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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: **3BM-CAM1520/Renewal**

April 10, 2015

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RE: NWB Renewal Licence No. 3BM-CAM1520

Dear Mr. King and Mr. Alam:

Please find attached Licence No. **3BM-CAM1520** issued to Hamlet of Cambridge Bay by the Nunavut Water Board (NWB) pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Land Claims Agreement or NLCA)*. The terms and conditions of the attached Licence related to water use and waste disposal are an integral part of this approval.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use and waste disposal must cease, or the Licensee may be in contravention of the *Nunavut Land Claims Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*. However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least three (3) months prior to the Licence expiry date.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public's interest, to hold a public hearing. The Licensee should submit applications for amendment as soon as possible to give the NWB sufficient time to go through the amendment process. The process and timing may vary depending on the scope of the amendment; however, a minimum of sixty (60) days is required from time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and are acknowledged by the Manager of Licensing.

The NWB strongly recommends that the Licensee consult the comments received by interested

persons on issues identified. This information is attached for your consideration.¹

Sincerely,

A handwritten signature in dark ink, appearing to read 'T. Kabloona', written over a horizontal line.

Thomas Kabloona
Nunavut Water Board
Chair

TK/sj/pb

Enclosure: Licence No. **3BM-CAM1520**
Comments – AAND, DFO, KIA

Cc: Kitikmeot Distribution List

¹ Aboriginal Affairs and Northern Development Canada (AANDC), April 17, 2014; Department of Fisheries and Ocean Canada (DFO), March 31, 2014; and the Kitikmeot Inuit Association, April 25, 2014

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I. BACKGROUND

The Hamlet of Cambridge Bay (Hamlet or Licensee) is located on Dease Strait between the Queen Maud Gulf and Coronation Gulf area, in the Kitikmeot Region, Nunavut. The Hamlet is situated in a zone of continuous permafrost and experiences temperatures ranging from approximately -35° to 12° Celsius.

The Hamlet is responsible for providing municipal services to its estimated 1,626 (2011) residents, including potable water supply, sewage treatment, and solid waste management, partly in the context of a water licence issued by the NWB to the Hamlet. In March 2013, Licence No. 3BM-CAM0914, the most recent water licence issued by the NWB to the Hamlet, expired. Shortly prior to the expiry of the Licence, the Hamlet had applied to the NWB for a renewed licence to continue to undertake the same types of Water use and Waste deposit activities as contained in the scope of the expired licence.

II. PROCEDUAL HISTORY

The NWB received, under four separate submissions, from the Government of Nunavut – Community Government Services (GN-CGS), on behalf of the Hamlet of Cambridge Bay, the following application and supporting documents (Application) for a five (5) year renewal of Licence 3BM-CAM0914:

January 9, 2014

- As-Built Drawings of Facilities Showing Monitoring Locations
- Authorization Letter from the Hamlet of Cambridge Bay
- Application Cover Letter
- Quality Assurance and Quality Control Plan -Lagoon and Landfill, November 2013
- Completed Renewal Application Form
- Sewage and Solid Waste Sample Results (2013)
- Executive Summary of Application in English
- Executive Summary of Application Inuinnaqtun
- Bacterial Test Results (2013)

February 7, 2014

- Response to Deficiency Related to the Application, February 7, 2014

February 21, 2014

- Appendix A – Copy of Licence 3BM-CAM0914
- Appendix B – Contact List
- Appendix C – Municipal Solid Waste Operation Policies
- Appendix D – Landfill and Lagoon Redevelopment Record Drawing
- Appendix E – Spill Contingency Plan, November 2012
- Appendix F – Quality Assurance / Quality Control Plan –Lagoon and Landfill, dated November 2013
- Appendix G – Water Sampling Instructions, Forms and Documentation
- Appendix H – Decant Pump Manual

- Appendix I – Forms
- Municipal Solid Waste Disposal Facility Operation and Maintenance Manual, February 2014

March 14, 2014 Submission

- Sewage Lagoon Operation and Maintenance Manual, dated December 2013

Following receipt and an internal review, NWB distributed the Application for a thirty (30)-day comment period on March 18, 2014. Before the deadline for comments elapsed, submissions were received from Aboriginal Affairs and Northern Development Canada (AANDC), Department of Fisheries and Ocean (DFO) Canada and the Kitikmeot Inuit Association (KIA). Where appropriate, the NWB has given due consideration to the comments and recommendations provided by intervening parties in the drafting of terms and conditions associated with the renewal licence.

The NWB has placed in its Public Registry copies of the Application and all comments received from interveners. This information can be accessed on the NWB's FTP site using the following link (Username: **public**; Password: **registry**):

<ftp://ftp.nwb-oen.ca/1%20PRUC%20PUBLIC%20REGISTRY/3%20MUNICIPAL/3B/3BM%20-%20Municipality/3BM-CAM0914/>

III. FILE HISTORY

Information contained on the NWB's FTP site indicates that the Northwest Territories Water Board (NWTWB) has issued two licences while the Nunavut Water Board (NWB) has issued two licences and one amendment to the Hamlet of Cambridge Bay for similar types of undertakings in previous years.

The licences issued by the Northwest Territories Water Board to the Hamlet of Cambridge Bay include the following:

- ***Licence N4L4-1532***
This licence was issued on July 1, 1988 and expired on June 30, 1995. The licence allowed for the deposit of waste and the use of 70, 000 cubic metres of water *per* year for a Municipal undertaking;
- ***Licence N4L3-1532 (Renewal)***
This renewal licence was issued on August 1, 1995 with an expiry date of July 31, 2000. The renewal licence allowed for the deposit of waste and use of 70,000 cubic metres of water *per* year for a Municipal undertaking.

