Report

Environmental Impact Assessment (Dillon Consulting & Outcome Consultants, 2026)

PUBLIC SERVICES AND PROCUREMENT CANADA

Environmental Impact Assessment: Isachsen High Arctic Weather Station (HAWS), Nunavut (PSPC Project No.: R.125553.001)

On behalf of Environment and Climate Change Canada

FINAL REPORT

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Environmental Impact Assessment, Isachsen High Arctic Weather Station (HAWS), Nunavut – Final Report

Dillon Consulting Limited (Dillon) on behalf of Nuqsana-Outcome Joint Venture (NOJV) is pleased to provide you with the Environmental Impact Assessment, Isachsen High Arctic Weather Station (HAWS), Nunavut – Final Report.

Should you have any further questions or comments, please contact the undersigned at your convenience.

Yours truly,

DILLON CONSULTING LIMITED
AND NUQSANA-OUTCOME JOINT VENTURE

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Our File: 19-1138

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Acronyms

°C	degree Celsius
AIA	Archaeological Impact Assessment
AOC	Aboriginal Opportunities Consideration
AMSRP	Abandoned Military Sites Remediation Protocol
APEC	Area of Potential Environmental Concern
AST	Above-ground Storage Tank
ATV	All-terrain vehicle
AWOS	Automated Weather Observation Station
BTEX	Benzene, toluene, ethylbenzene, and xylene
CCME	Canadian Council of Ministers of the Environment
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
cm	centimetre
COC	Contaminants of concern
CO	Carbon monoxide
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COVID-19	Coronavirus disease
DFO	Fisheries and Oceans Canada
DOJV	Dillon Consulting Limited and Outcome Consultants joint venture
ECCC	Environment and Climate Change Canada
EIA	Environmental Impact Assessment
ERP	Emergency Response Plan
ESA	Environmental Site Assessment
FCSAP	Federal Contaminated Sites Action Plan
GN	Government of Nunavut
ha	Hectare
HAWS	High Arctic Weather Station
HBMA	Hazardous Buildings and Materials Assessment
HHERA	Human Health and Ecological Risk Assessment
HRSDC	Human Resources and Skills Development Canada
HTO	Hunters and Trappers Organization
IBP	Inuit Benefits Plan
INAC	Indigenous and Northern Affairs Canada

kg	kilogram
km	kilometre
L	litre
LiDAR	Light Detection and Ranging
LTM	Long-term Monitoring and Maintenance
m	metre
m^2	square metre
m^3	cubic metre
masl	metres above sea level
mbgs	metres below grounds surface
MBCA	*Migratory Birds Convention Act*
mm	millimetre
MPERG	Mining and Petroleum Environmental Research Group
NCSCS	National Classification System for Contaminated Sites
NH_3	Ammonia
NIRB	Nunavut Impact Review Board
NLCA	Nunavut Land Claims Agreement
NO_x	Nitrogen oxides
NUMIN	Nunavut Mineral Database
NWB	Nunavut Water Board
NWMB	Nunavut Wildlife Management Board
ODS	Ozone-Depleting Substances
PAH	Polycyclic aromatic hydrocarbons
PFAS	Per and polyfluoroalkyl substances
PHC	Petroleum hydrocarbon
PM_{10}	Particulate matter ≤10 µm diameter
PM_{25}	Particulate matter ≤25 µm diameter
PSPC	Public Services and Procurement Canada
QIA	Qikiqtani Inuit Association
RAP	Remedial Action Plan
SARA	*Species as Risk Act*
SOW	Statement of Work
SO_x	Sulphur oxides
Stantec	Stantec Consulting Ltd.

T	tonne
TPM	Total particulate matter
VEC	Valued Ecological Component
VOC	Volatile organic compound
VSC	Valued Socio-Economic Components
WDA	Waste Disposal Area
WHMIS	Workplace Hazardous Materials Information System

Executive Summary

Nuqsana and Outcome Consultants in joint venture (Nuqsana-Outcome or NOJV) were retained by Public Services and Procurement Canada (PSPC) to conduct an Environmental Impact Assessment (EIA) of the proposed activities for the Remediation Project at the former Isachsen High Arctic Weather Station (HAWS) on Ellef Ringnes Island, Nunavut (the Project). Previous work completed for the sites includes a Phase III Environmental Site Assessment (ESA), Human Health and Ecological Risk Assessment (HHERA), Hazardous Building Materials Assessment (HBMA), Archaeological Impact Assessment (AIA), Permitting Requirement and Application Roadmap, Lead Abatement Options Analysis, Fuel Reduction Plan, Borrow Pit Development Plan, Building Demolition and Solid Waste Management Plan, Permafrost Monitoring and Climate Change Vulnerability Assessment, Remedial Action Plan (RAP), and community engagement.

The Project meets the definition of a "project proposal" that is not considered exempt from screening, according to the *Nunavut Land Claims Agreement* (NLCA). Therefore, the NLCA requires that the Project must be screened by the Nunavut Impact Review Board (NIRB). This EIA has been prepared to identify the potential environmental effects of the proposed remedial activities for this Project, recommend measures and management practices to mitigate these effects, and characterize predicted residual effects on the environment that may remain following application of mitigation, including those that may contribute to cumulative effects in the region. The information provided in this EIA report aligns with the information that is required in a project proposal, as outlined in the *Proponent's Guide* (NIRB 2020).

The Project consists of remedial activities proposed at Isachsen HAWS, which is included in the Federal Contaminated Sites Inventory (Treasury Board of Canada Secretariat 2025), to which Environment Canada and Climate Change (ECC) is the custodian. The Project site, classified priority for action, and distance from the nearest community (Resolute, NU) are listed below in **Table ES-1**.

Table ES-1: Isachsen HAWS Site

Site Name	Priority for Action[1]	Approximate Distance from Resolute, NU
Isachsen High Arctic Weather Station	High	500 km

Notes:

[1] Treasury Board of Canada Secretariat (2025).

