



## **NUNAVUT WATER BOARD**

**TYPE “A” WATER LICENCE NO: 3AM-ARV2232**

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**Licence No: 3AM-ARV2232**

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 ARVIAT**

(Licensee)

**P.O. BOX 150 ARVIAT, NUNAVUT, X0C 0E0**

(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: **3AM-ARV2232 / TYPE "A"**

Water Management Area: **MAGUSE WATERSHED (11)**

Location: **KIVALLIQ REGION, NUNAVUT**

Classification: **MUNICIPAL UNDERTAKING**

Purpose: **USE OF WATER AND DEPOSIT OF WASTE**

Quantity of Water use not  
To exceed: **235,393 CUBIC METRES PER ANNUM**

Issuance Date: **JULY 13, 2022**

Expiry of Licence: **JULY 12, 2032**

This Licence issued (Motion Number: 2022-03-P16-05) and recorded at Gjoa Haven, Nunavut, includes and is subject to the annexed conditions.



**Lootie Toomasie,  
Nunavut Water Board, Chair**



**APPROVED** Daniel Vandal  
**BY:** Minister of Northern Affairs

**APPROVAL**  
**DATE:** **AUG 24 2022**

## **PART A: SCOPE, DEFINITIONS AND ENFORCEMENT**

### **1. SCOPE**

1. Type “A” Water Licence No: 3AM-ARV2232 (Licence) authorizes the Hamlet of Arviat (Licensee) to use Water and deposit Waste in support of a Municipal undertaking, as classified under Schedule 1 of the *Regulations*, located within the municipal boundaries at the following approximate geographic coordinates:

Undertaking	Latitude	Longitude
Municipal	61°06’30” N	94°03’31” W

The scope of activities, works, and undertakings authorized in accordance with the terms and conditions of this Licence is as follows:

- a. Pumping of 235,393 m<sup>3</sup> of Water *per* Annum from Wolf Creek to a Water reservoir during open water season to support community needs;
  - b. Continued operation and maintenance of the following municipal facilities:
    - Water Supply Facilities,
    - Solid Waste Disposal Facility, and
    - Sewage Disposal Facility comprising
      - Sewage lagoon,
      - Wetland Treatment Area, and
      - Abandoned Sewage Lagoons.
  - c. Roads management, watercourse crossings and culvert installations within municipal boundaries.
2. This Licence is issued subject to conditions contained herein with respect to the use of Waters 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 *Act*, or other statutes imposing more stringent conditions relating to the quantity, type or manner 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
3. Compliance with the terms and conditions of this Licence does not absolve the Licensee from the responsibility for compliance with all applicable legislation, guidelines, and directives.

### **2. DEFINITIONS**

1. The Licensee shall refer to [Schedule A](#) for definitions of terms used in this Licence.



### **3. ENFORCEMENT**

1. Failure to comply with this Licence shall be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*.
2. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*.
3. For the purpose of enforcing the terms and conditions of this Licence with respect to the use of Water and deposit or Discharge of Waste in Waters, Inspectors appointed under the *Act*, hold all powers, privileges, and protections that are conferred upon them by the *Act* or by other applicable laws.

### **PART B: GENERAL CONDITIONS**

1. The Licensee shall file, with the Board for review, no later than the 31<sup>st</sup> of March of the year following the calendar year being reported, an Annual Report formulated in accordance with the requirements under [Schedule B](#) of this Licence.
2. The Licensee shall maintain a copy of this Licence at the Municipal Office and Water Supply Facilities at all times.
3. The Licensee shall file an application for renewal or amendment of this Licence at least one (1) year prior to the Licence expiry or requested amendment.
4. The Licensee shall install, operate, and maintain the meters, devices or other appropriate methods for measuring the volumes of Water used and Waste discharged or deposited to the satisfaction of an Inspector.
5. The Licensee shall post the necessary signs to identify the stations of the Monitoring Program included under [Schedule I](#) of this Licence. All signage shall be in the Official Languages of Nunavut.
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 approval and/or directions from the Board. The Board may alter or modify a Plan if necessary to achieve 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 accepted by the Board or approved by the Board in writing.



