

P.O. BOX 119
GJOA HAVEN, NUNAVUT
XOB 1J0
TEL: (867)360-6338
FAX: (867)360-6369

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NUNAVUT IMALIRIYIN KATIMAYIT
NUNAVUT WATER BOARD
OFFICE DES EAUX DU NUNAVUT



General Water Licence Application (Application for a new Water Licence)

Document Date: April 2013

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DOCUMENT MANAGEMENT

Original Document Date: April 2010

DOCUMENT AMENDMENTS

	Description	Date
(1)	Updated for public distribution as separate document from NWB Guide 4	June 2010
(2)	Updated NWB logos and reformatted table to allow rows to break across page	May 2011
(3)	Update NWB logo	April 2013
(4)		
(5)		
(6)		
(7)		
(8)		
(9)		
(10)		



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GENERAL WATER LICENCE APPLICATION (APPLICATION FOR NEW WATER LICENCE)

The applicant is referred to the NWB's Guide 4: Guide to Completing and Submitting a Water Licence Application for a New Licence for more information about this application form.

LICENCE NO: (for NWB use only)	
1. APPLICANT (PROPOSED LICENSEE) CONTACT INFORMATION (name, address) Transport Canada Technical and Environmental Services Contact: Jackie Barker, Environmental Officer 344 Edmonton Street, Winnipeg, Manitoba R3B 2L4 Phone: 204-983-4042 Fax: None e-mail: Jackie.barker@tc.gc.ca	2. APPLICANT REPRESENTATIVE CONTACT INFORMATION if different from Block 1 (name, address)
3. NAME OF PROJECT (including the name of the project location) Former Iqaluit Metal Dump Remediation Project	
4. LOCATION OF UNDERTAKING Lot 667, Iqaluit, 69309 CLSR, NU Project Extents NW: Latitude: (63° 44' 18.5892" N) Longitude: (68° 33' 27.3708" W) NE: Latitude: (63° 44' 10.122" N) Longitude: (68° 32' 58.5096" W) SE: Latitude: (63° 44' 13.866" N) Longitude: (68° 33' 33.1488" W) SW: Latitude: (63° 44' 1.7232" N) Longitude: (68° 33' 8.6292" W) Camp Location(s) No camp Latitude: (° ' " N) Longitude: (° ' " W)	

5. **MAP** - Attach a topographical map, indicating the main components of the undertaking.

SEE ATTACHED FIGURES 1 AND 2

NTS Map Sheet No.: _____ Map Name: _____ Map Scale: _____

6. **NATURE OF INTEREST IN THE LAND** - Check any of the following that are applicable to the proposed undertaking (at least one box under the 'Surface' header must be checked).

Sub-surface

☐ Mineral Lease from Nunavut Tunngavik Incorporated (NTI)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ Mineral Lease from Indian and Northern Affairs Canada (INAC)
Date (expected date) of issuance: _____ Date of expiry: _____

Surface

☐ Crown Land Use Authorization from Indian and Northern Affairs Canada (INAC)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ Inuit Owned Land (IOL) Authorization from Kitikmeot Inuit Association (KIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ IOL Authorization from Kivalliq Inuit Association (KivIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ IOL Authorization from Qikiqtani Inuit Association (QIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ Commissioner's Land Use Authorization
Date (expected date) of issuance: _____ Date of expiry: _____

X Other: _____
Date (expected date) of issuance: _____ Date of expiry: _____

Name of entity(s) holding authorizations:

 The project site is on untitled land owned by The Government of Nunavut. Lot 667, Iqaluit, 69309 CLSR, NU

7. **NUNAVUT PLANNING COMMISSION (NPC) DETERMINATION**

Indicate the land use planning area in which the project is located.

<input type="checkbox"/> North Baffin	<input type="checkbox"/> Keewatin
X South Baffin	<input type="checkbox"/> Sanikiluaq
<input type="checkbox"/> Akunnig	<input type="checkbox"/> West Kitikmeot

Is a land use plan conformity determination required?

☐ Yes ☒ No

If Yes, indicate date issued and attach copy _____
If No, provide written confirmation from NPC confirming that a land use plan conformity review is not required.

SEE ATTACHED LETTER DATED FEBRUARY 20, 2017 FROM NPC TO TC WHICH INDICATES THAT THE PROJECT PROPOSAL IS OUTSIDE THE AREA OF AN APPLICABLE REGIONAL LAND USE PLAN. NPC FILE # 148456

8. NUNAVUT IMPACT REVIEW BOARD (NIRB) DETERMINATION

Is an Article 12 Part 4 screening determination required?