Past activities that have occurred at the Site have resulted in a number of Areas of Environmental Concern (AECs) and Areas of Potential Environmental Concern (APECs), as shown on **Figure 2** in **Appendix A**. Some of these AECs are within 100 m of the shore of Louise Bay. The Contaminated Sites Program (CSP) within ECCC is responsible for assessing and remediating or risk managing impacts at the Site to reduce or eliminate the risks posed to humans and the environment.

In the last 10 years, multiple Site Assessments have been carried out at the former Isachsen HAWS. Stantec Consulting Ltd. (Stantec) completed a Limited Phase II Environmental Site Assessment (ESA) in 2014. In 2019, Stantec completed a Supplemental Phase II ESA to identify the presence of impacts to the Site's soil, sediment and surface/melt water related to historical and current Site activities in areas of the Project site that were unassessed in 2013/2014 and within priority areas of potential concern. In 2022, Dillon-Outcome Joint Venture (DOJV) carried out a Phase III ESA at the Site to further assess, characterize and delineate AECs identified during the previous Stantec ESAs to support future detailed risk assessments and remediation planning. In 2023, sediment toxicity testing and surface water sampling in the Louise Bay near the gully outlets were conducted.

The Isachsen former HAWS is located on the west side of Ellef Ringnes Island, which is part of the Sverdrup Island Group located west of Ellesmere Island, Nunavut (**Figure 1** in **Appendix A**). The Site is situated approximately 300 m northwest of Louise Bay (an inlet within Station Bay) on federal crown land and is remote, uninhabited, and, to the best of our knowledge, not frequented by any northern community. An Automated Weather Observation Station (AWOS) is currently operating on the Site and is monitored remotely and maintained annually by ECCC staff.

The main part of the Site occupies a total area of approximately 4.5 km^2, excluding the runway and is occupied by 22 permanent structures with associated infrastructure, equipment, and supplies formerly used as a weather station (now abandoned). Most of the buildings are in poor structural condition. The Isachsen former HAWS is located on a terrace which overlooks Louise Bay. It is bounded to the east and west by gullies with creeks that discharge directly into Louise Bay. The Isachsen former HAWS operated from the late 1940s to the late 1970s. Since 1978 the weather data collection facilities at Isachsen have been automated (i.e., unmanned).

Other features at the Site include water and sewage infrastructure, fuel storage and distribution facilities, two on-Site Waste Disposal Areas (WDAs), fuel tanks, thousands of empty/partially empty barrels, and other abandoned equipment and debris.

The Project is comprised of the following activities at Isachsen HAWS:

- Waste fuel drums would be cleaned, crushed, consolidated in a new engineered on-site landfill. Approximately 3,822 waste fuel drums will need to be crushed and cleaned. Approximately 950 m^3 of crushed waste fuel drums will require disposal at a new engineered on-site landfill.

- Fifty (50) Above-Ground Storage Tanks (ASTs) will require decommissioning on-site by a qualified petroleum technician prior to processing and disposal.
- Twenty-two (22) buildings will require abatement (Asbestos, Mercury and Ozone-Depleting Substances (ODS)) followed by demolition. Non-hazardous waste will be disposed of in the on-site engineered landfill and the hazardous waste (~4 m^3) will be disposed of at an off-site licenced facility outside of the Territory.
- Fourteen (14) pieces of non-operational heavy equipment and six (6) pieces of operational heavy equipment would need to be decommissioned prior to disposal. Approximately 760 m^3 of non-hazardous waste associated with the heavy equipment would require disposal at a new, engineered, on-site landfill.
- Approximately 100 m^3 of miscellaneous non-hazardous waste debris scattered on the surface (i.e., metal, wood, etc.) would require collection and consolidation in a new engineered on-site landfill.
- A borrow pit would be developed to produce up to an estimated 100,000 m^3 of aggregate for airstrip upgrades, road upgrades, construction of a new engineered on-site landfill, capping of the existing WDAs, construction of a camp pad and temporary waste storage area and general site regrading. This will require a Quarry permit from Crown Indigenous Relations and Northern Affairs Canada (CIRNAC) Lands Administration Division.
- Existing WDAs would be covered with a coarse aggregate cap and contoured to promote drainage while reducing erosion potential. A natural or geosynthetic liner would be installed in areas of concentrated waste. The WDAs would be subsequently monitoring as part of the Long-Term Monitoring (LTM) to evaluate stability. The total area requiring installation of a coarse aggregate cap associated with existing WDAs is approximately 36,000 m^2.
- A new engineered landfill consisting of a 50 m x 50 m cell with a liner and aggregate cover is planned for the on-site disposal of non-hazardous inert waste. The landfill is designed such that the berm height can be adjusted to accommodate the anticipated range of consolidated waste volume (currently estimated at 4,500 m^3 to 6,200 m^3).

Environmental Assessment

The assessment of potential environmental effects of the Project focused on a selection of Valued Ecological Components (VECs) and Valued Socio-Economic Components (VSCs) that were selected based on their intrinsic value to the ecosystem, heritage and culture, protection afforded by legislation and professional judgement. The VECs and VSCs selected for this assessment included:

- Climate and Air Quality;
- Geomorphology;
- Hydrology and Hydrogeology;
- Soils;
- Aquatic Resources, Fish, and Fish Habitat;
- Vegetation;

- Wildlife and Wildlife Habitat;
- Land Use;
- Heritage Resources and Culturally Important Areas;
- Employment and Economy; and,
- Community Services.

To determine the potential effects of the Project on the various VECs or VSCs, the baseline environmental information and specific Project activities were reviewed for the Project site, and using professional judgement, the Project activities (site preparation, remediation and closure) that may impact/interact with a specific VEC or VSC were identified. The most likely interactions were associated with climate and air quality, soils, wildlife and wildlife habitat, and employment and economy.

