brush, or vegetation mat	N/A	N/A
	Stripping of overburden	N/A	N/A
	Construction (development or alteration: widening, straightening, detours), maintenance, and operation of lines, trail, or rights-of-way	N/A	N/A
	Construction of structures (buildings, water or waste management facilities, etc.)	N/A	N/A
	Reclamation activities (levelling, contouring, placement of fines or woody debris, re-vegetation, fertilization)	N/A	N/A
	Use of motorized and heavy equipment	N/A	N/A
	Burning of fossil fuels	N/A	N/A
	Increased road traffic	N/A	N/A

	Transfer, storage, and use of petroleum products and/or chemicals	N/A	N/A
	Excavation or stockpiling of earth and/or gravel	N/A	N/A
	Other		
Terrestrial Wildlife Habitat			
If sensitive wildlife habitat is present, indicate type(s): Species at Risk (SAR), Canadian Important Bird Areas, migratory birds, keystone species, wildlife corridor	N/A		
Extent of sensitive wildlife habitat to be removed or disturbed (m ³ or ha)	N/A		
If wildlife habitat will be removed or disturbed, indicate type(s): ungulates, furbearers, carnivores, small mammals, birds, insects, sensitive wildlife habitat (as noted above)	N/A		
Extent of wildlife habitat to be removed or disturbed (m ³ or ha)	N/A		
Potential Impacts	Activity <i>Use an "x" to indicate which apply</i>	X	Potential Project Impacts and Proposed Mitigations <i>Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.</i>
<ul style="list-style-type: none"> Direct loss or removal of habitat, dens, or nests 	Clearing of timber, brush, or vegetation mat	N/A	N/A
	Stripping of overburden	N/A	N/A
	Construction of structures	N/A	N/A

<ul style="list-style-type: none"> • Loss or removal of keystone species and/or SAR habitat • Fragmentation of wildlife corridor • Direct injury or mortality • Disturbances to key lifecycle stages: breeding, feeding, nesting, staging • Effects on population abundance • Change in species diversity • Effects on wildlife health (toxins, metals, etc.) • Changes to migratory movement patterns • Changes to predator-prey relationships • Human-wildlife conflicts • Other 	(buildings, water or waste management facilities, etc.)		
	Construction (development or alteration: widening, straightening, detours), maintenance and operation of lines, trails, or rights-of-way	N/A	N/A
	Increased traffic risk to wildlife	N/A	N/A
	Increased human presence	N/A	N/A
	Noise (use of heavy equipment, blasting, crushing, drilling)	N/A	N/A
	Transfer, storage, and use of petroleum products and/or chemicals	N/A	N/A
	On-site storage or disposal of wastes (domestic garbage, sewage, waste petroleum products, drilling waste and hydraulic flowback fluids, hazardous wastes, etc.)	N/A	N/A
	On-site disposal of domestic wastes (burning, burying)	N/A	N/A
	Other	N/A	N/A
	Aquatic Habitat		

Indicate types of aquatic species: Species at Risk, fish, mammals (furbearers), amphibians, aquatic macroinvertebrates, insects, aquatic macrophytes	N/A		
Extent of aquatic habitat removed or disturbed for breeding, feeding, nesting, staging (m ³ or ha)	N/A		
Potential Impacts	Activity <i>Use an "x" to indicate which apply</i>	X	Potential Project Impacts and Proposed Mitigations <i>Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.</i>
<ul style="list-style-type: none"> • Breeding disturbances • Change in species diversity • Effects on health (toxins, metals, sediment, etc.) • Changes to migratory movement patterns • Changes to predator-prey relationships • Effects on population abundance • Change in species diversity • Other 	Clearing of timber, brush, or vegetation mat near a watercourse	N/A	N/A
	Stripping of overburden adjacent to a watercourse	N/A	N/A
	Blasting near a watercourse	N/A	N/A
	Construction and use of a watercourse crossing (bridge, ford)	N/A	N/A
	Watercourse alteration (ditch construction, channelling, training, installation of culvert)	N/A	N/A
	Use of motorized or heavy equipment adjacent to, within, or through a watercourse	N/A	N/A
	Withdrawal of water from a watercourse	N/A	N/A