8. The Licensee shall, within thirty (30) days of notification or within the timeframe specified by the Board, submit for review and/or the Board's approval revisions to any plan that is unacceptable to the Board.
9. Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of the Licence, and any additional terms and conditions imposed upon approval of a Plan by the Board shall also become part of the Licence. All relevant terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.
10. The Licensee shall review the Plans or Manuals referred to in this Licence as required by changes in operation and/or technology and modify the Plans/Manuals accordingly. Revisions to any Plan/Manual shall be submitted in the form of an addendum to be included within the Annual Report required under Part B, Item 1, complete with the lists of revisions detailing where significant content changes are made.
11. The Licensee shall immediately report to the NWT/NU 24-Hour Spill Report Line (867-920-8130) any spills of Waste, which are reported to or observed by the Licensee, which may have resulted from the operations of Water supply and Waste disposal activities.
12. Any communication with respect to this Licence shall be made in writing to the attention of:

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](mailto:licensing@nwb-oen.ca)
13. Any notice made to an Inspector shall be made in writing to the attention of:

Water Resources Officer  
Nunavut District, Nunavut Region  
P.O. Box 100  
Iqaluit, NU X0A 0H0  
Telephone: (867) 975-4284  
Fax: (867) 979-6445
14. Unless otherwise directed by the Board in writing, the Licensee shall submit to the Board one (1) electronic copy of all reports, studies, and Plans generated for the works, activities,



and undertakings under this Licence. All Reports, studies or Plans submitted to the Board by the Licensee shall include an executive summary in English, Inuktitut, and French.

15. The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the Board is received by the Board and maintain on file a copy of the acknowledgment of receipt issued by the Manager of Licensing or his/her designate.
16. This Licence is assignable as provided for in section 44 of the *Act*.
17. The expiry or cancellation of this Licence does not relieve the Licensee from any obligation imposed by the Licence, or any other regulatory requirement.
18. The Schedules attached to this Licence provide details regarding the requirements associated with specific items in the main body of the Licence and are included in the Schedule to provide greater clarity and as an aid to interpretation for the Licensee. If the Board subsequently determines that an item in any of the Schedules requires revision in order to better reflect the intent and objectives of the Licence, the Board may at its discretion, and upon consulting and providing written notice to the Licensee and interested parties, revise the Schedule accordingly. Unless the Board directs otherwise, such revision may not necessarily be considered as an "Amendment" to the Licence.
19. Unless otherwise stated, references in the Licence to any specific legislation, policy, guideline or other regulatory requirement are deemed to refer to the regulatory requirement as may be amended or as may be expressly replaced by successor legislation, policy, guidelines or other regulatory requirements after the Licence is approved by the Minister.

#### **PART C: CONDITIONS APPLYING TO SECURITY**

1. The Licensee is not required to post reclamation security for the activities, works, and undertakings authorized under this Licence.

#### **PART D: CONDITIONS APPLYING TO THE USE OF WATERS AND WATER MANAGEMENT**

1. The Licensee shall obtain all fresh Water for the Municipal Undertaking from Wolf Creek at Monitoring Program Station ARV-1 using the Water Supply Facilities, or as otherwise approved by the Board in writing.



2. The annual quantity of Water used for all purposes from Wolf Creek shall not exceed two hundred thirty-five thousand three hundred and ninety-three (235,393) cubic metres *per annum*, or as otherwise approved by the Board in writing.
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 water body and shall provide necessary controls to prevent such erosion.
6. Sediment and erosion control measures shall be implemented prior to and maintained during the operation to prevent entry of sediment into Water.
7. The Licensee shall maintain the Water Supply Facilities to the satisfaction of the Inspector.
8. The Licensee shall submit to the Board for review by October 31, 2022, the status information on screen used for Water intake hoses, including the mesh size.

**PART E: CONDITIONS APPLYING TO WASTE DISPOSAL AND MANAGEMENT**

1. The Licensee shall direct all Sewage to the Sewage Disposal Facility or as otherwise approved by the Board.
2. All Effluent discharged from the Sewage Disposal Facility at Monitoring Program Station ARV-4 shall not exceed the following Effluent quality limits

Parameter	Maximum Concentration of any Grab Sample
CBOD	100 mg/L
Total Suspended Solids	120 mg/L
Fecal Coliforms	$1 \times 10^4$ CFU/dl
Oil and grease	No visible sheen
pH	Between 6 and 9

3. A freeboard limit of 1.0 metre, or as recommended by a qualified Engineer and as approved by the Board in writing, shall be maintained at all dams, dyke or structures intended to contain, withhold, divert or retain Water or Wastes.





