



Transport  
Canada

Transports  
Canada

Prairie and Northern Region  
344 Edmonton Street  
Winnipeg, Manitoba  
R3C 0P6

NIRB File No.: 17UN025

March 20, 2018

Nunavut Impact Review Board  
P.O. Box 1360  
Cambridge Bay, NU  
X0B 0C0

**RE: 2017 Annual Report for NIRB File No. 17UN025 –Iqaluit Metal Dump**

Please find attached the 2017 NIRB Annual Report as recommended in the Screening Decision Report for NIRB File No. 17UN025.

Transport Canada has submitted an Annual Report and supporting documents to the Nunavut Water Board as required for Licence No. 1BR-MDR1721.

Please contact me by phone at 204-979-1739 or by email at [jackie.barker@tc.gc.ca](mailto:jackie.barker@tc.gc.ca) should have any questions or require additional information.

Sincerely,

Jackie Barker  
Environmental Officer  
Transport Canada

Encl (1)

Michael Brownlee  
Sr. Environmental Specialist  
PSPC Environmental Services, Western Region  
10025 Jasper Avenue  
Edmonton, Alberta, T5J 1S6  
Canada

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1050 Morrison Drive  
Ottawa  
Ontario K1Z 5B8  
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www.arcadis.com

Subject:

**Former Iqaluit Metal Dump and Community Landfill –  
Nunavut Impact Review Board (NIRB) 2017 Annual –  
NIRB File No.: 17UN025**

Date:  
2018.03.09

Dear Mr. Brownlee:

Contact:  
Ryan Fletcher

Arcadis Canada Inc. (Arcadis) was retained by Public Services and Procurement Canada (PSPC) on behalf of Transport Canada (TC) to assemble the information required for the Nunavut Impact Review Board (NIRB) annual reporting requirements with regards to the remediation program that took place between July 23, 2017 and October 13, 2017 at the TC Iqaluit Former Metal Dump and Community Landfill in Nunavut (NU). This letter report comprises the necessary information as detailed in communications to Arcadis from PSPC and TC.

Phone:  
613-703-3122

Email:  
ryan.fletcher@arcadis.com

Our ref:  
102153-002

## REMEDIAL SUMMARY

The remediation program at the former Iqaluit Metal Dump and Community Landfill operated over the period of one summer/fall field season starting on July 25, 2017 and ending on October 13, 2017 with all site activities, including mobilization and de-mobilization, taking place within that timeframe.

The remediation included the following:

- Proper collection, packaging, transport and off-site disposal of any hazardous waste encountered (i.e., lead amended painted material, asbestos, liquid wastes, hazardous soils, tires, and batteries);
- Construction and closure of an engineered landfill to contain historical, non-hazardous waste debris present on site;
- Consolidation of non-hazardous materials from outlying areas into the main landfill during construction;

- Excavation and consolidation of metal impacted soils from outlying areas and incorporation into the main landfill during construction; and
- Excavation and off-site disposal of impacted sediments from a small drainage channel.

All stated objectives of the remediation program at the former Iqaluit Metal Dump and Community Landfill were successfully completed. Figure 1 (following this text) outlines the location of the project and Figure 2 Shows the area that was remediated. Photographs of the remediation activities, as well as before and after photographs of the site are provided as Attachment A (following the text).

## CONTRACTING

Kudlik Construction Inc. (Kudlik) was awarded the contract to complete this remediation work. Kudlik is an Iqaluit-based contracting company with ties to the local community. Kudlik maintains a local labour force, who were assigned to various roles on the project. All hiring and contractual decisions were made through Kudlik Construction Inc.

## POST CLOSURE MONITORING

After remediation work at the former Metal Dump and Community Landfill was completed, the only permanent changes to the site are the capped landfill and associated drainage swales. All surface debris has been either removed and/or incorporated into the engineered landfill. There are no building, structures or active areas present on site.