A number of preventative and mitigation measures have been identified for the Project activities where potential adverse effects on the VECs or VSCs were identified. With the implementation of these measures, the potential adverse residual effects of the Project on the VECs or VSCs are expected to be negligible in magnitude. Positive residual effects were identified for several VECs or VSCs due to the removal and proper disposal of hazardous and non-hazardous wastes from the Project site, as well as the employment and economic benefits that the Project is expected to provide to the region.

Given that the Project will have a positive impact on many of the VECs and VSCs upon completion, the short duration of Project activities, and the absence of other projects in the region that could interact with the Project in a cumulative manner, no cumulative environmental effects are anticipated to result from completion of the Project activities.

1.0 Introduction

Nuqsana and Outcome Consultants in joint venture (Nuqsana-Outcome or NOJV) were retained by Public Services and Procurement Canada (PSPC) to conduct an Environmental Impact Assessment (EIA) of the proposed activities for the Remediation Project at the Isachsen High Arctic Weather Station (HAWS) on Ellef Ringnes Island, Nunavut (the Project). Previous work completed includes: a Phase III Environmental Site Assessment (ESA), Human Health and Ecological Risk Assessment (HHERA), Hazardous Building Materials Assessment (HBMA), Archaeological Impact Assessment (AIA), Permitting Requirement and Application Roadmap, Lead Abatement Options Analysis, Fuel Reduction Plan, Borrow Pit Development Plan, Building Demolition and Solid Waste Management Plan, Permafrost Monitoring and Climate Change Vulnerability Assessment, Remedial Action Plan (RAP), and community engagement. This EIA report has been prepared to align with the Statement of Work prepared for the Project, to identify the potential environmental effects of the proposed remedial activities included in the Project, recommend measures and management practices to mitigate these effects, and characterize predicted residual effects on the environment that may remain following application of mitigation, including those that may contribute to cumulative effects in the region.

According to the *Nunavut Land Claims Agreement* (NLCA; Nunavut Tunngavik Inc. 1993), the Project meets the definition of a "project proposal" and is not considered exempt from screening under Schedule 12-1 of the NLCA. Section 12.2.4 of the NLCA requires that the Nunavut Impact Review Board (NIRB) screen project proposals based on defined criteria. Project proposals are provided to NIRB as part of the overall project approval process, as outlined in the *Proponent's Guide* from the NIRB Technical Guide Series (NIRB 2020). This EIA was undertaken in accordance with these legislative requirements and guidelines and aligns with the information that is required in a project proposal, as outlined in the *Proponent's Guide* (NIRB 2020).

1.1 Project Rationale

Through the Federal Contaminated Sites Action Plan (FCSAP), the Government of Canada is addressing numerous contaminated sites in the North, which were developed through past land use practices and have since been abandoned by previous occupants. Implementation of the FCSAP has initiated the development of standard protocols and procedures specific to developing projects in the North. In addition to the policy and the operating procedures, a number of protocols have been developed and are being implemented for the removal of contaminated materials from abandoned sites.

Isachsen HAWS is included in the Federal Contaminated Sites Inventory (Treasury Board of Canada Secretariat, 2021). Under the FCSAP, Environment Canada and Climate Change (ECCC) was identified as the custodian for site management.

1.2 Project Background

As a former HAWS that ceased manned operations in 1978, Isachsen has not been occupied since that time. The Site has a total area of approximately 4.5 km^2 and is located at a latitude of 78° 46' 40" N and longitude of 103° 31' 40" W facing Louise Bay, on the west-facing side of Ellef Ringnes Island. It is situated on federal crown land and is occupied by 22 abandoned structures with associated infrastructure, equipment, and supplies. Other features previously identified at the Site, in addition to the 22 structures, include former water and sewage infrastructure, large-scale fuel storage and distribution facilities, two waste disposal areas (WDAs), day-fuel tanks, thousands of empty/partially empty drums, other abandoned equipment, and debris. The project location is provided in **Appendix A, Figure 1**. Since 1978 the weather data collection facilities at Isachsen have been automated (i.e., unmanned).

ECCC staff visit Isachsen annually to monitor the operating Automated Weather Observation Station (AWOS). The Polar Continental Shelf Program (PCSP), which provides support to ECCC staff by contracting aircraft for transportation, have confirmed that these visits are generally in and out on the same day, but occasionally require overnight stay for a few days. Isachsen was used as limited training grounds for the Canadian Rangers; however, the Canadian Rangers have confirmed that they have not accessed the Site in over 7 years and have no plans to. From an ecological perspective, Isachsen offers habitat for a variety of wildlife (e.g., Arctic foxes, polar bears, Peary caribou, snow buntings, muskox, gulls, and ptarmigans) and vegetation (e.g., Arctic poppy, Arctic mouse-ear chickweed, and foxtail) (NOJV, 2025).

In the last 10 years, a number of Site Assessments have been carried out at the former Isachsen HAWS. Stantec Consulting Ltd. (Stantec) completed a Limited Phase II Environmental Site Assessment (ESA) in 2014. In 2019, Stantec completed a Supplemental Phase II ESA to identify the presence of impacts to the Site's soil, sediment and surface/melt water related to historical and current Site activities in areas of the Project site that were unassessed in 2013/2014 and within priority areas of potential concern. In 2022, Dillon-Outcome Joint Venture (DOJV) carried out a Phase III ESA at the Site to further assess, characterize and delineate AECs identified during the previous Stantec ESAs to support future detailed risk assessments and remediation planning. In 2023, sediment toxicity testing and surface water sampling in the Louise Bay near the gully outlets were conducted.

Observational information was collected during the site investigations to provide information on the existing site conditions and were incorporated into this EIA report. This information included observations on the physical and biological environments at the Project site location and the surrounding area. Pertinent information has been incorporated into the specific sections for the Project site within this document.