4. The Licensee shall provide at least ten (10) days notification to an Inspector, prior to initiating any planned discharges from any Solid or Sewage Waste Disposal Facility.
5. The Sewage Disposal Facility shall be maintained and operated to the satisfaction of an Inspector in such a manner as to prevent structural failure.
6. The Licensee shall maintain the Licensed Facilities to the satisfaction of an Inspector.
7. The Licensee shall dispose and permanently contain all solid Waste at the Solid Waste Disposal Facility or as otherwise approved by the Board in writing.
8. The Licensee shall segregate and store all hazardous materials and/or Hazardous Waste, waste oil, and non-combustible Waste generated through the course of the operation within the 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 a licensed waste disposal facility.
9. The Licensee shall implement measures to ensure hazardous materials and/or leachate from the Solid or Sewage Waste Disposal Facility does not enter Water.
10. The Licensee shall provide a minimum of ten (10) days' notice to an Inspector, of the intent to open burn municipal Waste in accordance with the *Government of Nunavut's Environmental Guideline for the Burning and Incineration of Solid Waste (2012)*, at the designated location at the 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 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.
12. The Licensee shall maintain records of all Waste removed from site and records of confirmation of proper disposal of removed Waste. These records shall be made available to an Inspector upon request.

**PART F: CONDITIONS APPLYING TO MODIFICATIONS AND CONSTRUCTION**

1. The Licensee shall submit to the Board for approval for-construction design drawings stamped and signed by an Engineer at least 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 consent from the Board, carry out Modifications to the facilities or infrastructure authorized under this Licence, 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. Such Modifications do not place the Licensee in contravention of the Licence or the Act;
  - c. Such Modifications are consistent with the NPC Land Use Planning and NIRB Screening Determinations;
  - d. The Board has not, within 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
  - e. The Board has not rejected the proposed Modifications.
3. Modifications for which any of the conditions referred to above have not been met can be carried out only with written approval from the Board.
4. Applications for modifications shall contain:
  - a. A description of the facilities and/or works to be constructed;
  - b. The proposed location of the structure(s);
  - c. Identification of any potential impacts to the receiving environment;
  - d. A description of any monitoring required, including sampling locations, parameters measured, and frequencies of sampling;
  - e. Schedule for construction;
  - f. Drawings of Engineered Structures signed and stamped by a qualified an Engineer; and
  - g. Proposed sediment and erosion control measures.
5. The Licensee shall, within ninety (90) days from completion of Modification or construction of facilities and/or infrastructure associated with this Undertaking, submit to the Board a Construction Summary Report prepared by a qualified Engineer that includes, among other relevant information, as-built drawings, documentation of field decisions that deviated from original plans, and any information used to support these decisions.
6. The Licensee shall implement measures to ensure that all materials used in the construction of the facilities or infrastructure associated with the Undertaking are free of contaminants, to the extent that they do not cause harmful or significant effects to Water.



7. The Licensee shall, if contamination of surface and/or groundwater is encountered during construction and excavation, notify the Inspector immediately and implement the Spill Contingency Plan, referred to in Part H, Item 1.
8. The Licensee shall develop and implement measures necessary to prevent and mitigate erosion and/ or the release of sediment into Water during any construction activities associated with the Undertaking.
9. 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.
10. With respect to earthworks, the deposition of debris or sediment into or onto any water body is prohibited. These materials shall be disposed at a minimum distance of thirty-one (31) metres from the ordinary High-Water Mark in such a fashion that they do not enter the Water.
11. The construction or disturbance of any stream/lake bed or banks of any definable watercourse are not permitted, unless authorized by the Board in writing.