Licences issued by the Nunavut Water Board to the Hamlet of Cambridge Bay include the following:

- ***Licence NWB3CAM0207***
This licence was issued on September 1, 2002 with an expiry date of August 31, 2007.

The licence allowed for the use of 70,000 cubic metres of water annually and deposit of waste in support of a Municipal undertaking.

- ***Licence NWB3CAM0207 Amendment No. 1***

Amendment No.1 to Licence NWB3CAM0207 was issued on February 16, 2005 to allow for remediation of petroleum contaminated soil at a Hydrocarbon-Impacted Soil, Landfarm Treatment Facility.

- ***Licence 3BM-CAM0914***

Licence NWB3CAM0207 was renewed as 3BM-CAM0914 on April 30, 2009 and expired on March 31, 2014. The licence allowed for the use of 88, 000 cubic metres of water annually and the deposit of waste in support of a Municipal undertaking.

IV. ISSUES

The following sections provide background information relevant to the terms and conditions included in this Licence, in the context of submissions received and/or the Board's rationale. Where appropriate, the Board has removed or modified terms and conditions associated with the previous licence, which are no longer applicable under this renewal licence.

Term of the Licence

In accordance with s. 45 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSTRA or the Act), the NWB may issue a licence for a term not exceeding twenty-five (25) years. In determining an appropriate term for a renewal licence, the Board generally takes into consideration several factors including interveners' comments, the Licensee's compliance history, as well as the rationale contained in the Application.

The Licensee requested in its Application, a five (5) year term for the licence. The intervening parties in their submissions did not comment on the term requested for the renewal licence. However, the Board in examining the compliance history of the licensee, felt encouraged by recent progress made in providing required/outstanding documents for the undertaking. The Board has therefore granted the term requested by the Licensee. In so doing, the Board believes and expects that the five-year term will provide the Licensee with significant opportunities to consistently abide by the terms and conditions in the licence over time and provide ongoing compliance record prior to a need for renewal.

Annual Reports

Under the reporting section of the Licence, Part B, Item 1, the Licensee is required to submit, on an annual basis, a report pertaining to Water use and Waste deposit activities. This information is kept in the NWB's public registry and made available to interested persons upon request. Further, the NWB maintains annual reporting information on its FTP site, which can be accessed using the following link (username: **public** and password: **registry**): <ftp://ftp.nwb-oen.ca/1%20PRUC%20PUBLIC%20REGISTRY/>.

Water Supply Facility

The Hamlet obtains its freshwater supply from Water Lake, which is located approximately 1.5

kilometres north of the community. Raw water is withdrawn from the lake through a twin intake pump house and is transported to the community through an underground transmission line to a tank located within the community. Following basic treatment, the water is distributed by trucks to individual homes and business.

The water supply facility has undergone some upgrades through an application submitted to the NWB by Stantec Architecture Ltd. (Stantec), on behalf of the Hamlet of Cambridge Bay, on March 30, 2012, and subsequent approval of the modification by the NWB on May 29, 2012. On September 12, 2014, the NWB received from Stantec, the relevant “Issued for Construction Drawing” showing the proposed modifications for the new water treatment facility. Upgrades to the Water Supply Facility began around 2012 and is expected to be completed in 2015 and to include a new pre-fabricated pump house, an emergency truck-fill building, and new dual-intake lines. The new facility is now being referred to as the Modified Water Supply Facility in the renewal licence.

The old pump house, truck fill station, and intake structure are expected to be abandoned in the near future, and the Licensee is required to provide the NWB with appropriate information and documents related to the decommissioning planned for that structure.

Information included in the application indicates that the maximum daily Water demand for the period 2011 – 2013 was approximately 236 cubic metres *per* day. Accordingly, the Hamlet has requested that it be allowed to use 236 cubic metres of Water *per* day or 86,200 cubic metres of Water *per* year to satisfy its water demand. It has been determined that the quantity of Water requested is consistent with the undertaking. Accordingly, the Board has granted the quantity of Water requested under Part C, Item 2 of the licence.

Sewage Disposal Facility

The Hamlet’s original Sewage Treatment Facility (Existing Sewage Treatment Facility) was in operation for approximately thirty (30) years before it was upgraded in 2012. The original facility, which is located about 2 kilometres from the community, consisted of a six-pond lagoon system, configured in series, with capacity of 72,000 cubic metres. The 2012 upgrades reduced the number of cells from six to three and increased the capacity of the lagoon to 190,000 cubic metres. Raw sewage generated by the community is collected by trucks and discharged into the primary cell of the lagoon system for treatment. Treated sewage from the primary cell flows into the secondary cell via a berm and then onto other components of the lagoon system before eventually being released, reaching the ocean.

Due to changes implemented during upgrades to the Existing Sewage Treatment Facility, relevant sections of the expired licence have been amended under indicated in the renewal Licence to reflect current conditions for the Modified Sewage Treatment Facility. The terms and conditions related effluent generated by the Modified Sewage Disposal Facility have been included under Part D in the Licence.