1.3 Regulatory Framework

Due to the nature of potential site remediation activities, this Project is subject to various acts, regulations, and guidelines. A summary of regulatory requirements applicable to the Project is provided in **Table 1-1.**

Table 1-1: Summary of Legislation and Regulatory Requirements

Legislation/Regulatory Document	Authority	Description or Potential Trigger
Species at Risk Act (SARA)	Environment and Climate Change Canada (ECCC)	The Act provides protection for at-risk wildlife in Canada. Activities that may harm, harass or disturb a listed species, or its habitat, may require a SARA Permit. Recovery Strategies may be in place for species listed on Schedule 1 of the Act.
Fisheries Act	Fisheries and Oceans Canada (DFO)	This Act assists in creating a framework to manage and control works relating to fish and fish habitat, conserve and protect fish and fish habitat, allow proper fish passage and prohibits harmful substances from entering fish bearing waters. DFO Consultation through a request for review (RFR) is required when residual harm to fish and fish habitat may occur due to site activities.
Nunavut Land Claims Agreement Act	CIRNAC	Use, management and conservation of land, water, and resources of Nunavut, and identifies the needs to complete an environmental assessment for specific projects and types of work on Nunavut land.
Nunavut Planning and Project Assessment Act	CIRNAC	Provides direction on the definition of a project, and the EIA process.
Canadian Environmental Protection Act	ECCC	The purpose is to focus on prevention of accidents or spills leading to potential pollution or impacts to the environment and human health.
Migratory Birds Convention Act (MBCA) and *Regulations*	ECCC	Provides protection of migratory birds, their eggs and their nests.
Transportation of Dangerous Goods Act	Transport Canada	The Act applies to all shipping and handling of dangerous goods, by any means of transport whether or not the goods originate from or are destined for any place or places in Canada.

Legislation/Regulatory Document	Authority	Description or Potential Trigger
Canada Labour Code	Human Resources and Skills Development Canada (HRSDC)	Provides direction on safety issues to ensure that all projects are conducted in a safe manner and ensure that no environmental aspects infringe on the safety of a federal site or the workers.
Territorial Lands Act	CIRNAC	Provides the authority for administering and protecting territorial lands under the direct control of the Minister of Northern Affairs.
Territorial Lands Regulations	CIRNAC	Provide regulatory control for maintaining sound environmental practices for land use activities on Territorial lands. Land use permits (LUPs) are under the authority of the *Territorial Lands Regulations.* For Crown land in Nunavut, the application acceptance and issuance process is the responsibility of CIRNAC. Class "A" permits are screened by the NIRB. Class "B" permits are distributed amongst a Land Advisory committee for comments. As per the RAP, the remediation project meets several triggers that will require it to obtain a Class A LUP (NOJV, 2025).
Nunavut Wildlife Act	Government of Nunavut	Establishes comprehensive regime for the management of wildlife and habitat in Nunavut, including the conservation, protection and recovery of species at risk, in a manner that implements provisions of the Nunavut Land Claims Agreement respecting wildlife, habitat and the rights of Inuit in relation to wildlife and habitat.
Nunavut Environmental Protection Act	Government of Nunavut	Responsible for ensuring that Nunavut's environment is protected, promoted and enhanced, while encouraging responsible development through input and direction into various permit applications.
Nunavut Environmental Right Act	Government of Nunavut	Establishes a right to a healthy environment and provides the people of Nunavut the means to protect the environment by authorizing public prosecutions for violations of the Act.
Nunavut Territorial Archaeological Sites Regulation	Government of Nunavut	Responsible for the protection of Nunavut's archaeological and paleontological heritage.
Environmental Guideline for the General Management of Special and Hazardous Waste	Government of Nunavut	Provides guidance for safe and efficient management of hazardous waste to waste generators, receivers, and carriers in Nunavut (revised 2023).

Legislation/Regulatory Document	Authority	Description or Potential Trigger
Environmental Guideline for the Burning and Incineration of Solid Waste	Government of Nunavut	Territorial considerations for incineration of solid waste (revised January 2012).
Nunavut Water Regulations	Nunavut Water Board (NWB)	All uses of water and disposal of waste into water, with the exception of domestic or emergency use, require NWB approval. This includes municipal activities, mining exploration activities, mining operations, camps, etc. Licences require that all waste disposal locations, including sewage treatment systems, grey water discharge areas, and fuel storage areas be located a minimum of 31 metres (m) from the high-water mark of any water body or drainage course. As per the RAP, the remediation project at Isachsen will have waste triggers that will require a Type B Licence (NOJV, 2025).

1.4 Structure of the Report

This report includes an assessment of the environmental effects of the Project site. A description of the general environmental assessment approach that was used is provided in **Section 2.0**, while the assessment of the Project site is presented as a separate section within this report (i.e., **Section 3.0**).

The sections that follow the site-specific assessment sections include an assessment of the effects of accidents, malfunctions, and unplanned events related to the Project (**Section 4.0)**, an assessment of the effects of the environment on the Project (**Section 5.0**), an assessment of potential cumulative effects that the Project may contribute to in consideration of other past, present, or reasonably foreseeable future activities in the region (**Section 6.0**), and a summary of follow-up and monitoring programs that may be implemented upon completion of the Project activities (**Section 7.0**).

2.0 Environmental Assessment Approach

The assessment of the Project site was completed using a 'values-based framework', which was used to achieve a comprehensive and focused assessment of the potential effects of the Project activities on a selection of Valued Ecological Components (VECs) and Valued Socio-Economic Components (VSCs). The VECs and VSCs identified were selected based on their intrinsic value to the ecosystem, heritage and culture, protection afforded by legislation and professional judgement.

2.1 Selection of Valued Ecological and Socio-Economic Components

The selection of VECs and VSCs for the environmental assessment at the Project site was carried out in consideration of:

- Regulatory guidance and requirements, including the SOW prepared for the Project;
- Information provided or concerns raised during consultation with key stakeholders, Indigenous peoples and the public;
- The nature and extent of proposed Project components and activities;
- Existing (i.e., baseline) environmental conditions in the Project areas, and an understanding of the potential interactions between Project activities and the environment, and the potential environmental effects that may result from these interactions;
- Experience gained and lessons learned from completed projects of similar scope, in similar climate and landscape; and
- Professional judgement of the Project team.