X Yes

☐ No

If Yes, indicate date issued and attach copy **SEE ATTACHED LETTER DATED FEBRUARY 27, 2017 FROM NIRB TO TC WITH REQUEST FOR TC TO SUBMIT ONLINE APPLICATION BY MARCH 13, 2017. TC IS IN THE PROCESS OF PREPARING THAT APPLICATION.** _____

If No, provide written confirmation from NIRB confirming that a screening determination is not required.

9. DESCRIPTION OF UNDERTAKING – List and attach plans and drawings or project proposal.

The undertaking is the remediation of the former Iqaluit vehicle dump and community landfill. The remediation work will include the following activities (see attached figure):

- Removal of on-site debris, with or without comingling impacted soils. Debris will be disposed of at the on-site landfill or packaged for south shipment, depending on the waste stream. The debris removal will address the source of environmental impacts at the site and the physical hazards.
- Targeted hot spot removal of contaminant impacted soils sparsely distributed at the site. These soils will be disposed of at the on-site landfill, Iqaluit land treatment unit, or packaged for south shipment, depending on the nature of the impact. The impacted soil removal will address the environmental and human health risks associated with the contamination soils at the site.
- Targeted hot spot removal of contaminant impacted sediment and associated soil from the drainage feature located in the vehicle dump, as required and accessible. The hot spot sediment/soil removal will support the natural attenuation of impacts observed in downstream ponds. The sediments/soils will be disposed of at the on-site landfill, the Iqaluit land treatment unit, or packaged for south shipment, depending on the nature of the impact. The sediments might require drying prior to disposal. Mitigation measures will be implemented during sediment removal to ensure that there is no release of sediments downstream. A rip-rap structure may be constructed in the drainage feature subject to hot spot removal to act as a passive treatment system to further enhance the natural recovery of the remaining downstream sediment and surface water impacts.
- Engineering decommissioning of the on-site landfill to achieve a proper slope using aggregate material available in Iqaluit and following the consolidation of exposed debris and impacted soils from surrounding areas. The decommissioning of the landfill would address the stability issues and will include extensive swale designs to divert precipitation and melt water away from the landfill slopes to prevent both erosion and water infiltration. A high level of effort will be assigned to the design and implementation of surface water diversion at the top, sides, and toe of the landfill to reduce water runoff loading and erosion of the landfill face.

- Building of a temporary road access from the top of escarpment to the lower area in preparation of the physical removal of debris, impacted sediments and soils. It is anticipated that the access road will be built without crossing the drainage features.
- Implementation of mitigation measures for fugitive air emissions, sediment release control, surface water control and any other requirements of licenses and permits associated with the project. The mitigation measures will minimize the environmental impact of the remediation project.
- Perform final capping, contouring, and revegetation of the site, including closing the access road and blending it into the natural environment.
- Monitor the performance of the remedial works in terms of physical stability, erosion, revegetation and attenuation of contaminants in soils, sediments, and surface water. It is anticipated that performance monitoring will be undertaken on an annual basis for a minimum period of three years following the completion of the remediation works. The remediation outcome will be included in a Remediation Closure Report for the site.

10. OPTIONS – Provide a brief explanation of the alternative methods or locations that were considered to carry out the project.

The undertaking is required to address the physical and environmental impacts at the site. A remedial action plan including remedial option evaluation was completed. The options were considered against predefined objectives that included minimizing human health and safety risks at the site; protecting ecological habitats; minimizing impacts during remediation; minimize long-term care and maintenance; and blending the final site conditions with the surrounding environment where possible while being cost-effective and technically feasible.

Alternative methods and locations that were considered included full removal off-site of landfill debris and other scattered debris, engineered wetlands for the treatment of contaminant impacted sediments in downstream ponds, in-situ treatment of soil contamination and managing impacts in place through site-specific contaminated site risk assessment and management. The options were reviewed against the following screening criteria:

- Effectiveness in meeting the selected remediation and/or risk management standards;
- Applicability to site conditions;
- Complexity and public acceptance;
- Risk to human health and the environment;
- Time frame to implement and complete; and
- Comparative cost.

The option selected, and described above under point 9, met all screening criteria. The option targets the offsite disposal of significantly impacted soils and sediments, the offsite removal of selected debris based on their waste stream category, the onsite consolidation of debris and comingling impacted soils, the engineered decommissioning of the site main landfill and the natural recovery of the remaining surface water and sediment impacts.