A Long-Term Monitoring Plan (LTM) is to be implemented in accordance to the NWB water licence 1BR-MDR1721 and corresponding documentation titled *Performance and Long-Term Monitoring Program* (Arcadis 2017) to monitor the long-term performance of site remediation efforts. Monitoring will include visual, water quality, sediment and natural environmental monitoring. Seepage and soil sampling will be completed as required, based on field observations and landfill performance indicators.

The following post-closure monitoring activities are to be conducted at the site:

- Visual Monitoring
- Seepage Monitoring
- Potential soil sampling (if seepage is observed)
- Surface Water Monitoring
- Sediment Sampling
- Natural Environmental Monitoring

The following protocol for monitoring frequency will be implemented at the site (expressed in years after landfill completion):

- Phase I: Years 1, 3 and 5
- Contingency - Phase II: Years 7, 10, 15 and 25
- Contingency - Phase III: beyond 25

The monitoring program is to be stopped at the end of Phase I (5 years post-remediation, i.e., 2022) if the evaluation of the program confirms that there are no stability issues and that the landfill waste has been

successfully confined. Otherwise, monitoring will continue into Phase II (i.e., up to 25 years post remediation). An evaluation will be conducted at the end of each monitoring event in phase II to determine if further monitoring is required and what level of effort is appropriate for phase III monitoring (if necessary). The full LTM plan is presented and available for review in the Nunavut Water Board Licence 1BR-MDR1721.

## COMMUNITY CONSULTATIONS

No community consultations were undertaken as part of this project beyond the initial public engagement and comment requests performed by the NIRB.

## WILDLIFE AND ENVIRONMENT

No issues related to wildlife or the environment were encountered during the project work. No cease-work orders were required. Wildlife mitigation was not required for this project.

## HERITAGE SITES

No heritage sites or items or archeological significance were encountered during the remediation activities; therefore, no mitigation measures were required.

## INUIT LAND USE

Fishing and berry picking are the two main uses of the property located to the west of the project site. During remedial activities, land users were directed to an alternative river access route to the north or the south of the project site.

## COMPLIANCE

TC has complied with the conditions outlined within the Nunavut Impact Review Board Screening Decision, File No.: 17UN025 (NPC File No.: 148456), Dated May 16, 2017. Project activities were conducted with reference to the Views of the Board in said document and followed the Recommended Project-Specific Terms and Conditions No. 1 through 24, as outlined in the same.

### Ecosystem, Wildlife Habitat and Inuit Harvesting Activities

**Issue 1: Potential adverse impacts to terrestrial wildlife and migratory and non-migratory birds from site preparation, excavation, grading, road traffic, and increased noise associated with the remediation project.**

The project followed the *Migratory Birds Convention Act*, *Migratory Birds Regulations*, *Species at Risk Act*, and the *Wildlife Act (Nunavut)* during all on site remedial activities. No harm or disturbance to wildlife was observed during site activities. None of the species at risk as identified in the permit were observed on-site during the remedial activities.



1. TC ensured that there was no damage to wildlife habitat in conducting remedial activities.
2. TC ensured that no wildlife was harassed during the site activities.
3. TC ensured that no hunting or fishing took place by any of the on-site workers over the project duration.
4. TC ensured that all project personnel were made aware of the measures to protect wildlife and were provided with training and/or advice on how to implement these measures.
5. TC ensured that no nests or eggs of any birds were disturbed or destroyed. No active nests were observed on the project site during work activities.
6. Any garbage and/or waste generated as part of this project was placed in covered metal containers and made inaccessible to wildlife at all times.