**PART G: CONDITIONS APPLYING TO OPERATIONS AND MAINTENANCE**

1. The Licensee shall implement the Plan entitled “Operation & Maintenance Manual Arviat Water Treatment Plant” dated March 2020 that was submitted with the Application and has been approved by the Board with the issuance of the Licence.
2. The Licensee shall implement the Plan entitled “Arviat Sewage Treatment Facility Operation and Maintenance Plan” dated March 2021 that was submitted with the Application and has been approved by the Board with the issuance of the Licence.
3. The Licensee shall, at least sixty (60) days prior to commissioning the expanded Sewage Disposal Facility, submit to the Board for approval an updated Plan referred to in Part G, Item 2.
4. The Licensee shall implement the Plan entitled “Hamlet of Arviat Solid Waste Management Facility Operation and Maintenance Plan” dated October 2021 that was submitted with the Application and has been approved by the Board with the issuance of the Licence.
5. The Licensee shall, with the 2022 Annual Report, submit to the Board for review the results of the 2022 Wetland Treatment Area performance assessment study.



6. The Licensee shall, with the 2023 Annual Report, submit to the Board for review the Solid Waste Disposal Facility Improvements Project Report. The Report shall include a feasibility study on conversion of the Abandoned Sewage Lagoons into a part of the Solid Waste Disposal Facility, or if applicable timelines for closure and reclamation of the Abandoned Sewage Lagoons.
7. The Licensee shall review all Plans or Manuals referred to in this Part as required by changes in operation and/or technology and modify accordingly. Revisions are to be submitted in the form of an Addendum to be included with the Annual Report, unless directed otherwise by the Board or an Inspector.
8. The Licensee shall maintain all facilities approved under this Licence in accordance with applicable guidelines, procedures, and regulations and to the satisfaction of an Inspector.
9. The Licensee shall perform more frequent inspections of the engineered facilities at the request of an Inspector.
10. An inspection of all engineered facilities associated with this Licence shall be carried out at least once annually during open water season by a qualified Engineer. The Engineer’s report shall be submitted to the Board along with the Annual Report, including a cover letter from the Licensee outlining an implementation plan to address each of the Engineer’s recommendations.

#### **PART H:      CONDITIONS APPLYING TO SPILL CONTINGENCY**

1. The Licensee shall implement the Plan entitled “Hamlet of Arviat Environmental Emergency Contingency Plan” dated January 2021 that was submitted with the Application and has been approved by the Board with the issuance of the Licence.
2. The Licensee shall prevent any chemicals, petroleum products or Wastes associated with the activities under this Undertaking from entering Water. All Sumps and fuel caches shall be located at a distance of at least thirty-one (31) metres from the ordinary High-Water Mark of any adjacent water body and inspected on a regular basis.
3. The Licensee shall conduct any equipment maintenance and servicing in designated areas and shall implement special procedures (such as the use of drip pans) to manage motor fluids and other Waste and contain potential spills.
4. The Licensee shall, subject to Section 16 of the Regulations, report any unauthorized deposits of Waste or foreseeable unauthorized deposits of Waste and/or discharges of Effluent, and:



- a. Employ the appropriate contingency measures outlined in the Environmental Emergency Contingency Plan referred to in Part H, Item 1; take whatever steps are immediately practicable to protect human life, health and the environment;
  - b. Report the incident immediately via the NWT/NU 24-Hour Spill Reporting Line (867) 920-8130 and to the Inspector at (867) 975-4284; and
  - c. For each spill occurrence, submit to the Inspector, within thirty (30) days after initially reporting the event, a detailed report 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 any preventative measures to be implemented.
5. The Licensee shall, in addition to Part H, Item 4, regardless of the quantity of releases of harmful substances, report to the NWT/NU 24-Hour Spill Reporting Line, if the release is near or into a water body.