Additional details are available in *Remedial Action Plan, Former Metal Dump and Community Landfill, Iqaluit, Nunavut. 27 January 2017 Report prepared by Arcadis Canada Inc. for PWGSC*. See attached.

11. CLASSIFICATION OF PRIMARY UNDERTAKING - Indicate the primary classification of undertaking by checking one of the following boxes.

- | | |
|---|---|
| <input type="checkbox"/> Industrial | <input type="checkbox"/> Agricultural |
| <input type="checkbox"/> Mining and Milling (includes exploration/drilling/exploration camps) | |
| <input type="checkbox"/> Conservation | |
| <input type="checkbox"/> Municipal (includes camps/lodges) | <input type="checkbox"/> Recreational |
| <input type="checkbox"/> Power | <input checked="" type="checkbox"/> Miscellaneous (describe below): |

Remediation project that includes the decommissioning of an on-site landfill. Only debris currently at the site will be placed in the landfill over the duration of the remediation project. Once the project is completed, the landfill will be decommissioned and no additional waste will be added to it.

See Schedule II of *Northwest Territories Waters Regulations* for Description of Undertakings.

Information in accordance with applicable Supplemental Information Guidelines (SIG) must be submitted with a New Water Licence Application. Indicate which SIG(s) are applicable to your application. None are applicable to this project.

- ☐ Hydrostatic Testing
- ☐ Tannery
- ☐ Tourist / Remote Camp
- ☐ Landfarm & On-Site Storage of Hydrocarbon Contaminated Soil
- ☐ Onshore Oil and Gas Exploration Drilling
- ☐ Mineral Exploration / Remote Camp
- ☐ Advanced Exploration
- ☐ Mine Development
- ☐ Municipal
- ☐ General Water Works
- ☐ Power

12. WATER USE - Check the appropriate box(s) to indicate the type(s) of water use(s) being applied for.

- | | |
|---|--|
| <input type="checkbox"/> To obtain water for camp/ municipal purposes | <input type="checkbox"/> To divert a watercourse |
| <input type="checkbox"/> To obtain water for industrial purposes | <input checked="" type="checkbox"/> To modify the bed or bank of a watercourse |
| <input type="checkbox"/> To cross a watercourse | <input type="checkbox"/> Flood control |
| <input type="checkbox"/> To alter the flow of, or store water | |

X Other:

Possible temporary diversion of a drainage feature to remove impacted sediments/soil/debris. Improvement of the same drainage feature following the remediation with a potential rip-rap structure (as required) to act as a passive treatment system for the enhanced recovery of surface water and sediments downstream of the drainage feature.

Swale design to divert precipitation and melt water away from the decommissioned landfill slopes to prevent both erosion and water infiltration.

Collection of surface water samples from ponds and drainage features to monitor the natural recovery following the remediation program.

13. QUANTITY AND QUALITY OF WATER INVOLVED - For each type of water use indicated in Block 12, provide the source of water, the quality of the water source and available capacity, the estimated quantity to be used in cubic meters per day, method of extraction, as well as the quantities and qualities of water to be returned to source.

Name of water source(s) (show location(s) on map):

Unnamed drainage feature. Labeled for impacted sediment removal on attached Figures 1 and 2.

Ponds 1 to 6. To be sampled as part of environmental monitoring of natural recovery post remediation. Labeled on attached figure.

Describe the quality of the water source(s) and the available capacity: The water source in drainage feature is currently contaminated. The remediation program will improve its quality and its capacity to support downstream ecological habitats. The water sources in the on-site ponds that will be subject to environmental monitoring support ecological habitats. These sources are not used for drinking water.

Provide the overall estimated quantity of water to be used: less than 50 m³/day. For the diversion component and the landfill design, no water will be extracted. For the sampling component, the total extracted will be approximately 0.1 m³.

Provide the estimated quantity(s) of water to be used from each source: less than 50 m³/day. The water extracted during sampling will come from the on-site ponds. Each sampling event will extract approximately 0.021 m³.

Indicate the estimated quantities to be used for each purpose (camp, drilling, etc.): less than 50 m³/day. For the diversion component and the landfill design, no water will be extracted. For the sampling component, the total extracted will be approximately 0.1 m³.