**Issue 2: Potential adverse impacts to fish and fish habitat, and freshwater and marine water quality, from potential spill events, site preparation, excavation, and landfilling associated with the project.**

TC obtained a water license from the Nunavut Water Board (NWB), water licence No.: 1BR-MDR1721 and conducted remedial activities in compliance with the same at all times. In addition, the *Fisheries Act*, the *Transportation of Dangerous Goods Regulations*, *Transportation of Dangerous Goods Act* and the *Canadian Environmental Protection Act* were followed at all times. No use of any water, including constructing or disturbing any stream, lakebed or the banks of any definable water course was carried out unless approved by the Nunavut Water Board. In addition, TC also complied with the NIRB suggestions as follows:

1. TC ensured that no water, including construction in or disturbing any stream, lakebed or banks of any definable water course was undertaken unless approved by the NWB.
2. TC ensured that Kudlik utilized appropriate dust suppression measured during remedial activities when warranted.
3. TC ensured that appropriate and suitable erosion and sediment transportation suppression measures were installed in all areas before, during and after remedial activities to prevent sediment from entering any waterbodies.

**Issue 3: Potential adverse impacts to ground stability, soil quality, terrain, and permafrost from site preparation, excavation, grading, landfill activities and transport activities associated with the project.**

TC followed the *Transportation of Dangerous Goods Regulations*, *Transportation of Dangerous Goods Act*, and the *Canadian Environmental Protection Act* at all times during remedial activities. No vehicles or machinery were moved unless the ground surface was deemed to be in a safe state capable of fully

supporting the equipment and vehicles without rutting or gouging. The following mitigative measures, recommended by the NIRB, were applied:

1. Only non-hazardous materials were disposed of in the on-site landfill; this included only materials that were listed as acceptable for disposal. Hazardous materials, materials listed as unacceptable for disposal at the landfill, and materials that contain asbestos, fluorescent tubes, ozone depleting substances, items containing lead amended paint, and liquids were not disposed of in the landfill and were shipped south to certified disposal facilities.
2. TC ensured that all personnel were adequately trained prior to commencement of landfilling activities. Personnel were made aware of all operational guidelines and commitments relating to the project work.
3. TC ensured that no unnecessary damage to wildlife habitats occurred during the remedial activities.
4. No vehicles or machinery was moved unless the ground surface was deemed to be in a safe state capable of fully supporting the equipment and vehicles without rutting or gouging.
5. TC ensured that all garbage, fuel and equipment was removed from the site upon completion of the remedial activities.

**Issue 4: Potential adverse impacts to air quality from project activities, including dust and emissions generated by the use of heavy equipment for site preparation, excavation, grading, and on-land transport of waste.**

TC ensured that Kudlik implemented appropriate dust suppression measures during all remedial activities. Engine idling was also minimized as much as possible. The following mitigative measures, recommended by the NIRB, were applied:

1. On-site personnel were adequately trained in the landfill and remedial operations prior to the commencement of the work. All personnel were made aware of all operational guidelines and commitments relating to the project.
2. Kudlik utilized equipment and vehicles outfitted with standard and well-maintained noise suppression devices at all times during the remedial activities.

**Issue 5: Potential adverse impacts to traditional land use activities in the area from noise and movement disruptions associated with the remedial activities and transportation operations.**

Impacts related to the traditional land use (i.e., fishing and gathering) in the area were mitigated as best as possible during the remedial activities. Alternative river access was available to the north and south of the

project site and users were directed accordingly by on-site staff during the remedial activities. No major disturbances to the traditional land use was observed during site activities.

**Issue 6: Potential adverse impacts to historical, cultural and archaeological sites from land disturbance activities associated with the project.**

TC ensured that the Nunavut Act was followed at all times during remedial activities at the site. No concerns or comments were received with respect to Inuit Qaujimaningit or traditional and community knowledge in relation to the proposed project. No evidence of cultural or archeological significant sites or items were identified during the on-site activities.

**Issue 7: Potential benefits to the local community from the improvement of site conditions adjacent to the Sylvia Grinnell Territorial Park and from the purchasing of local goods and services to support the project.**

Kudlik was the prime contractor for the project and was responsible for all local hires, supplies, and material sourcing. The on-site staff maintained excellent communications and hospitality to all site visitors during the remedial activities. The improved condition of the site is considered a benefit to the local community and area users.