#### **PART I: CONDITIONS APPLYING TO THE MONITORING PROGRAM**

1. The Licensee shall monitor the Water Supply, Sewage Disposal, and Solid Waste Disposal Facilities authorized under this Licence in accordance with requirements included under Schedule I.
2. The Licensee shall determine, in consultation with the Inspector, the GPS coordinates of all locations where sources of Water are utilized for all purposes and Wastes associated with the Undertaking are deposited at all Monitoring Program Stations, and provide these coordinates within the Annual Report.
3. The Licensee shall measure by instrument and record in cubic metres, the daily, monthly and annual quantities of Water extracted from Wolf Creek for all purposes at Monitoring Program Station ARV-1.
4. The Licensee shall sample during open water season at Monitoring Program Stations ARV-2a, ARV-3, ARV-3a, ARV-4, ARV-5, and ARV-6 and analyze for the parameters in accordance with Schedule I, Tables 1 and 2.
5. The Licensee shall measure the monthly and annual volumes of sludge removed from the Sewage Disposal Facility at Monitoring Program Station ARV-9 accordance with Schedule I, Tables 1 and 2.
6. All sampling, sample preservation and analyses required under Schedule I 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.

7. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
8. The Licensee shall, with the 2022 Annual Report, update and submit to the Board for review the Plan entitled "Environmental Monitoring Program and Quality Assurance/Quality Control Plan" dated January 2021 (QA/QC Plan) to include the frequency of replicate and duplicate sampling.
9. The Licensee shall annually review the QA/QC Plan referred to in Part I, Item 8 and modify it as necessary. Revised QA/QC Plans shall be submitted to the Board with a current approval letter from an accredited lab and shall meet the standards set out in Part I, Item 6 and Item 7 of the Licence.
10. The Licensee shall include all of the data and information required by the Monitoring Program within the Annual Report as required per Part B, Item 1 or as otherwise requested by an Inspector and/or by the Board.
11. Additional Monitoring may be requested by the Board and/or the Inspector.
12. The Monitoring Program and compliance dates specified in the Licence may be modified at the discretion of the Board in writing and do not necessarily constitute an Amendment to the Licence as defined in the *Act*.

## **PART J: CONDITIONS APPLYING TO CLOSURE AND RECLAMATION**

1. The Licensee shall, at least six (6) months prior to decommissioning any facilities or upon submission of final design drawings for the construction of new facilities to replace the existing ones, submit to the Board for approval in writing a Closure and Reclamation Plan for the facilities being decommissioned. The Plan shall be prepared by an Engineer in accordance with the industry's best practices and relevant guidelines and shall incorporate, where applicable, the following information:
  - a. Facilities being abandoned;
  - b. Maps delineating all disturbed areas and site facilities;
  - c. Environmental conditions existing before the use of the site;
  - d. Remediation objectives;
  - e. Any sites affected by waste spills and measures taken to remediate these sites;
  - f. An implementation schedule;
  - g. Type and source of cover materials;



- h. Future use of the area;
  - i. Hazardous wastes;
  - j. Financing of the restoration/remediation costs.
- 2. The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee’s operations.
- 3. In order to promote growth of vegetation and the needed microclimate for seed deposition, all disturbed surfaces shall be prepared by ripping, grading, or scarifying the surface to conform to the natural topography.
- 4. Areas that have been contaminated by hydrocarbons shall be reclaimed to meet objectives as outlined in the Government of Nunavut’s *Environmental Guideline for Site Remediation*, January 2002. The use of reclaimed soils for the purpose of back fill or general site grading may be carried out only upon consultation and approval by the Government of Nunavut, Department of Environment and an Inspector.
- 5. The Licensee shall complete the restoration work within the time schedule specified in an approved Closure and Reclamation Plan, or as subsequently revised and approved by the Board.

## **SCHEDULES**

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[Schedule A](#): Scope, Definitions, and Enforcement

[Schedule B](#): General Conditions

Schedule C: No Schedule for Security

Schedule D: No Schedule for Use of Water and Water Management Plans

Schedule E: No Schedule for Deposit of Waste and Waste Management

Schedule F: No Schedule for Modifications and Construction

Schedule G: No Schedule for Operations and Maintenance

Schedule H: No Schedule for Spill Contingency Planning

[Schedule I](#): Conditions Applying to Monitoring

Schedule J: No Schedule for Closure and Reclamation





## **Schedule A:**                **Definitions**

In this Licence No: 3AM-ARV2232

“**Abandoned Sewage Lagoons**” means two historic sewage lagoon cells no longer in operation as described in the Application;

“**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. It may also be considered as an appendix or supplement;