Describe the method of extraction(s):

There will be no extraction from the drainage feature, only temporary diversion. There will be no extraction from the landfill, only swale design to divert precipitation and melt water away

Environmental sampling will be conducted manually by dipping sample containers directly into water bodies. No equipment will be utilized.

Estimated quantity(s) of water returned to source(s): From the diversion and landfill, all water will be returned to source. From the sampling, the water taken will not be returned to source.

Describe the quality of water(s) returned to source(s): The water returned to source will be of the same quality as the water diverted or better as an outcome of remediation.

- 14. WASTE** – Check the appropriate box(s) to indicate the types of waste(s) generated and deposited.

- | | |
|--|------------------------------------|
| <input type="checkbox"/> Sewage | <input type="checkbox"/> Waste oil |
| <input type="checkbox"/> Solid Waste | <input type="checkbox"/> Greywater |
| X Hazardous | <input type="checkbox"/> Sludges |
| X Bulky Items/Scrap Metal | X Contaminated soil and/or water |
| <input type="checkbox"/> Animal Waste | |
| X Other (describe): Contaminated sediments | |

- 15. QUANTITY AND QUALITY OF WASTE INVOLVED** – For each type of waste indicated in Block 14, describe its composition, quantity in cubic meters/day, method of treatment and method of disposal.

Type of Waste	Composition	Quantity Generated	Treatment Method	Disposal Method
Hazardous	Lead amended paint; batteries	1040 m ³	Sorting	off-site disposal at licensed facility

Bulk Items/Scrap Metal	Drums, sheet metal, piping (steel), steel cable, vehicle parts (axles, bracing, chassis), steel 'I' beams, wheel rims (steel), wood debris, etc.	3629 m ³	Sorting	Recycling (estimated 2084 m ³) and consolidation into on-site landfill (estimated 1545 m ³)
Contaminated Sediments	Contaminated by Metals (arsenic, cadmium, chromium, copper, lead, zinc); DDT, DDD, DDE; 9 PAHs and PCBs	200 m ³	Excavation and drying	Iqaluit Land Treatment Unit or removal to the south
Contaminated Soils	Metals (cadmium, copper, zinc); PHCs (F2, F3, F4), PAHs	500 m ³	Excavation	Iqaluit Land Treatment Unit or removal to the south

16. OTHER AUTHORIZATIONS – In addition to the sub-surface and surface land use authorizations provided in Block 6, indicate any other authorizations required in relation to the proposed undertaking. For each provide the following:

Authorization: _____ DFO?? _____

Administering Agency: _____

Project Activity: _____

Date (expected date) of issuance: _____ Date of expiry: _____

17. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES - Describe direct, indirect, and cumulative impacts related to water and waste.

See attached Summary of Potential Environmental and Resource Impacts with associated mitigation measures and the project Spill Contingency Plan.

18. WATER RIGHTS OF EXISTING AND OTHER USERS OF WATER

Provide the names, addresses and nature of use for any known persons or properties that may be adversely affected by the proposed undertaking, including those that hold licences for water use in precedent to the application, domestic users, in-stream users, authorized waste depositors, owners of

	<p>property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders, and holders of other rights of a similar nature.</p> <p>Advise the Board if compensation has been paid and/or agreement(s) for compensation have been reached with any existing or other users.</p> <p><u>No other users in the area to be affected by the remediation project.</u></p>
19.	<p>INUIT WATER RIGHTS</p> <p>Advise the Board of any substantial affect of the quality, quantity or flow of waters flowing through Inuit Owned Land (IOL), and advise the Board if negotiations have commenced or an agreement to pay compensation for any loss or damage has been reached with one or more Designated Inuit Organization (DIO).</p> <p><u>No other users in the area or to be affected by the remediation project.</u></p>
20.	<p>CONSULTATION – Provide a summary of any consultation meetings including when the meetings were held, where and with whom. Include a list of concerns expressed and measures to address concerns.</p> <p>In November 2016, Transport Canada sent letters to potentially interested parties, including City of Iqaluit, Qikiqtani Inuit Association, Government of Nunavut (Department of Economic Development and Transportation and Department of Environment), and Nunavut Tunngavik Incorporated. The intent of the letters was to provide notification of the upcoming project and to request any comments. The City of Iqaluit responded to the letter and indicated that “The City has no concerns with this at this time and welcomes this work.” The Government of Nunavut, Department of Economic Development and Transportation also responded and indicated support of the project.</p> <p>See attached letters to potentially interested parties and associated responses.</p>
21.	<p>SECURITY INFORMATION</p> <p>Provide an estimate of the total financial security for final reclamation equal to the total outstanding reclamation liability for land and water combined sufficient to cover the highest liability over the life of the undertaking. <u>Estimates of reclamation costs must be based on the cost of having the necessary reclamation work done by a third party contractor if the operator defaults.</u> The estimate must also include contingency factors appropriate to the particular work to be undertaken.</p> <p>Where applicable, the financial security assessment should be prepared in a manner consistent with the principals respecting mine site reclamation and implementation found in the <i>Mine Site Reclamation Policy for Nunavut</i>, Indian and Northern Affairs Canada, 2002.</p> <p><u>Not applicable</u></p>
22.	<p>FINANCIAL INFORMATION</p> <p>Provide a statement of financial responsibility.</p> <p>If the applicant is a business entity, provide a list of the officers of the company.</p> <p>If the applicant is a business entity attach a copy of the Certificate of Incorporation or evidence of registration of the company name.</p> <p>Not applicable</p>