**Significant Public Concern**

**Issue 8: No significant public concern was expressed during the public commenting period for this file.**

No public concerns were raised during the remedial activities. Overall, the project was very well received within the community.

We appreciate the opportunity to be of service, and trust this report suits your needs at the current time.

Sincerely,

Arcadis Canada Inc.

Mr. Ryan Fletcher, C.Tech, EP  
Sr. Environmental Technician

Enclosures:

**Figures**

- 1 Site Location
- 2 Extent of Remedial Activities

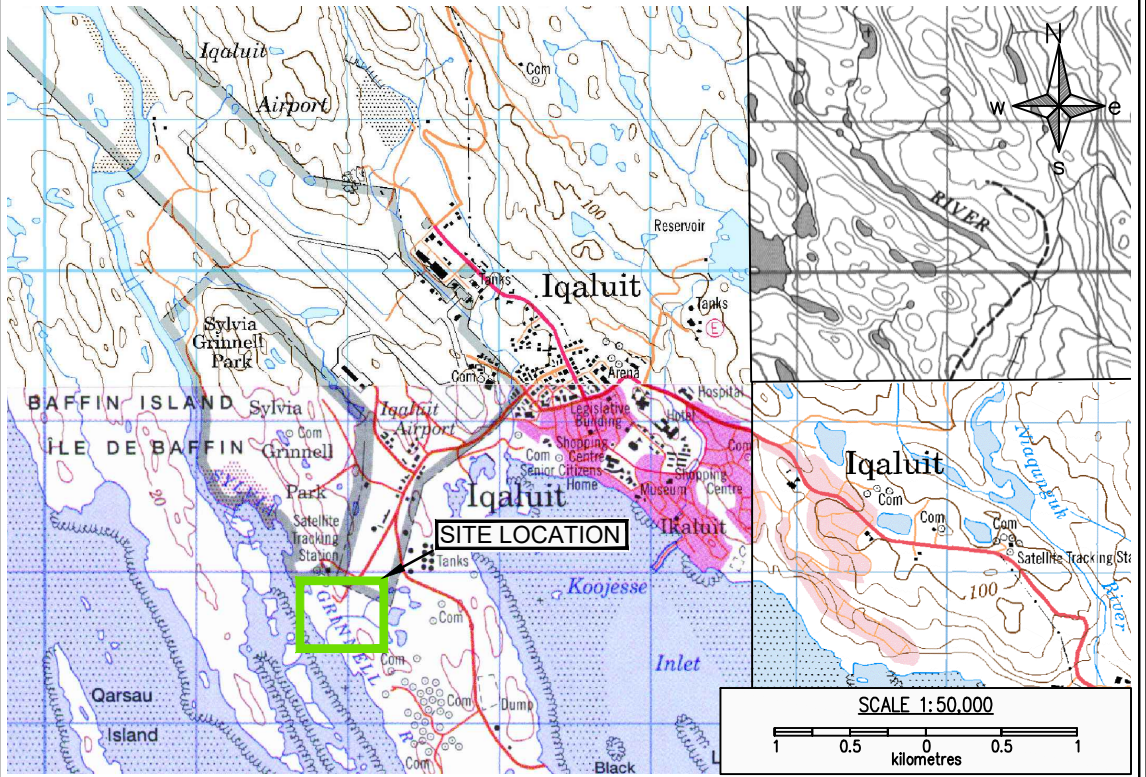
**Attachments**

- A Project Photographs

# FIGURES







References:

(above) Google Earth satellite image, 2008.

(right)  
Natural Resources Canada NTS Sheet: 25-N/9 Burton Bay, Nunavut, Edition 3, NAD 83, Series A 713, 2001.  
Natural Resources Canada NTS Sheet: 25-N/10 Hill Island, Nunavut, Edition 2, NAD 83, Series A 713, 2001.  
Natural Resources Canada NTS Sheet: 25-N/15 Iqaluit, Nunavut, Edition 2, NAD 83, Series A 713, 2001.  
Natural Resources Canada NTS Sheet: 25-N/16 [No Title] Nunavut, Edition 2, NAD 83, Series A 701, 2001.  
(Note: ground elevations shown in metres above mean sea level).