Once selected, the VECs and VSCs were carried forward to identify how Project activities may interact with these components.

2.2 Identification of Project-Environment Interactions

The Project activities were considered in the context of each of the selected VECs and VSCs for the Project site, to identify the activities that could interact with the VECs/VSCs through pathways of effects. Where complete effect pathways were identified, the Project activities that could interact with the VEC/VSC and result in an environmental effect were assigned a check mark in a matrix table that is included in the environmental assessment section for each Project site.

2.3 Potential Effects, Proposed Mitigation and Residual Effects

2.3.1 Characterization of Effects

An assessment of the potential effects that may result from interactions between Project activities and each VEC/VSC is included in the EIA. The assessment was conducted in the context of each VEC/VSC for the Project site, in consideration of the following features for each potential environmental effect:

- The pathways by which the Project activities may result in the potential environmental effect on the VEC/VSC;
- Application of standard and Project-specific mitigation measures (i.e., avoidance or mitigated reductions) or management strategies that may be proposed to reduce or eliminate the potential environmental effect;
- Identification of any resulting predicted residual effects, following the application of the proposed mitigation measures, and characterization of these effects using predefined criteria; and
- Determination of the significance of each of the predicted residual effects.

The criteria used to characterize residual effects of the Project are defined in **Table 2-1**. These criteria are based on a ranking system that has been accepted by regulatory agencies of varying jurisdictions across Canada (including the NIRB), as well as the factors that are taken into account by the NIRB when screening a project proposal (NIRB 2020).

Table 2-1: Criteria for Characterization of Predicted Residual Effects of the Project on the Environment

Criterion	Quantitative Measurement or Qualitative Classification
Direction	**Positive** – the residual effect may result in a net beneficial change to the selected VEC/VSC, relative to the baseline conditions. **Neutral** – the residual effect may result in no net change to the selected VEC/VSC, relative to baseline conditions. **Adverse** – the residual effect may result in a net adverse change to the selected VEC/VSC, relative to the baseline conditions.
Magnitude	**Negligible** – the residual effect may result in no detectable change to the VEC/VSC from baseline conditions. **Low** – the residual effect may result in measurable changes to the VEC/VSC from baseline conditions, though the changes are anticipated to be within the range of natural variation and below applicable guideline values. **Moderate** – the residual effect may result in measurable changes to the VEC/VSC from baseline conditions that are slightly beyond the range of natural variation or applicable guideline values (e.g., not measurable beyond the Local area, potentially affecting a portion of a population).

Criterion	Quantitative Measurement or Qualitative Classification
Magnitude (continued)	**High** – the residual effect may result in measurable changes to the VEC/VSC from baseline conditions that are considerably beyond the range of natural variation or applicable guideline values (e.g., measurable effects extending beyond the Local area, potentially affecting an entire population).
Geographic Extent	**Project Footprint** – the residual effect is limited to the extents of the Project site, and the travel routes between the Project site and Resolute. **Local** – the residual effect is limited to within 1 km of the Project Footprint. **Regional** – the residual effect extends up to 10 km from the Project Footprint.
Duration	**Short-term** – the residual effect is limited to less than one year, or less than one generation for a species, before returning to baseline conditions. **Medium-term** – the residual effect extends beyond one year and is limited to less than ten years, or one generation for a species, before returning to baseline conditions. **Long-term** – the residual effect extends beyond 10 years, or longer than one generation for a species, before returning to baseline conditions.
Frequency	**Single Occurrence** – the residual effect is restricted to a single, discrete period or Project activity. **Periodic Occurrences** – the residual effect occurs intermittently. **Continuous** – the residual effect occurs continuously.
Probability	**Low** – the residual effect is unlikely to occur. **Medium** – there is a moderate probability of the residual effect occurring. **High**– there is a high probability of the residual effect occurring.
Reversibility	**Reversible** – the residual effect is likely to be reversible at some predicted period. **Irreversible** – the residual effect is unlikely to be reversed and is predicted to be permanent.

2.3.2 Determination of Significance

A determination of significance is assigned to the residual effects that remain for each VEC/VSC after mitigation measures have been implemented. This is based on a qualitative analysis of the ratings assigned to the residual effects using the characterization criteria described above. Residual effects are determined to be “not significant” or “significant”, as defined in **Table 2-2**.

Table 2-2: Definitions Significance of Predicted Residual Effects

Significance	Definition
Not significant	The residual effect is measurable but not likely to result in an adverse change to the VEC/VSC beyond a local extent and over a long-term period.
Significant	The residual effect is measurable and likely to result in an adverse change to the VEC/VSC beyond a local extent and over a long-term period.

3.0 Isachsen HAWS

3.1 Site Background

The Isachsen HAWS site is located approximately 500 km northwest of Resolute Bay, NU at 78° 46' 40" N and 103° 31'40" W longitude, on the west-facing side of Ellef Ringnes Island (**Figure 1** in **Appendix A**). It is about 300 m from Louise Bay to the west. It is situated on federal crown land and is occupied by 22 permanent structures with associated infrastructure, equipment, and supplies. Other features previously identified at the Site, in addition to the 22 structures, include former water and sewage infrastructure, fuel storage and distribution facilities, power generation equipment, two on-site waste disposal areas (WDAs), fuel tanks, thousands of empty/partially empty barrels, other abandoned equipment, and debris.

The supplies for constructing the initial buildings and grading of the runway were mobilized by air and deposited on sea ice between April 3 and 21, 1947. The station operated as part of a joint Canadian and American series of five high arctic weather stations for the purpose of measuring meteorological information and relaying it down to weather analysist in the South. One of the weather measurement activities consisted of filling and releasing hydrogen-filled balloons and tracking their movement. The United States left this partnership in 1972. Canada maintained a staffed operation at Isachsen under Transport Canada until 1975 and under Environment Canada until September 1978.