23. STUDIES UNDERTAKEN TO DATE - List and attach copies of studies, reports, research, etc.

- Arcadis Canada Inc., 2016. Remedial Action Plan, Former Metal Dump and Community Landfill, Iqaluit, Nunavut. 27 January 2017. – See attached

24. PROPOSED TIME SCHEDULE – Indicate the proposed start and completion dates for each applicable phase of development (construction, operation, closure, and post closure).

Construction

Proposed Start Date: May/2017 Proposed Completion Date: Sept/2017
(month/year) (month/year)

Operation

Proposed Start Date: May/2017 Proposed Completion Date: Sept/2017
(month/year) (month/year)

Closure

Proposed Start Date: May/2017 Proposed Completion Date: Sept/2017
(month/year) (month/year)

Post - Closure

Proposed Start Date: Sept/2017 Proposed Completion Date: Dec/2020
(month/year) (month/year)

For each applicable phase of development indicate which season(s) activities occur.

Construction

☐ Winter x Spring x Summer x Fall ☐ All season

Operation

☐ Winter x Spring x Summer x Fall ☐ All season

Closure

☐ Winter x Spring x Summer x Fall ☐ All season

Post - Closure

☐ Winter x Spring x Summer x Fall ☐ All season

25. PROPOSED TERM OF LICENCE

Number of years (maximum of 25 years): 3.5 years

Requested Date of Issuance: May/2017 Requested Expiry Date: Dec/2020
(month/year) (month/year)

(The requested date of issuance must be at least three (3) months from the date of application for a type B water licence and at least one (1) year from the date of application for a type A water licence, to allow for processing of the water licence application. These timeframes are approximate and do not account for the time to complete any pre-licensing land use planning or development impact requirements, time for the applicant to prepare and submit a water licence application in accordance with any project specific guidelines issued by the NWB, or the time for the applicant to respond to requests for additional information. See the NWB's *Guide 5: Processing Water Licence Applications* for more information)

26. ANNUAL REPORTING – If not using the NWB's *Standardized Form for Annual Reporting*, provide details regarding the content of annual reports and a proposed outline or template of the annual report.

The Standardized Form for Annual Reporting will be used.

- 27. CHECKLIST** – The following must be included with the application for the water licensing process to begin.

Written confirmation from the NPC confirming that NPC's requirements regarding land use plan conformity have been addressed.

☒ Yes ☐ No If no, date expected _____

Written confirmation from the NIRB confirming that NIRB's requirements regarding development impact assessment have been addressed.

☐ Yes ☒ No If no, date expected _____ TBD _____


Completed General Water Licence Application form.

☒ Yes ☐ No If no, date expected _____

Information addressing Supplemental Information Guideline (SIG) , where applicable (see Block 11)

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If no, date expected _____
English Summary of Application.		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If no, date expected _____
Inuktitut and/or Inuinnaqtun Summary of Application.		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If no, date expected _____
Application Fee of \$30.00 CDN (Payee Receiver General for Canada).		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If no, date expected _____ Not applicable
Water Use Fee Deposit of \$30.00 CDN (Payee Receiver General for Canada). The actual water use fee will be calculated by the NWB based upon the amount of water authorized for use in accordance with the Regulations at the time of issuance of the licence.		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If no, date expected _____ Not applicable

28. SIGNATURE

Jackie Barker	Environmental Officer, Transport Canada		March 3, 2017
Name (Print)	Title (Print)	Signature	Date