Solid Waste Disposal Facility

Solid waste generated by the Hamlet of Cambridge Bay is managed by the Solid Waste Disposal Facility, located approximately 0.8 kilometres northeast of the Hamlet. The site had apparently been in operation for about 30 years before it was upgraded in 2012. Upgrades to

the facility (Existing Solid Waste Disposal Facility) in 2012 included improved access and surface drainage, and the development of a burn pit, diversion cell and equipment storage area.

The upgraded facility (referred to in this licence as the Modified Solid Waste Disposal Facility) include a primary fenced area, about 41,000 square metres in size, used for managing municipal solid waste generated by the community. A secondary unfenced area, approximately 20,000 square metres in size, used to manage bulky waste and metals such as scrap vehicle, appliances, tires and other materials. Hazardous Waste generated by the community such as batteries, paint, fluorescent/halogen bulbs and more, are stored in secure boxes until shipped to facilities in southern Canada. Apart from waste generated by the community, the facility sometimes accepts waste from a DEW Line site located proximal to Cambridge Bay.

Drainage from the primary site of the Modified Solid Waste Disposal Facility is directed by means of a shallow ditch to a basin located north of the sewage lagoon. However, Drainage from the secondary area is directed towards the wetland located downstream of the sewage lagoon. Terms and conditions related to effluent/runoff associated with the Modified Solid Waste Disposal Facility are included under Part D in the Licence.

Operation & Maintenance Plans

In accordance with Part F, Item 1, of the expired licence, the Licensee was required to submit a combined Operation and Maintenance Manual that includes several management plans as subsets of the combined manual. However, rather than submitting one combined manual containing the various plans required as subsets, the Licensee has instead submitted separate or stand-alone management plans/sub-manuals to address requirements related to relevant activities related to Part F, Item 1, in the expired licence. The following management plans were submitted as part of the renewal application:

- Sewage Lagoon Operation and Maintenance Manual, dated December 2013;
- Municipal Solid Waste Disposal Facility Operation and Maintenance Manual, dated February 2014;
- Spill Contingency Plan, dated November 2012; and
- Quality Assurance and Quality Control Plan – Lagoon and Landfill, dated November 2013;

Although it has not been the usual practice for the Board to accept documents submitted in a form that is inconsistent with requirements in any particular licence, the Board has decided in this situation to amend the relevant term and condition contained in the previous licence, with the issuance of this licence, to allow for separate approvals of stand-alone plans/sub-manuals that should have been submitted as subsets of the combined manual. In this way, the Licensee will have the flexibility to submit, for separate approval, any outstanding plans that are required. Conditions related to approval of the above mentioned standalone management plans are included under Parts F and H in this Licence.

In addition, the Licensee should note that conditions have been included in the Licence for submission of an Operations and Maintenance Plan for the Updated Water Supply Facility within Ninety (90) days of issuance of this Licence under Part F, Item 5.

Sludge Management

Details contained in the Sewage Lagoon Operations & Maintenance Manual indicate that the 50m X 50m pad has been created south of the primary lagoon cell for the drying of sludge that may be removed from the primary lagoon during de-sludging operations, typically carried out every 8 to 12 years. While the Licensee has indicated that de-sludging activities are unlikely to occur during the lifetime of the Modified Sewage Disposal Facility, conditions have been included in the licence, under Part F, Item 6, requiring the Licensee to submit a sludge management plan, if the licensee is required to de-sludge the facility at some point in the future.

Abandonment and Restoration Plan

General terms and conditions have been included under Part G in the Licence, requiring the Licensee to submit an Abandonment and Restoration (A&R) Plan at least six (6) months prior to abandoning any facility under the scope of this renewal licence. It should be noted that the Board is aware that the Licensee is contemplating abandoning the old water intake structure and pump house associated with the Existing Water Supply Facility. The Board expects that an appropriate Abandonment and Restoration Plan will be submitted in accordance with the terms and conditions in this renewal licence.

Landfarm Facility

Information contained in the 2013 Annual Report and within the Application, indicated that a separate landfarm facility was constructed and operated by a private operator to treat hydrocarbon impacted soil generated by the community. The Licensee has confirmed that the landfarm facility is no longer in operations. However, as activities of this type will require a water licence issued by the NWB, the hamlet will be required to amend this licence or apply for a separate licence to treat any hydrocarbon impacted soil at landfarm facility in the future.

However, details contained in the application indicate that empty drums containing soil-sand recovered from spills and contaminated soil are expected to be stored inside two lined cells for natural remediation. The Licensee should note that the scope of activities allowed under this Licence for the Modified Solid Waste Disposal Facility does not permit the operation of a landfarm facility for treating hydrocarbon impacted soil. If the Licensee is required to undertake this type of activity in the future, it will be required to amend the licence to include the hydrocarbon impacted soil treatment facility (Landfarm).

Monitoring Plan/Program

The Licensee has included details related to how it intends to monitor relevant facilities associated with its operations in its Quality Assurance and Quality Control Plan and respective operations and maintenance plans/manual. The Licensee is required to seek approval and/or conformation from the Board prior to making any changes to the monitoring program.