Since 1978, the weather data collection facilities at Isachsen have been automated and the facilities at the Site have been used to support numerous scientific research groups, and for hosting exercises by the Canadian Rangers. The Meteorological Services of Canada Bureau (MSCB) operates an automated weather station at Isachsen which is available at: Isachsen - Past 24-Hour Conditions - Environment Canada (weather.gc.ca).

Access to Isachsen for building materials, equipment and personnel has been exclusively by air including documented access by large transport aircraft (L-382 Hercules) in the past. The only exception to aircraft access to Isachsen occurred in 1995 when it was reached by cat train over ice by a remediation contractor. There is no record of it having been reached by sea and after multiple inquiries during the preparation of the RAP, the only service providers of the region Nunavut Eastern Arctic Shipping Group (NEAS) and Nunavut Sealink and Supply Inc (NSSI) indicated that it could not be reached by sealift.

The Site has been the subject of numerous studies since 1996. Dillon-Outcome Joint Venture (DOJV) completed a Phase III Environmental Site Assessment (ESA) in the 2022 field season (DOJV Phase III ESA, 2023) as well as a Human Health and Ecological Risk Assessment (HHERA) (NOJV 2025). A Hazardous

Waste & Building Materials Assessment, Data Gap Analysis and Remedial Options Analysis (ROA) were also produced in 2023 to further define the required remediation work scopes and preferred approach to dealing with existing waste streams.

NOJV continued remedial design and planning in 2024-2025 with the completion of an Archaeological Impact Assessment, Permitting Requirement and Application Roadmap, Lead Abatement Options Analysis, Fuel Reduction Plan, Borrow Pit Development Plan, Building Demolition and Solid Waste Management Plan, Community Engagement Plan, Permafrost Monitoring and Climate Change Vulnerability Assessment, Environmental Impact Assessment, and Field Summary. As an immediate risk reduction measure, in the summer of 2025 the fuel and combustible liquids existing in the Aboveground Storage Tanks (ASTs) and drums was either incinerated to best efforts or removed from site for beneficial reuse.

Clean-up efforts were initiated in 1996 with drum crushing, fuel incineration and burial of derelict heavy equipment in the West Gully Landfill, but the muddy conditions encountered impeded activities.

Surficial drainage at the Site generally flows from north to south towards Louise Bay. The terrain to the north of the Isachsen former HAWS rises gently to a northeast-southwest trending ridge, on which the runway is located. A road connects the HAWS to the runway. The local topography ranges from 56 metres above sea level (masl) in the northern half of the Site to -3 masl at the shoreline in the South (Stantec, 2014). Melt water drainage ditches act as conduits for transporting surface water from higher elevations to the ocean.

3.2 Summary of Previous Reports

3.2.1 Limited Phase I and Phase II ESA (2013, 2018)

Stantec completed a Limited Phase II ESA in 2013 (Stantec 2014a) and a Supplemental Phase II ESA in 2018 (Stantec 2019b) to identify the presence or absence of impacts to the Site's soil, sediment, and surface (melt) water related to historical and current Site activities within priority APECs. A petroleum product system assessment related to the fuel storage tank systems at the Site was also completed in 2013 in parallel with the ESA.

The 2013 field program involved collecting samples of soil, sediment, and melt water from the 26 known APECs and submitting them for analysis BTEX parameters (benzene, toluene, ethylbenzene, xylenes), petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), ethylene glycol, and metals. Elevated arsenic concentrations across the Site appeared to be consistent with local background concentrations in the area, but it was recommended that a background soil, sediment, and melt water sampling plan be completed for the Site to reduce uncertainty and enable statistically meaningful comparisons (Stantec 2014b). It was also recommended that two additional areas be added to the 26 known APECs:

- APEC 27: the suspected 'southern' landfill located south of APEC 13
- APEC 28: the barrel processing area east of APEC 6

The Supplemental Phase II ESA was completed in 2018 to infill data gaps identified from the 2013 program, complete a background sampling program, and provide recommendations for additional work. Soil, sediment, and melt water/surface water samples were again collected and submitted for chemical analysis. The report consolidates the results from both the 2013 and 2018 field programs, the results of which were used to complete a risk assessment (Stantec 2019a) and a preliminary remedial options analysis (Stantec 2019c).

Results of the analytical programs conducted in 2013 and 2018 showed concentrations of several metals, PHCs, VOCs, and pH in exceedance to federal guidelines in soil, sediment, and surface water obtained across the Site. Based on a statistical comparison with background samples collected in 2013 and 2018, numerous parameters in soil (pH less than 6, arsenic, copper, lead, nickel, sulphur, vanadium, and zinc), sediment (arsenic, beryllium, copper, molybdenum, nickel, selenium, sulfur, vanadium, zinc), and melt water (cadmium, cobalt, lithium, manganese, molybdenum, nickel) were considered naturally occurring (Stantec 2019b).

No non-aqueous phase liquids (NAPL) or PHC sheen was observed at any soil, sediment, or surface water sample location during the 2013 field program, but there was evidence of a fuel release from a steel drum beside the Maintenance Garage in APEC 12 during the 2018 program. Based on the results of the 2013 and 2019 field programs, the aerial extent of impact at the Site was estimated to be between 10.42 hectares (ha) and 100 ha and the Site was classified as a Class 1 or high priority for action Site with a National Classification System for Contaminated Sites (NCSCS) score of 83.0 (Stantec 2019b).

It was recommended that a Phase III ESA be completed to delineate impacts to soil/sediment located on the perimeter of the AECs/APECs.

3.2.2 Screening Level Risk Assessment (2018)

Stantec (2019a) used the results of the 2013 and 2018 field programs to complete a Screening Level Risk Assessment (SLRA) for human and ecological receptors based on soil, surface/melt water, and marine sediment data collected as part of a Limited Phase II Environmental Site Assessment (ESA) and Petroleum Product Assessment (Stantec 2014a) and Supplemental Phase II ESA (Stantec 2019b) for the Site.