	Retaining, storing, or diverting water	N/A	N/A
	Construction of dams and impoundments	N/A	N/A
	Direct or indirect disposal of waste into water	N/A	N/A
	Other	N/A	N/A
CULTURAL COMPONENTS			
Wildlife Harvesting			
Are harvesting areas present? If so, indicate type(s): Community Harvesting Areas, Special Harvesting Areas, Group Trapping Areas, etc.	N/A		
Extent of overlap of Project area with harvesting areas identified above (fish lakes, trapping or hunting areas) (m ³ or ha)	N/A		
Potential Impacts	Activity <i>Use an "x" to indicate which apply</i>	X	Potential Project Impacts and Proposed Mitigations <i>Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.</i>
<ul style="list-style-type: none"> • Loss or reduction in game species populations • Effects on traditional land use, subsistence, and harvesting rights • Other 	Clearing of timber, brush, or vegetation mat	N/A	N/A
	Stripping of overburden	N/A	N/A
	Noise (use of heavy equipment, blasting, crushing, drilling)	N/A	N/A
	Oil and gas exploration well drilling	N/A	N/A
	Construction (development or alteration: widening, straightening, detours), maintenance and operation of lines, trails,	N/A	N/A

	or rights-of-way		
	Increased traffic risk to wildlife	N/A	N/A
	Withdrawal of water from a watercourse	N/A	N/A
	Direct or indirect disposal of waste into water	N/A	N/A
	Other	N/A	N/A
Cultural Integrity and Heritage Resources			
If present, indicate types: places of significant cultural or spiritual value, heritage sites, important subsistence and harvesting areas (group trapping areas, camps and, log and timber harvesting areas, berry picking and medicine plant gathering areas), traditional trails, burial sites, sacred sites, archaeological or historic sites, artifacts and other objects of historical, cultural, or religious significance, historical or cultural records	There are five designated heritage sites located within the City. They are shown on Figure 2 (attached). These areas are protected and there are no plans for land development.		
Potential Impacts	Activity <i>Use an "x" to indicate which apply</i>	X	Potential Project Impacts and Proposed Mitigations <i>Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.</i>
<ul style="list-style-type: none"> • Change to or loss of cultural integrity • Change to or loss of traditional lifestyle • Change to or loss of heritage resources • Other 	Clearing of timber, brush, or vegetation mat	N/A	N/A
	Noise (use of heavy equipment, blasting, crushing, drilling)	N/A	N/A
	Construction of structures (buildings, water or waste management facilities,	N/A	N/A

	etc.)		
	Construction (development or alteration: widening, straightening, detours), maintenance and operation of lines, trails, or rights-of-way	N/A	N/A
	Increased human presence	N/A	N/A
	Withdrawal of water from a watercourse	N/A	N/A
	Retaining, storing, or diverting water	N/A	N/A
	Construction of dams and impoundments	N/A	N/A
	Direct or indirect deposit of waste into water	N/A	N/A
	Other	N/A	N/A
Social and Economic Well-being			
Potential Impacts	Activity <i>Use an "x" to indicate which apply</i>	X	Potential Project Impacts and Proposed Mitigations <i>Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.</i>
<ul style="list-style-type: none"> Increased human health hazard and risk Economic opportunities or losses (employment, training) Change in ecological, cultural, social, or economic values identified for 	Noise (use of heavy equipment, blasting, crushing, drilling)	N/A	N/A
	Transfer, storage, and use of petroleum products and/or chemicals	N/A	N/A
	On-site storage or disposal of wastes (domestic garbage, sewage, waste	X	Refer to the SWF and Hazardous Waste Plans included with this Application.