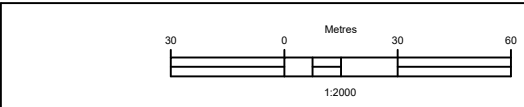
Title: SITE LOCATION	
	Project: NUNAVUT IMPACT REVIEW BOARD UPDATE REPORT FORMER IQALUIT METAL DUMP AND COMMUNITY LANDFILL
	Client: PSPC - TRANSPORT CANADA
Date: MARCH 2018	
SCALES AS SHOWN	
FIGURE 1	





**LEGEND:**

- POOLING WATER
- PROPERTY BOUNDARY
- PARK BOUNDARY
- STREAM/DRAINAGE
- EXTENT OF EXPOSED METAL DEBRIS AND MAIN LANDFILL (YELLOW)
- EXTENT OF PARTIALLY BURIED METAL DEBRIS
- EXTENT OF COMPLETED LANDFILL & CAPPING



Title: <b>EXTENT OF REMEDIAL ACTIVITIES</b>	
Project: <b>NUNAVUT IMPACT REVIEW BOARD UPDATE REPORT FORMER IQALUIT METAL DUMP AND COMMUNITY LANDFILL</b>	
Client: <b>PSPC - TRANSPORT CANADA</b>	
	Date: <b>MARCH 2018</b>
	<b>FIGURE 2</b>

# ATTACHMENT A

Project Photographs







**Photo: 1**  
31 July 2017

**Description:**  
**(Before)**

Overview of  
southeast of Main  
Landfill prior to  
remediation  
operations

**Location:**  
AEC 3 –  
Photo Stn 1  
looking  
northwest



**Photo: 2**  
23 September 2017

**Description:**  
**(After)**

Overview of  
southeast of Main  
Landfill, final filling  
and grading  
operations