The human health assessment evaluated the potential exposures of human receptors (e.g., a worker preforming maintenance on the Weather Station, a Canadian Ranger, a Site Contractor and Remediation Worker) to chemicals found at the Site. The COPCs identified in soil included PHCs F1 and F2, metals (aluminum and tin), and VOCs (ethylene dibromide). The COPCs identified in surface water were metals (arsenic, lead, and vanadium). The exposure pathways considered for COPCs in soil were ingestion and

dermal contact as well as inhalation of indoor air for the Site Contractor only. A very conservative assumption was made that while on-Site a person could potentially drink from the seasonal surface/melt water in the east and west gullies. This is highly unlikely as it is expected that anyone coming to the Site would bring potable water. No risks were identified for human health even with the consideration of someone drinking water from the gullies. There was a potential risk identified for ethylene dibromide in indoor air but it was determined that the scenario was unrealistic as ethylene dibromide was rarely reported above the detection limit in soil and if it was, the concentrations were not found near buildings.

The Ecological Risk Assessment (ERA) evaluated potential risks to terrestrial and aqualfic ecological receptors based on exposure to chemicals found at the Site associated with historical activities. The COPCs identified in soil included PHC F1, PHC F2, PHC F3, and total xylenes, aluminum, boron (available), selenium, tin, 1,3,5-trimethylbenzene, and trimethylbenzene (mixed isomers). The COPCs identified in sediment included barium, boron, boron (available), mercury, silver, acenaphthene, acenaphthylene, fluoranthene, fluorene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, phenanthrene and hexane. The COPCs identified in surface/melt water were aluminum, arsenic, copper, iron, lead, mercury, sodium, vanadium, zinc.

For terrestrial ecological receptors exposed to COPCs in soil, potentially unacceptable risks were identified for PHC F2, aluminum, and boron (available). These potentially unacceptable risks were determined based on comparison to guidelines intended to be protective of direct soil contact (i.e., terrestrial plants and soil invertebrates).

For marine receptors exposed to COPCs in sediment, potentially unacceptable risks were identified for barium, boron (total and available), 1-methylnaphthalene, 2-methylnaphthalene, and hexane. These potentially unacceptable risks were determined either in the absence of an applicable guideline or based on comparison to guidelines intended to be protective of marine benthic invertebrates.
For freshwater receptors exposed to COPCs in surface/melt water, potentially unacceptable risks were identified for aluminum, copper, iron, lead, mercury, and zinc. These potentially unacceptable risks were determined either in the absence of an applicable guideline or based on comparison to guidelines intended to be protective of freshwater aquatic life

3.2.3 Phase III ESA (DOJV, 2023)

In the 2022 field season, Dillon Consulting Ltd. and Outcome Consultants Inc. in joint venture (DOJV) completed a Phase III ESA for the Site (DOJV 2023) in order to further assess, characterize, and delineate the AECs identified during previous investigations. The goal of the assessment was to delineate COPCs in the AECs to support future detailed risk assessments and remediation planning. Based on recommendations from the Supplemental Phase II ESA (Stantec 2019b), no further sampling was completed in 2022 at AECs 4, 5, 6, 7, 10, and 27; of these, only AECs 7 and 10 were considered delineated by DOJV.

Following completion of the 2022 sampling program, DOJV classified the AECs as follows:

- Well delineated: AECs 3, 7, 10, 14, 15, 16, 18, 23, 24, 28
- Considered delineated by Stantec (not sampled in 2022): AECs 4, 5, 27
- One side lacking clean limits: AECs 1, 2, 8, 9, 13, 17, 19, 20, 21, 29
- Two or more sides lacking clean limits: AECs 6, 11, 12, 22, 25, 26, 30, 31

Two shallow test pits (26-1 (2023) and 26-2 (2023)) were excavated within the West Delta and Barrel Dump Delta respectively for PAH analysis in sediment. The locations had concentrations of Fluorene (ranging from 0.086 to 0.1 mg/kg), 2- Methylnaphthalene (ranging from 0.369 to 0.446 mg/kg), Naphthalene (ranging from 0.49 to 0.621 mg/kg) and Phenanthrene (ranging from 0.158 to 0.225 mg/kg) above the applied guidelines. Sampling locations were completed for potential for lateral delineation of PAHs impacts in sediment. Although this wasn't achieved, the results are consistent with sediment results within the deltas.

Based on the results of the Phase III ESA, DOJV recommended that the analytical results available for the Site be compiled into a database, that a Detailed Quantitative Risk Assessment (DQRA) be completed for human and ecological receptors, and, based on the results of the first two tasks, that a sampling plan for any additional assessment and/or requirements for remediation planning be developed.

Seven potential hazardous material types were observed within the buildings: Asbestos, Lead, Mercury, Mould, Ozone-Depleting Substances, Polychlorinated Biphenyls (PCBs) and Silica.

3.2.4 Human Health and Ecological Risk Assessment (DOJV, 2024, revised as NOJV, 2025)

An HHERA was completed by CanNorth and DOJV of the Isachsen Former HAWS (the Site). The HHERA conducted for the Isachsen former HAWS took into account the available data collected from 2013 to 2022. A qualitative approach was taken for the HHRA since the measured concentrations of analyzed parameters in soil were below the human health components of the applicable environmental guidelines with the exception of localized areas of petroleum hydrocarbon of the F2 fraction (PHC F2). Additionally, a limited number of people (i.e., < 10 per year) visit the Site or spend any length of time there (approximately 2 hours). The human receptors at the Site were considered to be the Remediation workers, as they would be present at the Site for longer durations (multiple days), but would be wearing appropriate personal protective equipment. This approach to the HHRA assessment followed guidance outlined by Health Canada (2021). From a human health perspective, the maximum measured concentrations were determined to not pose a risk to humans present at the Isachsen former HAWS Site.