<p>protection in approved Land Use Plans</p> <ul style="list-style-type: none"> • Impairment of the recreational or traditional uses of the land or water • Impairment of the aesthetic quality of the land or water • Changes to the use of the area by other non-Indigenous people (e.g. trappers, outfitters, residents, hunters, forest harvesters, other authorized projects) • Other 	petroleum products, drilling waste and hydraulic flowback fluids, hazardous wastes, etc.)		
	Construction (development or alteration: widening, straightening, detours), maintenance and operation of lines, trails, or rights-of-way	N/A	N/A
	Construction of structures (buildings, water or waste management facilities, etc.)	N/A	N/A
	Increased human access and presence	N/A	N/A
	Operating in a remote location inaccessible or not easily accessible by emergency aid	N/A	N/A
	Withdrawal of water from a watercourse	X	Refer to the WTP O&M Manual included with this Application.
	Retaining, storing, or diverting water	X	Refer to the FLTS Management Plan included with this Application.
	Construction of dams and impoundments	X	Refer to the WTP O&M Manual and the FLTS Management Plan included with this Application.
	Direct or indirect deposit of waste into water	X	Refer to the FLTS Management Plan included with this Application.
	Other	N/A	N/A

Spill Contingency Plan: is included with this Application Package.

The Spill Contingency Plan is discussed in the attached summary.

11. NAME AND CONTACT INFORMATION – CONTRACTORS AND SUB-CONTRACTORS

Relevant contractors, responsibilities, and contact information are listed in the grey fields below.

Name:	Jeff Bembridge		
Responsibilities:	Hazardous waste removal		
Company Name:	KBL Environmental Ltd.		
Mailing Address:	17 Cameron Road		
Community:	Yellowknife	Telephone:	(867) 873-5263
Prov/Terr:	NT	Email:	bembridge@kblenv.com
Postal Code:	X1A 0E8	Other:	N/A

Name:	N/A		
Responsibilities:	Residential mixed solid waste pick-up and sewage transport		
Company Name:	Kavanaugh Brothers Ltd.		
Mailing Address:	101 Merlin Road		
Community:	Yellowknife	Telephone:	(867) 873-2811
Prov/Terr:	NT	Email:	info@kavwaste.com
Postal Code:	X1A 2N8	Other:	N/A

Name:	N/A		
Responsibilities:	Scrap steel and appliance removal		
Company Name:	Precision North		
Mailing Address:	115 Eagle Drive		
Community:	Yellowknife	Telephone:	(867) 446-8019
Prov/Terr:	NT	Email:	henry@precisionnorthrecycling.ca
Postal Code:	X1A 0G8	Other:	N/A

12. STUDIES UNDERTAKEN TO DATE

The following grey field below lists relevant studies that support the proposed activities. The blue colour titles are hyperlinked to the MVLWB Registry, since they have been submitted previously. The tiles listed in black colour font are included with this Application Package.

Relevant studies include:

- [SWF Drainage Study \(2012\)](#)
- [Biotreatment Pad Effluent Study \(2013\)](#)
- [Sewage Lagoon pH Study \(2014\)](#)
- [Sewage Lagoon Studies \(2014\)](#)
- [SWF Surface Water Metals Study \(2014\)](#)
- [Landfill Gas Study \(2015\) – See appendix F of the C&R Plan \(2016\)](#)
- [BOD/CBOD Trendline Analysis \(2016\)](#)
- [Sewage Effluent Characterization Study \(2017\)](#)
- [Nutrient Risk Assessment \(2017\)](#)
- Potable Water Source Selection (2017)
- Lagoon Sludge Volume Assessment (2019)
- Stormwater Trendline Analysis (Ongoing, study is not attached)

- [pH Study \(2012\)](#) and [pH Study Follow-up \(2014\)](#)
- SWF Hydrogeological Desktop Study (2020)

13. PROPOSED PROJECT SCHEDULE AND TERM

The proposed project start and completion dates, and the time of year the project activities are planned to occur are described in the grey section below.