“**Amendment**” means a change to any terms and conditions of this Licence through application to the NWB, requiring a change, addition, or deletion of specific terms and conditions of the Licence not considered as a modification;

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

“**Annually**” means, in the context of monitoring frequency, one sampling event occurring every 365 days with a minimum of 200 days between sampling events;

“**Application**” means, for the purposes of this License, the totality of the NWB Public Registry opened as a result of the filing of the Application to replace the expired Water Licence No: 3AM-ARV1016;

“**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 Article 13 of the *Nunavut Agreement* and under section 14 of the *Act*;

“**Discharge**” means the release of any water or waste to the receiving environment;

“**Effective Date**” means the date on which the Minister of Northern Affairs approves the Licence;

“**Effluent**” means treated or untreated liquid waste material that is discharged into the environment from the site water management facility such as a settling pond 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*;



“**Engineered Structure**” means any facility, which was designed and approved by a Professional Engineer registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists;

“**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;

“**Grab Sample**” means an undiluted quantity of material 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 the component of Effluent produced from domestic use (i.e. washing, bathing, food preparation and laundering), excluding Sewage;

“**Hazardous Waste**” means materials or contaminant which are categorized as dangerous goods under the *Transportation of Dangerous Goods Act* (1992) and/or that is no longer used for their original purpose and is intended for recycling, treatment, disposal or storage;

“**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*;

“**Licence**” means this Type “A” Water Licence No: 3AM-ARV2232, issued by the Nunavut Water Board in accordance with the *Act*, to the Hamlet of Arviat;

“**Licensed Facilities**” means the Water Supply Facilities, Solid Waste Disposal Facility, and Sewage Disposal Facility;

“**Licensee**” means to whom the Licence 3AM-ARV2232 is issued to or assigned;

“**Minister**” means the Minister of Northern Affairs Canada;

“**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;

“**Monitoring Program**” means the program to collect data on surface water quality and quantity to assess impacts to the environment of an appurtenant undertaking;

“**Monthly**” means, in the context of monitoring frequency, one sampling event occurring every thirty (30) days with a minimum of twenty-one (21) days between sampling events;



“**Nunavut Agreement**” 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;

“**Quality Assurance / Quality Control (QA/QC)**” Quality Assurance means the system of activities designed to better ensure that quality control is done effectively; Quality Control means the use of established procedures to achieve standards of measurement for the three principal components of quality: precision, accuracy and reliability;

“**Regulations**” means the *Nunavut Waters Regulations (SOR/2013/669 18th April, 2013)*;

“**Sewage**” means all toilet wastes and greywater;

“**Sewage Disposal Facility**” comprises the area, including Wetland Treatment Area, engineered lagoon designed to contain Sewage, and the Abandoned Sewage Lagoons as described in the Application;

“**Solid Waste Disposal Facility**” comprises the area and associated structures designed to contain solid Waste as described in the Application;

“**Undertaking**” means an undertaking in respect of which water is to be used or waste is to be deposited, of a type set out in Schedule I of the *Regulations*;

“**Use**” means use as defined in S.4 of the Act;

“**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;

“**Wastewater**” means the water generated by site activities or originates on-site that requires treatment or any other water management activity;

“**Water or Waters**” mean water as defined in S.4 of the *Act*, inland waters, whether in a liquid or solid state, on or below the surface of the land;

“**Water Supply Facilities**” means the area and associated intake infrastructure at Wolf Creek, raw water storage reservoirs, pump-house, and the Water Treatment Plant as described in the Application;

“**Wetland Treatment Area**” comprises the area of land immediately downstream of the engineered lagoon as described in the Application;

“**Water Treatment Plant**” means the engineered system that is designed for storage, treatment and distribution of fresh water for domestic purposes as described in the Application.