**Location:**  
AEC 3 –  
Photo Stn 1  
looking  
northwest





**Photo: 1**  
31 July 2017

**Description:**  
**(Before)**

Overview of  
southwest of Main  
Landfill prior to  
remediation  
operations

**Location:**  
AEC 3 –  
Photo Stn 4  
looking  
northeast



**Photo: 2**  
26 September 2017

**Description:**  
**(After)**

Overview of  
southwest of Main  
Landfill

**Location:**  
AEC 3 –  
Photo Stn 4  
looking  
northeast





**Photo: 1**  
31 July 2017

**Description:**  
**(Before)**

Overview of west of  
Main Landfill  
prior to  
remediation  
operations

**Location:**  
AEC 3 –  
Photo Stn 5  
looking  
northeast



**Photo: 2**  
23 September 2017

**Description:**  
**(After)**

Overview of west of  
Main Landfill

**Location:**  
AEC 3 –  
Photo Stn 5  
looking  
northeast





**Photo: 1**  
31 July 2017

**Description:**

**(Before)**

Overview of west  
of Main Landfill  
prior to  
remediation  
operations

**Location:**

AEC 3 –  
Photo Stn 6  
looking east



**Photo: 2**  
23 September 2017

**Description:**

**(After)**

Overview of west of  
Main Landfill

**Location:**

AEC 3 –  
Photo Stn 6  
looking east





**Photo: 1**  
October 2016

**Description:**  
**(Before)**  
Overview AEC 2  
vehicle dump

**Location:**  
AEC 2



**Photo: 2**  
28 September 2017

**Description:**  
**(After)**  
Overview of AEC 2  
cap

**Location:**  
AEC 2





**Photo: 1**  
October 2016

**Description:**  
**(Before)**  
Overview AEC 2  
vehicle dump

**Location:**  
AEC 2



**Photo: 2**  
28 September 2017

**Description:**  
**(After)**  
Overview of AEC 2  
drainage

**Location:**  
AEC 2



**Photo: 1**  
October 2016

**Description:**  
**(Before)**

Overview AEC 1

**Location:**  
AEC 1



**Photo: 2**  
28 September 2017

**Description:**  
**(After)**

Overview of AEC 1  
after capping

**Location:**  
AEC 1





**Photo: 1**  
October 2016

**Description:**  
**(Before)**

Overview AEC 3,  
north end

**Location:**  
AEC 3



**Photo: 2**  
28 September 2017

**Description:**  
**(After)**

Overview of AEC 3  
north end after  
capping

**Location:**  
AEC 3



## Project Photographs

2017 Site Remediation Summary Report – Former Iqaluit Metal Dump and Community Landfill, Iqaluit NU



**Photo: 1**

July 30, 2017

**Description:**

**(Before)** Overview of SE of Main Landfill Prior to Remediation Operations

**Location:**

AEC 3 - Photo Stn 1 looking northwest



**Photo: 2**

July 30, 2017

**Description:**

**(Before)** Overview of SW of Main Landfill

**Location:**

AEC 3 – Photo Stn 4 looking north



**Photo: 3**

July 30, 2017

**Description:**

**(Before)** Overview of SW of Main Landfill

**Location:**

AEC 3 – Photo Stn 5 looking northeast



## Project Photographs

2017 Site Remediation Summary Report – Former Iqaluit Metal Dump and Community Landfill, Iqaluit NU