Engineered Drawings and Designs

Part E, Item 4 of the expired licence required the Licensee to provide to the Board for review, as-built plans and drawings, for facilities included under the scope of that licence, within ninety (90) days of completion of construction or, if already constructed, within ninety (90) days of issuance of the Licence. The following record of drawings, which the Licensee claims it considers to be as-built drawings have been submitted to the NWB as a part of the Application:

- Sewage Lagoon Cross Sections(C-05)
- Schematic Details of Berm Structures (C-06)
- Sewage Lagoon Improvement Details (C-07)
- Landfill Site Improvement Plan (C-08)
- Landfill Site Cross Sections (C-09)
- Land fill Site Improvement Details (C-10)
- Landfill Site Improvements Details (C-11)
- Metal Waste Improvement Plan (C-12)
- Metal Waste Improvement Details (C-13)
- Sign Location Plan (C-14)

The Board has accepted these drawings as meeting the relevant requirements under the expired licence. The Board notes, however, that as-built drawings for the Existing Water Supply Facility were not submitted, or received by the NWB. Given the changes that the Existing Water Supply Facility has undergone, the requirement for submission of as-built drawings for the Existing Water Supply Facility has shifted to being a requirement for submission of as-built drawings as part of the Operations and Maintenance Manual or plan for the Modified Water Supply Facility, which is required ninety (90) days following issuance of this Licence under Part H, Item 6 in the Licence.

DECISION

LICENCE NUMBER: 3BM-CAM1520

This is the decision of the Nunavut Water Board (NWB) with respect to an application dated December 20, 2013 for the renewal of a Water Licence made by:

HAMLET OF CAMBRIDGE BAY

to allow for the use of Water and deposit of Waste for a Municipal Undertaking that include the potable Water Supply Facility, Sewage Disposal Facility, and Solid Waste Disposal Facility within the Hamlet, located in the Kitikmeot Region, Nunavut, with geographical coordinates as follows:

Latitude: 69°7'1" N

Longitude: 105°03'15" W

DECISION

After having been satisfied that the application was for a location that falls outside of an area with an approved Land Use Plan¹ as determined by the Nunavut Planning Commission (NPC) and exempt from the requirement for screening as described within Schedule 12-1 by the Nunavut Impact Review Board² in accordance with Article 12 of the *Nunavut Land Claim Agreement (NLCA)*, the NWB decided that the application could proceed through the regulatory process. In accordance with S.55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (Act)* and Article 13 of the *NLCA*, public notice of the application was given and interested persons were invited to make representations to the NWB.

After reviewing the submission of the Applicant and considering the representations made by interested persons, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the *NLCA* and of the *Act*, waived the requirement to hold a public hearing, and determined that:

Licence No. 3BM-CAM0914 be renewed as Licence No. 3BM-CAM1520 subject to the terms and conditions contained therein. (Motion #: 2014-B1-046)

Signed this 10th day of April, 2015 at Gjoa Haven, NU.



Thomas Kabloona
Nunavut Water Board, Chair

TK/sj/pb

¹ Nunavut Planning Commission (NPC) Conformity Determination, September 15, 2014.

² Nunavut Impact Review Board (NIRB) Screen Exemption Determination, March 25, 2014



NUNAVUT WATER BOARD WATER LICENCE RENEWAL

Licence No. 3BM-CAM1520

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

HAMLET OF CAMBRIDGE BAY

(Licensee)

P.O. BOX 16 CAMBRIDGE BAY NUNAVUT X0B 0C0

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water or dispose of waste for a period subject to restrictions and conditions contained within this Licence renewal:

Licence Number/Type: 3BM-CAM1520 TYPE "B"

Water Management Area: SOUTHERN VICTORIA ISLAND WATERSHED (38)

Location: KITIKMEOT REGION, NUNAVUT

Classification: MUNICIPAL UNDERTAKING

Purpose: DIRECT USE OF WATER AND DEPOSIT OF WASTE

Quantity of Water use not to Exceed: 86,200 CUBIC METRES *PER* ANNUM AT MAXIMUM RATE OF 236 CUBIC METRES *PER* DAY

Date of Licence Issuance: April 10, 2015

Expiry of Licence: April 9, 2020

This Licence renewal, issued and recorded at Gjoa Haven, Nunavut, includes and is subject to the annexed conditions.

Thomas Kabloona,
Nunavut Water Board, Chair

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. Scope

This Licence allows for the use of Water and the deposit of Waste for a Municipal undertaking classified as per Schedule 1 of the *Regulations* at the Hamlet of Cambridge Bay, located within the Kitikmeot Region of Nunavut of Region, Nunavut.

- a. This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing *Regulations* are amended by the Governor in Council under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be subject to such requirements; and
- b. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

“**Act**” means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“**Addendum**” means the supplemental text that is added to a full plan or report usually included at the end of the document and is not intended to require a full resubmission of the revised report;

“**Amendment**” means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

“**Appurtenant Undertaking**” means an undertaking in relation to which a use of water or a deposit of waste is permitted by a licence issued by the Board;

“**Board**” means the Nunavut Water Board established under the *Nunavut Land Claims Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“**Effluent**” means treated or untreated liquid waste material that is discharged into the environment from a structure such as a settling pond, landfarm or a treatment plant;

“Engineer” means a professional engineer registered to practice in Nunavut in accordance with the *Consolidation of Engineers and Geoscientists Act S. Nu 2008, c.2* and the *Engineering and Geoscience Professions Act S.N.W.T. 2006, c.16 Amended by S.N.W.T. 2009, c.12*;

“Existing Sewage Disposal Facility” refers to the pre-upgraded Sewage Disposal Facility under Licence 3BM-CAM0914 that comprised Pond 1, Pond 2, Pond 3, Pond 4, Pond 5 and Pond 6 as identified on Figure 4, Background Report for Water Licence Renewal, Hamlet of Cambridge Bay, NU. Earth Tech. August 2007;