### **Schedule B: Annual Reporting Requirements**

The Annual Report referred to in Part B, Item 1, shall include the following:

- a. The daily, monthly and annual quantities in cubic metres of fresh Water withdrawn from Wolf Creek at Monitoring Station ARV-1;
- b. The monthly and annual quantities in cubic metres of any Sewage discharged into the Sewage Disposal Facility at Monitoring Station ARV-3;
- c. The monthly and annual quantities in cubic metres of sludge removed from the Sewage Disposal Facility;
- d. A summary report which includes all data and information generated under the Monitoring Program, including the QA/QC program, in electronic formats acceptable to the Board;
- e. A summary of modifications and/or major maintenance work carried out on the Water Supply, Solid Waste Disposal, and Sewage Disposal Facilities, including all associated structures;
- f. A progress report and revisions (if applicable) to any studies requested by the Board that relate to Waste management, Water use or reclamation and a brief description of any future studies planned by the Licensee including, a non-technical executive summary for the general public, translated into Inuktitut;
- g. Any revisions required, in the form of addenda, to Plans, Manuals and Reports approved under the Licence;
- h. A list and description, including volumes, of all unauthorized discharges, spills and summaries of follow-up action taken;
- i. A summary of any closure and reclamation work undertaken and an outline of any work anticipated for the next year, including any changes to implementation and scheduling;
- j. A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector;
- k. A summary of any studies, reports and plans requested by the Board that relate to the use of Water, Waste disposal, and/or reclamation and a brief description of any future studies planned; and
- l. Any other details on the use of Water or Waste disposal requested by the Board by November 1<sup>st</sup> of the year being reported.



**Schedule I: Conditions Applying to Monitoring**

**Table 1 – Water Quality Parameters**

Test Group	Analytical Parameter	Unit of Measurement
Effluent (E)	pH (field and lab)	NA
	Conductivity (field and lab)	µS/cm
	Temperature (field)	°C
	Total Suspended Solids (TSS)	mg/L
	Biochemical Oxygen Demand	mg/L
	Fecal Coliform	CFU/100 mL
	Nitrate-Nitrite	mg/L
	Ammonia Nitrogen	mg/L
	Sulphate	mg/L
	Chloride	mg/L
	Total Hardness	mg/L
	Total Alkalinity	mg/L
	Total Phenols	mg/L
	Total Organic Carbon (TOC)	mg/L
ICP Metals Scan (Total) (Me)	Al, As, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Na, Ni, Pb, Zn	mg/L
Hydrocarbons (H)	Total Petroleum Hydrocarbons (TPH)	mg/L
	Polycyclic Aromatic Hydrocarbons (PAH)	mg/L
	Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	mg/L
Flow (F)	Volume	m <sup>3</sup>



**Table 2 – Water Quality Monitoring Criteria**

Station ID	Description	Status	Parameter	Testing / Measurement Frequency	Reporting Frequency
ARV-1	Raw Water intake at Wolf Creek	Active	F	Monthly	Annually
ARV-2a	Effluent from the discharge point of the Solid Waste Disposal Facility	Active	F, E, Me, H	<u>Quality</u> Monthly during periods of observed flow and prior to discharge	Annually
ARV-2b	Effluent from the discharge point of the New Solid Waste Disposal Facility upon its completion	Inactive	F, E, Me, H	<u>Quality</u> Monthly during periods of observed flow and prior to discharge	Annually
ARV-3	Raw Sewage at truck offload point	Active	F	Monthly	Annually
ARV-3a	Wastewater from sewage lagoon(s) to Wetland Treatment Area	New	F, E, Me, H	Monthly	Annually
ARV-4	Effluent from the Final Discharge Point of the Sewage Disposal Facility (end of Wetland Treatment Area)	Active	E, Me, H	<u>Quality</u> Monthly during periods of observed flow	Annually
ARV-5	Discharge from the Bulky Metal Waste Area	Active	E, Me	Monthly during periods of observed flow	Annually
ARV-6	Discharge from the Hazardous Waste Storage Area	Active	E, Me, H	Monthly during periods of observed flow	Annually
ARV-7	Water level in Wolf Creek	Inactive			
ARV-8	Water level in Sewage Disposal Facility lagoon	Inactive			



Station ID	Description	Status	Parameter	Testing / Measurement Frequency	Reporting Frequency
ARV-9	Sewage Sludge removed from the Sewage Disposal Facility	Active	F	Monthly	Annually
ARV-10	Effluent from the Final Discharge Point of the Hydrocarbon Impacted Soil Storage and Treatment Facility	Inactive			
ARV-11	Effluent discharge from dewatering contaminated soil areas	Inactive			