**Photo: 4**

July 30, 2017

**Description:**

**(Before)** Overview of West of Main Landfill

**Location:**

AEC 3 – Photo Stn 6 looking east



**Photo: 5**

Aug 14, 2017

**Description:**

**(During 1)** Overview of SE of Main Landfill

**Location:**

AEC 3 - Photo Stn 1 looking northwest



**Photo: 6**

Aug 14, 2017

**Description:**

**(During 1)** Overview of SW of Main Landfill

**Location:**

AEC 3 – Photo Stn 4 looking north



## Project Photographs

2017 Site Remediation Summary Report – Former Iqaluit Metal Dump and Community Landfill, Iqaluit NU



**Photo: 7**

Aug 14, 2017

**Description:**

**(During 1)** Overview of West of Main Landfill

**Location:**

AEC 3 – Photo Stn 5 looking east



**Photo: 8**

Aug 14, 2017

**Description:**

**(During 1)** Overview of West of Main Landfill

**Location:**

AEC 3 – Photo Stn 6 looking east



**Photo: 9**

Sep 02, 2017

**Description:**

**(During 2)** Overview of SE of Main Landfill

**Location:**

AEC 3 - Photo Stn 1 looking northwest



## Project Photographs

2017 Site Remediation Summary Report – Former Iqaluit Metal Dump and Community Landfill, Iqaluit NU



**Photo: 10**

Sep 02, 2017

**Description:**  
(During 2) Overview of SW of Main Landfill

**Location:**  
AEC 3 – Photo Stn 4 looking north

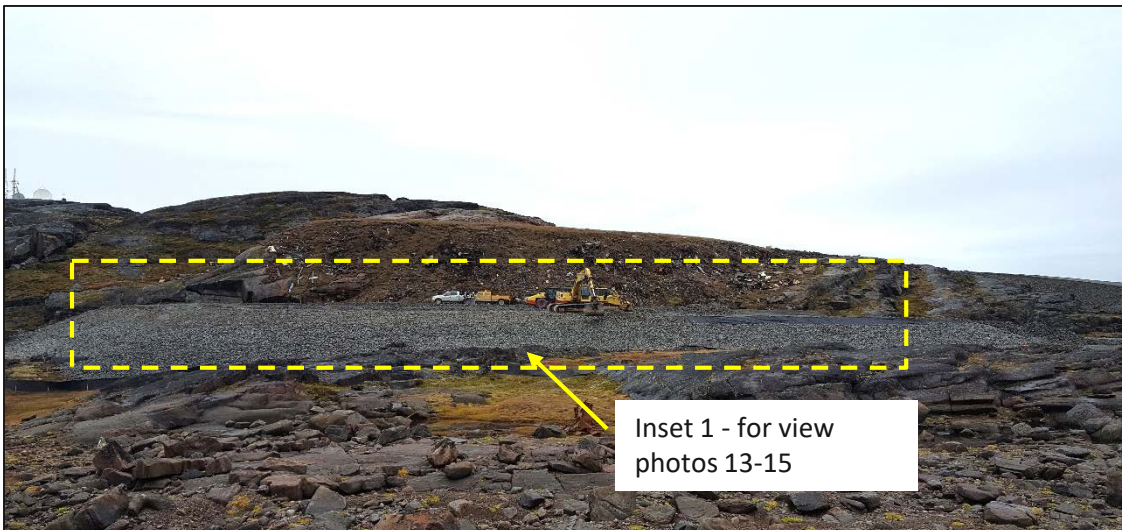


**Photo: 11**

Sep 02, 2017

**Description:**  
(During 2) Overview of SW of Main Landfill

**Location:**  
AEC 3 – Photo Stn 5 looking northeast



**Photo: 12**

Sep 02, 2017

**Description:**  
(During 2) Overview of West of Main Landfill

**Location:**  
AEC 3 – Photo Stn 6 looking east

Inset 1 - for view  
photos 13-15



## Project Photographs

2017 Site Remediation Summary Report – Former Iqaluit Metal Dump and Community Landfill, Iqaluit NU



**Photo: 13**

Sep 05, 2017

**Description:**

**(Inset 1)** Overview of West of Main Landfill from above

**Location:**

AEC 3 – Looking southeast



**Photo: 14**

Sep 05, 2017

**Description:**

**(Inset 1)** Overview of West of Main Landfill from above

**Location:**

AEC 3 – Looking southwest



**Photo: 15**

Sep 05, 2017

**Description:**

**(Inset 1)** Overview of West of Main Landfill

**Location:**

AEC 3 – Looking west



## Project Photographs

2017 Site Remediation Summary Report – Former Iqaluit Metal Dump and  
Community Landfill, Iqaluit NU



**Photo: 16**

Aug 12, 2017

**Description:**

(Before) Drum Sorting

**Location:**

AEC 3 – From above  
looking southwest



**Photo: 17**

Aug 14, 2017

**Description:**

(During) Drum Liquid  
removal staging area

**Location:**

TWA-1, view looking  
southwest



**Photo: 18**

04 October, 2017

**Description:**

(After) Drum Staging  
Area after liquid  
removal

**Location:**

TWA-1, view looking  
northeast