“Existing Solid Waste Disposal Facility” refers to the pre-upgraded Solid Waste Disposal Facility under Licence 3BM-CAM0914 designated for the disposal of solid waste, as identified on Drawing No. C-O1, C-02 and C-04, Government of Nunavut Cambridge Bay Waste Facilities, prior to the planned modifications proposed in the renewal application dated August 3, 2007 and supplementary documents submitted with that application;

“Existing Water Supply Facility” refers to the pre-upgraded potable water Supply Facility under Licence 3BM-CAM0914, which comprised of the area and associated intake infrastructure at Water Lake, intake pump house, truck-fill station, storage tanks, transmission line and associated appurtenances, as described in the Application for a renewal of Water Licence dated August 3, 2007;

“Final Discharge Point” in respect of an effluent means an identifiable discharge point of a facility beyond which the operator of the facility no longer exercises control over the quality of the effluent;

“Freeboard” means the vertical distance between water line and the designed maximum operating height on the crest of a dam or dyke’s upstream slope;

“Geotechnical Engineer” means a professional engineer registered with the Association of Professional Engineers, Geologist and Geophysicists of Nunavut and whose principal field of specialization with the engineering properties of earth materials in dealing with man-made structures and earthworks that will be built on a site. These can include shallow and deep foundations, retaining walls, dams, and embankments;

“Grab Sample” means an undiluted single water or wastewater sample, collected at a particular time and place that may be representative of the total substance being sampled, at the time and place it was collected;

“Greywater” means all liquid wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet wastes;

“High Water Mark” means the usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land (ref. Department of Fisheries and Oceans Canada, Operational Statement: Mineral Exploration Activities);

“Inspector” means an Inspector designated by the Minister under Section 85 (1) of the *Act*;

“Licensee” means the holder of this Licence;

“Modification” means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

“Modified Sewage Disposal Facility” refers to the upgrade Sewage Disposal Facility that comprises the Primary Sewage Lagoon and Retention Sewage Lagoon as identified on Drawing No. C-01, C-02 and C-04, Government of Nunavut Cambridge Bay Waste Facilities, October 3, 2008;

“Modified Solid Waste Disposal Facility” referred to the up-graded Solid Waste Disposal Facility designated for the disposal of solid waste, as identified on Drawing No. C-01, C-02 and C-04, Government of Nunavut Cambridge Bay Waste Facilities, October 3, 2008 and modified as described in the renewal application dated August 3, 2007 and supplementary documents submitted with that application;

“Modified Water Supply Facility” refers to the upgraded facility including the dual-intake structure, new pump house, storage tank and appurtenances as described by the applicant in its Modification request received by the Board March 30, 2012;

“Monitoring Program” means a monitoring program established to collect data on surface water and groundwater quality, to assess impacts of an appurtenant undertaking to the freshwater aquatic environment;

“Nunavut Land Claims Agreement (NLCA)” means the *“Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada”*, including its preamble and schedules, and any amendments to that agreement made pursuant to it;

“Regulations” means the *Nunavut Waters Regulations* SOR/2013-69 18th April, 2013;

“Retention Sewage Lagoon” is the secondary cell of the Modified Sewage Disposal Facility and is identified within the drawings submission dated October 3, 2008, “Cambridge Bay Sewage and Solid Waste Facilities”, specifically on Drawing No. C-01, Process Summary and drawing C-04, Sewage Lagoon Improvement Plan;

“Secondary Containment” means an impermeable structure, external to and separate from primary containment, which prevents unplanned spills of hazardous materials and provides a minimum capacity of 110% of the original vessel. Where multiple vessels are stored within the containment, it must provide a minimum capacity equal to the sum of the largest vessel and 10% of the aggregate volume of

all other vessels located in the containment. This structure shall also provide containment and control of hoses and nozzles;

“Sewage” means all toilet wastes and greywater;

“Sewage Wetland” comprises of the ‘Sewage Wetland’ Area Drawing No. C-O1, ‘Wetland’ Drawing No. C-02 and ‘Proposed Wetland’ Drawing No.C-04, Government of Nunavut Cambridge Bay Waste Facilities, October 3, 2008;

“Spill Contingency Plan” means a Plan developed to deal with unforeseen petroleum and hazardous materials events that may occur during the operations conducted under the Licence;

“Sump or Sumps” A structure or depression that collects, controls, and filters liquid waste before it is released to the environment. This structure should be designed to prevent erosion while allowing percolation of liquid waste;

“Toilet Wastes” means all human excreta and associated products, but does not include greywater;

“Waste” means, as defined in S.4 of the *Act*, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means;

“Waste Disposal Facilities” consists of the Modified Sewage Disposal Facility and the Modified Solid Waste Disposal Facility as described in the Application dated December 20, 2013;

“Water” or “Waters” means waters as defined in section 4 of the *Act*.

3. **Enforcement**

- a. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;
- b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and
- c. For the purpose of enforcing this Licence and with respect to the use of Water and deposit or discharge of Waste by the Licensee, Inspectors appointed under the *Act*, hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law.