Start Date:	May 31, 2022	Completion Date:	May 30, 2037
Annual municipal activities – temporary closures or seasonal shutdowns are not anticipated at the time of this application.			
Term of Licence Requested:	15 years		

14. ADDITIONAL SUPPORTING INFORMATION

Engagement: The Engagement Plan, Logs, and Report are included with this Application Package.

Traditional (Environmental) Knowledge (TEK/TK): The City Facilities have a long history of operations and are not expected to impact heritage resources.


Facilities: Supporting information is discussed in the attached Management Plans and O&M Manuals. Figures required under subsection 5(2) of the [Waters Regulations](#) for: dam(s); storage reservoirs and the deposit of waste are attached.

Closure and Reclamation: The Solid Waste Facility Interim Closure and Reclamation Plan is in the only closure and reclamation planned for the City at this time and the document is included with this Application Package.

15. FEES

Type of Fee	Amount (\$)
Application fee:	\$30.00
Water use fee deposit:	\$0
Total Fees:	\$30.00

16. SIGNATURE

Madison Warren	Municipal Engineer (EIT)
Applicant’s Name (print) or Company Name	Position (print)
	February 5, 2021
Signature	Date

The completed application will be addressed to the Executive Director identified on the “Contact Us” pages of the respective Land and Water Board (mvlwb.com)

Licence Condition	Report Title/Require Action	Timeline for Submission	Comment
B.3 (Schedule 1, item 1)	Annual Report	March 31 each year	Annual reporting has been completed and submitted near March 31 st , each year throughout the licensing period
B.8	Identify SNP Station(s) with signage	At all times	Signage is posted and maintained as required.
B.9	Re-locate SNP 0032-13 and 0032-15 and provide coordinates to the Board	By September 1, 2010	Submitted on August 30, 2010
B.10	Identify Water Supply and Waste Disposal Facilities with signage	At all times	Signage is posted and maintained as required.
B.11	Copies of Water Licence in the City of Yellowknife office(s), the Solid Waste Disposal Facilities, and the Water Supply Facility	At all times	Copies of the Water Licence are stored in the City's offices, the Solid Waste Disposal Facilities, and the Water Treatment Plant.
D.3	Advise Inspector and notify the Board prior to decant of Sewage Disposal Facility	At least 10 days before decant begins	Notifications have been provided prior to decant beginning throughout the licensing period.
D.9	Inspection of constructed berms, dykes, and dams within the Waste Disposal Facilities and Water Supply Facilities	Once every 2 years with a report to be submitted to the Board within 60 days of the inspection	Inspections have been conducted and inspection reports submitted throughout the licensing period.
D.10 (Schedule 2, Item 1)	Stormwater Management Plan	Within 15 months of issuance of this Water Licence	The Stormwater Management Plan was submitted in April 2011, revised as needed in following years, and the most recent Stormwater Management Plan was submitted in 2020.

D.11	Design Report	90 days prior to the construction of a new cell at the Solid Waste Disposal Facility	Design reports were submitted 90 days prior to construction throughout the licensing period.
D.12	Operations and Maintenance Manual	60 days prior to operation of a new landfill cell	O&M Manual updates were submitted prior to operation of a new cell at the SWF throughout the licensing period.
D.13	As built plans and Record Drawings	90 days of completion of construction	As build drawings submitted throughout the licensing period.
D.14 (Schedule 2, Item 2)	Solid Waste Disposal Facility Drainage Study	Within 18 months of issuance of Water Licence	The SWF Drainage Study was submitted on March 7, 2012.
D.15 (Schedule 2, Item 3)	Revised Fiddlers Lake Treatment System Plan	March 31, 2012	Various revisions have been made to the document throughout the licensing period. The most current version is from January 2021.
D.16	Sewage Disposal Facility Design Report	60 days prior to any upgrading	Design reports have been submitted throughout the licensing period.
D.17	As built plans and Record Drawings for Sewage Disposal Facilities	Within 90 days of completion of any upgrades	As-built plans have been submitted throughout the licensing period.
D.18	Current Record Drawings of the Sewage Disposal Facilities	Within 6 months of issuance of this Water Licence	Design Drawings have been submitted throughout the licensing period.
D.19	Sewage Disposal Facility reporting	Within 18 months of issuance of Water Licence	Reporting was included with the Annual Reports throughout the licensing period.
D.20	Year long study of sewage effluent and Report	March 31, 2012	A year long pH Compliance Point Assessment Study was completed and submitted in 2012.