## Project Photographs

2017 Site Remediation Summary Report – Former Iqaluit Metal Dump and Community Landfill, Iqaluit NU



**Photo: 19**

Sep 31, 2017

**Description:**

**(After)** Overview of SW of Main Landfill

**Location:**

AEC 3 – Photo Stn 1  
Looking north



**Photo: 20**

Sep 31, 2017

**Description:**

**(After)** Overview of SW of Main Landfill

**Location:**

AEC 3 – Photo Stn 4  
looking northeast



**Photo: 21**

Sep 31, 2017

**Description:**

**(After)** Overview of SW of Main Landfill

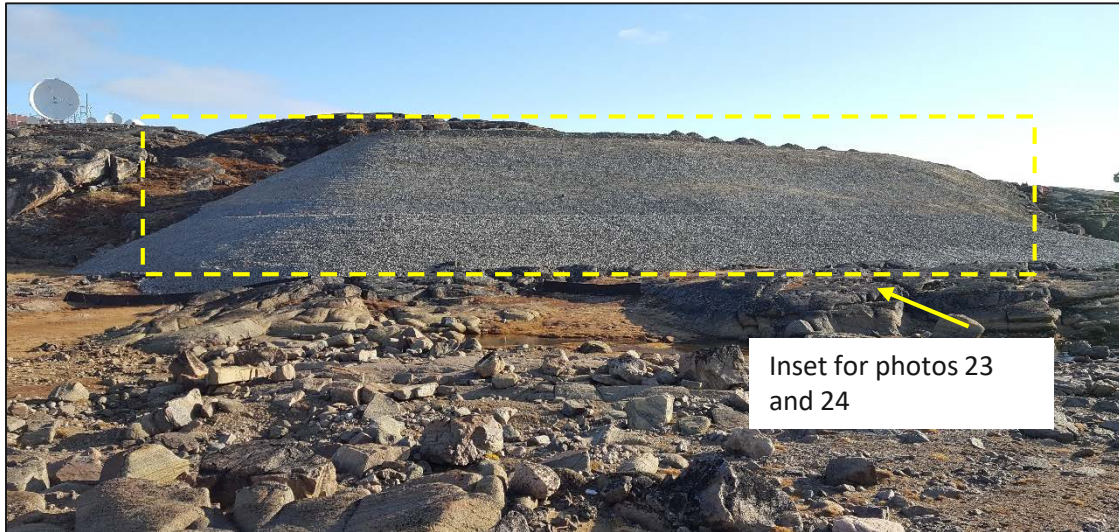
**Location:**

AEC 3 – Photo Stn 5  
looking northeast



## Project Photographs

2017 Site Remediation Summary Report – Former Iqaluit Metal Dump and Community Landfill, Iqaluit NU



**Photo: 22**

Sep 31, 2017

**Description:**  
(After) Overview of West of Main Landfill

**Location:**  
AEC 3 – Photo Stn 6 looking east



**Photo: 23**

08 October, 2017

**Description:**  
(After) Overview of west side of landfill

**Location:**  
AEC 3 – From above looking southeast



**Photo: 24**

08 October, 2017

**Description:**  
(After) Overview of West of Main Landfill

**Location:**  
AEC 3 – From above looking west



## Project Photographs

2017 Site Remediation Summary Report – Former Iqaluit Metal Dump and Community Landfill, Iqaluit NU



**Photo: 25**

25 July, 2017

**Description:**  
**(Before)** AEC-1  
Overview, prior to remedial operations

**Location:**  
AEC 1 – Looking northeast



**Photo: 26**

Aug 13, 2017

**Description:**  
**(During 1)** AEC-1

**Location:**  
AEC 1– Looking northeast



**Photo: 27**

29 Sept, 2017

**Description:**  
**(After)** Overview of AEC-1 after final cap and grade

**Location:**  
AEC 1 – Looking east



## Project Photographs

2017 Site Remediation Summary Report – Former Iqaluit Metal Dump and Community Landfill, Iqaluit NU



**Photo: 28**

04 Oct, 2017

**Description:**

Pallets of various hazardous materials packaged for disposal...

TWA-1 – looking south



**Photo: 29**

08 Oct, 2017

**Description:**

Batteries packaged for disposal

**Location:**

TWA-1 looking east



**Photo: 30**

08 Aug, 2017

**Description:**

Former area of PHC Impacted Soil post remediation

**Location:**

TWA-1 looking west



## Project Photographs

2017 Site Remediation Summary Report – Former Iqaluit Metal Dump and Community Landfill, Iqaluit NU



**Photo: 31**

08 Oct, 2017

**Description:**

TWA-1, storage containers for hazardous metals

**Location:**

TWA-1 – looking south



**Photo: 32**

08 Oct, 2017

**Description:**

Sea can storage containers being filled with lead containing products and hazardous metal debris

**Location:**

TWA-1 looking east



**Photo: 33**

08 Aug, 2017

**Description:**

TWA-1 impacted sediment packaged and ready for shipment south

**Location:**

TWA-1 looking southeast