PART B: GENERAL CONDITIONS

1. The Licensee shall file an Annual Report on the Appurtenant Undertaking with the Board no later than March 31 of the year following the calendar year being reported, containing the following information:
 - a. tabular summaries of all data generated under the “Monitoring Program”;
 - b. the monthly and annual quantities in cubic metres of fresh Water obtained at the Modified Water Supply Facility and/or for all purposes under the licence;
 - c. the monthly and annual quantities in cubic metres of all Waste discharged;
 - d. a summary of any open burning undertaken under Part D, Item 10, including quantity and details of the waste being burned, along with photographic evidence of site cleanup;
 - e. a summary of modifications and/or major maintenance work carried out on the Water Supply Facility and Waste Disposal Facilities, including all associated structure;
 - f. a list of unauthorized discharges and summary of follow-up action taken;
 - g. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
 - h. Any Addendum with updates or revisions for manuals and plans (including *Operations and Maintenance Manuals/Plans*) as required by changes in operation and/or technology;
 - i. a summary of any studies or reports requested by the Board that relate to the use of Water and Waste disposal or restoration, and a brief description of any future studies planned; and
 - j. any other details on Water or Waste deposit requested by the Board by November 1 of the year being reported;
2. The Licensee shall comply with the “Monitoring Program” described in this Licence, and any amendments to the “Monitoring Program” as may be made from time to time, pursuant to the conditions of this Licence.
3. The “Monitoring Program” and compliance dates specified in the Licence may be modified at the discretion of the Board in writing.
4. The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.
5. The Licensee shall install flow meters or other such devices, or implement other such methods as approved by the Board in writing, for the measuring of water volumes as required under Part H.
6. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted, cannot be undertaken without subsequent written Board approval and direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.

7. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
8. The Licensee shall review the Plans referred to in this Licence, as required by changes in operation and/or technology, and modify the Plan accordingly. Revisions to the Plans shall be submitted in the form of an Addendum to be included with the Annual Report.
9. Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of this Licence, and any additional terms and condition imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.
10. The Licensee shall, within ninety (90) days following the first visit by the Inspector, following issuance of this Licence, post the necessary signs to identify the stations of the “Monitoring Program,” in the Official Languages of Nunavut.
11. The Licensee shall ensure a copy of this Licence is maintained at the Municipal Office at all times. Any communication with respect to this Licence and any notice provided to an Inspector, shall be made in writing to the attention of:
 - (a) **Manager of Licensing:**
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Telephone: (867) 360-6338
Fax: (867) 360-6369
Email: licensing@nwb-oen.ca
 - (b) **Inspector Contact:**
Manager of Field Operations, AANDC
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295
Fax: (867) 979-6445
12. The Licensee shall submit one paper copy and one electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut and Inuinnaqtun.
13. The Licensee shall ensure that all document(s) and correspondence submitted by the Licensee to the Board are received and acknowledged by the Manager of Licensing.
14. This Licence is not assignable except as provided in Section 44 of the Act.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all fresh water processed by the Modified Water Supply Facility and for all purposes under this Licence from Water Lake.
2. The annual quantity of Water used for all purposes shall not exceed eighty-six thousand two hundred (86,200) cubic metres, at a maximum daily withdrawal rate that shall not exceed two hundred and thirty-six (236) cubic metres.
3. The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw water at a rate such that fish do not become impinged on the screen.
4. The Licensee shall not remove any material from below the ordinary High Water Mark of any water body unless otherwise approved by the Board in writing.
5. The Licensee shall not cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.
6. The Licensee shall implement sediment and erosion control measures, prior to and maintained during the operation to prevent entry of sediment into Water.
7. The Licensee shall submit to the Board for approval in writing, at least thirty (30) days prior to the use of Water in sufficient volume that the source water body may be drawn down, the following information: volume required, hydrological overview of the water body, details of impacts, and proposed mitigation measures.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall direct all Sewage generated by its undertaking to the Modified Sewage Disposal Facility included under the scope of this licence.
2. The Licensee shall direct Effluent from the Modified Solid Waste Disposal Facility to the Retention Sewage Lagoon as required.
3. The Licensee shall provide a minimum of ten (10) days' notice to an Inspector of the intent to discharge Effluent from the Modified Sewage Disposal Facility.
4. All Effluent discharged from the Modified Solid Waste Disposal Facility to the Retention Sewage Lagoon, shall be monitored for conditions under Part H, Item 5.
5. All Effluent discharged from the Modified Sewage Disposal Facility to the Sewage Wetland at Monitoring Program Station CAM-5 shall be measured for the parameters listed under this term and condition. Effluent at the outfall area at Monitoring Program Station CAM-6, shall not exceed the following Effluent quality limits:

| Parameter | Maximum Concentration of Any Grab Sample |
|------------------------|---|
| BOD ₅ | 100 mg/L |
| Total Suspended Solids | 120 mg/L |
| Fecal Coliforms | 1 x 10 ⁶ CFU/100mL |
| Oil and grease | No visible sheen |
| pH | between 6 and 9 |

6. The Licensee shall maintain at all times, a freeboard of at least 1.0 metre, or as recommended by a qualified Geotechnical Engineer and as approved by the Board in writing, for all dams, dykes or other structures intended to contain, withhold, divert or retain Water or Waste.
7. The Modified Sewage Disposal Facility shall be maintained and operated in such a manner as to prevent structural failure.
8. The Licensee shall manage all solid Waste generated by its undertaking and/or disposed of at the Modified Solid Waste Disposal Facility in accordance with acceptable standard and practices.
9. The Licensee shall not open burn plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood to prevent the deposition of waste materials of incomplete combustion and/or leachate from contaminated ash residual, from impacting any surrounding waters, unless otherwise approved by the Board in writing.
10. The Licensee shall provide a minimum of ten (10) days' notice to an Inspector, of the intent to open-burning municipal waste in accordance with the Government of Nunavut's *Environmental Guideline for the Burning and Incineration of Solid Waste* (Revised 2012), at the designated location at the Modified Solid Waste Disposal Facility, including the details of the types and quantity of waste to be burned, proposed dates, protocols to be followed, ultimate disposal of residual ash and the person responsible for the activity.
11. The Licensee shall segregate and store all hazardous materials and/or hazardous Waste within the Modified Solid Waste Disposal Facility in such a manner as to prevent the deposit of deleterious substances into any Water, until such a time that the materials have been removed for proper disposal at an approved facility.