D.21	BOD and CBOD Study	August 31, 2014	A BOD and CBOD study was completed and submitted in 2016.
D.22	Study on the capabilities of the effluent discharge area	March 31, 2012	A Sewage Lagoon Study was completed and submitted in 2014. The Sewage Effluent Characterization Study and a Nutrient Risk Assessment was completed and submitted in 2017.
D.23	Metal concentrations in surface water for Solid Waste Disposal Facility Study	March 31, 2013	The SWF Surface Water Metal Study was completed and submitted in 2014.
PART E	Modifications to Water Supply Facilities and Waste Disposal Facilities	Various – refer to Water Licence	Modifications were submitted throughout 2013.
F.1 (Schedule 3, Item 1)	Interim closure and reclamation plan for the Solid Waste Disposal Facility	6 months prior to closure of the current Solid Waste Facility Disposal cell	Multiple versions were submitted throughout the licensing period since 2013.
F.2 (Schedule 3, Item 1)	Closure and Reclamation Plan	At least six (6) months prior to abandoning any Waste Disposal Facilities	No waste disposal facilities have been abandoned to date.
G.1	Construction of any dams, dykes or control structures	Prior to construction	Information related to inspections and repairs has been provided as necessary.
G.3	As-built plans and Record Drawings	Within 90 days of completion	As-built plans and Record Drawings submitted as necessary.
H.1 (Schedule 4)	Updated plans for the Operation and Maintenance of the Waste Disposal Facilities	Various – refer to Schedule 4	The most current updated plans for wastewater disposal Facilities have been submitted in January 2021.

I.1	Spill Contingency Plan in accordance with “Indian and Northern Affairs Canada’s 2007 Guidelines for Spill Contingency Planning”	Within 6 months of issuance of Water Licence	The first update was submitted in July 2009, and various versions updated throughout the licensing period. The most recent is from January 2021.
I.2	Review of Spill Contingency Plan and submission of updates/revision	Annually – Annual Reporting Requirement	The plan was reviewed and updated and submitted as needed throughout the licensing period.



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MUNICIPAL ORDINANCE

WHEREAS be it remembered that Yellowknife was first incorporated as the Local Administrative District of Yellowknife on December 18th, 1939, after elections held on December 5th of the same year with Mr. Jack Gibben (who was later a Commissioner of the Yukon Territory and a judge of the Yukon Territorial Court) appointed by the Commissioner of the Northwest Territories as its first Chairman;

WHEREAS the Local Administrative District of Yellowknife was continued under the name of the Municipal District of Yellowknife effective from June 30th, 1953;

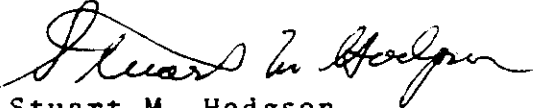
WHEREAS on July 18th, 1963, the Municipal District of Yellowknife was, by amendment to the *Municipal Ordinance*, designated as a municipal corporation and a town;

WHEREAS the Town of Yellowknife was made the seat of Government for the Northwest Territories on May 1st, 1967; and

WHEREAS on October 10, 1969, the *Municipal Ordinance* was amended to permit all municipalities in the Territories having a population exceeding 6,000 to be declared a city;

NOW THEREFORE the undersigned, on the recommendation of the Council of the Town of Yellowknife and pursuant to the *Municipal Ordinance*, is pleased to and hereby declares the Town of Yellowknife to be a City effective on and from January 1st, 1970.

Dated at Yellowknife in the Northwest Territories, this 15th day of December, 1969.


Stuart M. Hodgson,
Commissioner of the
Northwest Territories.