PART E: CONDITIONS APPLYING TO MODIFICATIONS AND CONSTRUCTION

1. The Licensee shall submit to the Board for approval in writing, for construction design drawings stamped by a qualified Engineer, sixty (60) days prior to the

construction of any dams, dykes or structures intended to contain, withhold, divert or retain Water or Waste.

2. The Licensee may, without written approval from the Board, carry out modifications to the Water Supply Facility and Waste Disposal Facilities provided that such modifications are consistent with the terms of this Licence and the following requirements are met:
 - a. the Licensee has notified the Board in writing of such proposed modifications at least sixty (60) days prior to beginning the modifications;
 - b. these modifications do not place the Licensee in contravention of the Licence or the Act;
 - c. the Board has not, during the sixty (60) days following notification of the proposed modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
 - d. the Board has not rejected the proposed modifications.
3. Modifications for which all of the conditions referred to in Part E, Item 2, have not been met may be carried out only with written approval from the Board. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.
4. All activities shall be conducted in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake any corrective measures in the event of any impacts on surface drainage.
5. The Licensee shall implement and maintain sediment and erosion control measures prior to and during activities carried out under this Part, to prevent the release of sediment and minimize erosion.

PART F: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE

1. The Board has approved the Plan entitled *Sewage Lagoon Operation and Maintenance Manual*, dated December 2013 that was submitted as additional information with the application.
2. The Board has approved the Plan entitled *Municipal Solid Waste Disposal Facility Operations and maintenance Manual* dated February 2014 that was submitted as additional information with the application.
3. The Board has approved the Plan entitled *Spill Contingency Plan* dated November 2013 that was submitted as additional information with the application.

4. The Plan referred to in Part F, Item 3 shall be updated within sixty (60) days of issuance of this Licence, and submitted to the Board for review, to include or address the following requirements:
 - a. NT-NU spill Report form;
 - b. Site map showing the location of spills, Water and Waste management facilities; and
 - c. Relevant material Safety Data Sheets (MSDS).
5. The Licensee shall submit to the Board for approval, within ninety (90) days of the issuance of this Licence, a stand-alone Modified Water Supply Facility Operation and Maintenance (O&M) Manual that addresses all components of the system and includes a schedule for recording daily Water use volumes requirements in Part H, Items 1 and 2.
6. The Licensee, shall, within ninety (90) days of issuance of this Licence, provide separately or include as part of the Modified Water Supply Facility Operation and Maintenance Manual required Part F, Item 5, as-built drawings for the Water Supply Facility that are signed and stamped by an Engineer, as required by Part E, Item 3.
7. The Licensee shall submit to the Board for approval in writing, at least sixty (60) days prior to conducting any desludging operations, a stand-alone Sewage Sludge Management Plan.
8. The Licensee shall review the Operations and Maintenance (O&M) Plans or Manuals referred to in Part F, Items 1, 2, 3, 5, and 7 as required by changes in operation and/or technology and modify accordingly. Revisions are to be submitted to the Board for approval in writing, in the form of an Addendum, to be included with the Annual Report required under Part B, Item 1.
9. The Licensee shall arrange for inspections to be conducted by an appropriate Engineer, at least once annually, of all structures or facilities designed to contain, withhold, divert or retain Water or Waste, during the summer months (July/August) and/or during periods of flow. An Engineer's report shall be submitted to the Board within sixty (60) days of the date of inspection, including a cover letter from the Licensee outlining an implementation plan to address each of the Engineer's recommendations.
10. An inspection of all engineered facilities shall be conducted, during the summer period (July/August), by a Geotechnical Engineer in accordance with the *Canadian Dam Safety Guidelines*, at least one (1) year prior to expiry of the Licence. The Geotechnical Engineer's report shall be submitted to the Board within sixty (60) days of the inspection, including a cover letter from the Licensee outlining an implementation plan to address each of the Engineer's recommendations.
11. The Licensee shall perform more frequent inspections of the engineered facilities at the request of an Inspector.

12. The Licensee shall, during the term of this Licence, undertake the following activities in addition to any other required action should an unauthorized discharge of waste occur or if such a discharge is foreseeable:
 - a. employ the appropriate contingency measures as approved under the Spill Contingency Plan for the Hamlet of Cambridge Bay;
 - b. report the incident immediately via the 24-Hour Spill Reporting Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and
 - c. submit to the Inspector, a detailed report on each occurrence, not later than thirty (30) days after initially reporting the event, that provides the necessary information on the location (including the GPS coordinates), initial response action, remediation/clean-up, status of response (ongoing, complete), proposed disposal options for dealing with contaminated materials and preventative measures to be implemented.
13. The Licensee shall, in addition to Part F, Item 12, regardless of the quantity of releases of harmful substances, report to the NWT/NU Spill Line if the release is near or into a Water body.

PART G: CONDITIONS APPLYING TO ABANDONMENT, RESTORATION AND CLOSURE

1. The Licensee shall submit to the Board for approval an *Abandonment, Restoration and Closure Plan* at least six (6) months prior to abandoning any facilities or upon submission of the final design drawings for the construction of new facilities to replace existing ones. Where applicable, the Plan shall include information on the following:
 - a. water intake facility;
 - b. the water treatment and waste disposal sites and facilities;
 - c. petroleum and chemical storage areas;
 - d. any site affected by waste spills;
 - e. leachate prevention;
 - f. an implementation schedule;
 - g. maps delineating all disturbed areas, and site facilities;
 - h. consideration of altered drainage patterns;
 - i. type and source of cover materials;
 - j. future area use;
 - k. hazardous wastes; and
 - l. a proposal identifying measures by which restoration costs will be financed by the Licensee upon abandonment.
2. The Licensee shall provide to the Board for review, within ninety (90) days following the issuance of this Licence, a detailed report that includes but is not limited to the following, as requested by AANDC in its submission:
 - a. Confirmation on whether or not the scrap metal pile reference in the 2012 annual

report was relocated to the waste disposal facility's secondary areas or was buried in trenches;

- b. Designed drawing for any trenches used to burry scrap metals including cover design, type and size of material used as fill, degree of compaction, etc.;
- c. Details on any hazardous materials/substances removed from the scrap metal pile debris, if the material was relocated to the waste disposal facility;
- d. An assessment of whether or not the disposal area is subject to subsurface flow assuming that the waste was buried in trenches.

PART H: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Licensee shall maintain Monitoring Program Stations at the following locations:

| Monitoring Program Station Identification | Description | Frequency | Status |
|--|---|--|---------------------------|
| CAM-1 | Raw water supply intake at Water Lake | Monthly, Annually | Active (Volume) |
| CAM-2 | Runoff from the Modified Solid Waste Disposal Facility | N/A | Inactive (Quality) |
| CAM-3 | Effluent or sampling point within the Modified Sewage Lagoon Facility | Based operational needs | (Quality) |
| CAM-4 | Effluent from the eastern-most control pond in the Modified Solid Waste Disposal Facility being discharged to the Retention Sewage Lagoon | Prior to discharge | Active (Volume) (Quality) |
| CAM-5 | Final Discharge Point for effluent from the Retention Sewage Lagoon to the Sewage Wetland | Once at the beginning of discharge; one during the middle of discharge, and once near end of discharge | Active (Volume) (Quality) |
| CAM-6 | Outfall area for the Sewage Wetland | Monthly, During periods of observed flow | Active Volume (Quality) |

2. The Licensee shall measure and record, in cubic metres, the monthly and annual quantities of water pumped at Monitoring Program Station CAM-1, for all purposes.
3. The Licensee shall measure and record the annual quantities of sewage solids or sludge removed from the Modified Sewage Disposal Facility.

4. The Licensee shall inspect weekly, during the period of May and October, at Monitoring Program Stations, CAM-4, CAM- 5, and CAM-6, for Effluent or water flow in order to fulfill the monitoring requirements of Part D, Item 5 and/or Part H, Item 1. A record of inspections shall be maintained and made available to an Inspector upon request.
5. The Licensee shall sample at Monitoring Program Stations CAM-4, CAM-5, and CAM-6, monthly during periods of observed flow. Samples shall be analyzed for the following parameters:

| | |
|---|-----------------------------|
| Biochemical Oxygen Demand (BOD ₅) | Fecal Coliforms |
| Total Suspended Solids | pH |
| Conductivity | Nitrate-Nitrite |
| Oil and Grease | |
| Magnesium | Calcium |
| Sodium | Potassium |
| Chloride | Sulphate |
| Total Hardness | Total Alkalinity |
| Ammonia Nitrogen | Total Zinc |
| Total Cadmium | Total Iron |
| Total Cobalt | Total Manganese |
| Total Chromium | Total Nickel |
| Total Copper | Total Lead |
| Total Aluminum | Total Arsenic |
| Total Mercury | Total Organic Carbon (TOC)* |

6. The Licensee shall sample at Monitoring Program Stations CAM-5 and CAM-6, at least once prior to discharge, once during the middle of discharge and once near the completion of discharge event in order to verify compliance with relevant parameters under Part D, Item 5.
7. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board.
8. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
9. The Board has accepted the Plan entitled Quality Assurance and Control Plan – Lagoon and Landfill, dated November 2013, as accompanied by an approval letter from an Analyst (AANDC), submitted as additional information with the application.
10. The Licensee shall annually review and revise as necessary the Quality Assurance and Quality Control Plan, in Part H, Item 9, and submit any updates to the Board for review along with the relevant approval letter from the accredited laboratory.
11. The Licensee shall measure and record the annual quantities of sewage solids

removed from the Modified Sewage Disposal Facility and Modified Sewage Disposal Facility.

12. Additional monitoring stations, sampling and analyses may be requested by an Inspector.
13. The Licensee shall include all of the data and information required by the “Monitoring Program” complete with an interpretation and discussion of the results, in the Licensee's Annual Report, as required *per* Part B, Item 1, or as requested by an Inspector.
14. Modifications to the Monitoring Program may be made only upon written approval from the NWB. Requests for changes to the Monitoring Program should be forwarded to the NWB in writing, and should include the justification and appropriate evidence to support the change.