For the ERA, a qualitative approach was taken as the identified issues were related to potential impacts on vegetation present at the Site. This approach followed guidance outlined by Environment

Canada from their FCSAP Ecological Risk Assessment guidance document (FCSAP 2012). The ERA determined that plant communities are not experiencing adverse effects due to the contamination present in the soil at the Isachsen former HAWS. Additionally, wildlife were not found to be at risk.

The benthic community that may be present in Louise Bay was also considered. The results of the sediment assessment determined that there is no impairment of the benthic community ecosystem function; however, the east and west gully deltas have isolated areas of 1-methylnaphthalene and 2-methylnaphthalene sediment contamination that may impact benthic organisms in these areas. Toxicity testing of the sediments in the east and west gully deltas indicated that there were no risks to benthic organisms. Additionally, it was determined that the meltwater entering Louise Bay does not pose a risk to the marine mammal population (such as seals) in the bay.

3.2.5 Supplemental Phase III ESA (NOJV, 2024)

In the summer of 2023, Nuqsana and Outcome Consultants in joint venture (NOJV) completed additional ESA activities for the Isachsen Project site to address identified data gaps identified from the HHERA (DOJV, 2024) in preparation for the next step in preparing the Site for decommissioning and remediation (Remedial Options Analysis). The additional data was not anticipated to affect the outcome and conclusions from the HHERA, however, would support decision-making for the ROA regarding the WDAs and potential hazardous building materials associated with the remaining buildings.

Thirteen (13) test pits were excavated in 2023 to an average maximum depth of 0.15 m at the West Gully WDA, the Old Garage, the Dam and Downstream Gully, and along the Shoreline (West Barrel Dump and East Deltas). Soils were analyzed for PHCs, PAHs, and per and poly-fluoroalkyl substances (PFAS). Concentrations were below the applied guidelines, confirming assumptions made in the HHERA.

Ten (10) surface water samples were collected within the three gullies to evaluate surface water runoff from the WDAs and potential for leachable lead content near the tanks. Concentrations for organic parameters (PHCs, PAHs) were below the analytical detection limits. Elevated concentrations of metals in surface water were observed near the WDAs, however concentrations were decreased downgradient (prior to reaching the shoreline/bay).

A hazardous buildings materials assessment (HBMA) was conducted during the 2023 field investigations. Nine tanks (PS23-Tank 4, 9, 10, 19, 20, 21, 24, 25 and 00001915) were sampled for lead paint analysis. Concentrations of total lead ranged from 426 mg/kg (PS23-Tank 10) to 151,000 mg/kg (PS23-Tank 19), all exceeding the applied lead guideline. In general, the HBMA results indicated that a majority of the building/structures at the Project site contained forms of asbestos (i.e. in caulking, cement board, vinyl floor tiles). Lead paint (i.e., exterior orange paint on metal cladding and select interior paint/buildings) had measurable total lead concentrations, however, based upon an evidence backed approach for the

lack of leachability risk, on-site disposal of the lead painted materials in an engineered landfill was deemed suitable.

Other waste streams identified on site include the following:

- 76,200 L of waste fuel (diesel, Jet A&B, gasoline, kerosene, oily water, other);
- 4,200 m^3 of non-hazardous waste (metal debris, building demolition waste, waste drums, non-operational and operational vehicles)
- 160 m^3 of hazardous waste (asbestos and/or lead impacted)
- 50 m^3 of hazardous waste requiring off-site disposal (hazardous lead paint, mercury-containing materials, ozone-depleting substances, lead acid batteries).

Six thermistors were installed to depths from 2.5 mgs to 5.8 mgs around the WDAs to provide baseline data regarding the depth to permafrost around the WDAs, and were intended to be included in future long-term monitoring programs at the Project site.

A LiDAR (Light Detection and Ranging) survey was conducted to provide detailed site data for runway and borrow assessments as well as providing baseline imagery of the existing thermokarst topography.

The airstrip runway was assessed by aviation specialists HMAero for fitness, and to identify improvement that would be required for non-frozen conditions. The fitness evaluation identified that the volume of granular material required to upgrade the runway for a Hercules L-382 would be 30,000 m^3.

Further borrow assessments were carried out during the 2023 field season. A sample of the borrow material was collected on July 16, 2023 and submitted to Tetra Tech Canada for material testing including sieve (50 mm and 125 mm) and L.A. abrasion analysis. The sieve results indicate the material was a mix of larger stones but also included about 15% sands (5 mm to 0.080 mm) following cone crushing to complete the 50 mm sieve/L.A. abrasion testing. A L.A. abrasion test is conducted by placing the 50 mm sieve materials into a rotating drum with steel spheres and running for approximately 15 minutes. The calculated mass of aggregate that has broken apart to smaller sizes is expressed as a percentage of the total mass of aggregate loss. Therefore, lower L.A. abrasion loss values indicate the aggregate is tougher and more resistant to abrasion. The L.A. abrasion test on the borrow material resulted in a 17% loss of mass signifying that the rock is hard (dark, dense basalt) and should make very durable aggregate. Based on the drone survey of the main borrow area, an approximate volume 93,000 m^3 (assuming a 1.0 m depth) of borrow material is available.

In the 2024 field season NOJV investigated a potential borrow supply area and reconditioned the two incinerators that had been used to incinerate fuel in 1996.

3.2.6 Additional Relevant Activities (NOJV, 2025)

Field Activities 2025: Due to the poor condition of the drums, ASTs and risk of a spill, the incineration of waste fuel was completed in 2025 as a separate activity in advance of the full-scale remediation contract. The activity of fuel incineration required an application for a Land Use Permit (LUP) submitted to the Nunavut Planning Commission (NPC), the Nunavut Impact Review Board (NIRB) and Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). LUP permit N2025U00010 was issued on June 30, 2025 prior to commencement of the site activities. There were approximately 304 drums that were either full or partially full of waste fuel which contained approximately 20,800 L of various fuel products. The three Runway ASTs contributed the largest portion of the waste fuel with a total of approximately 45,800 L of diesel fuel. Additionally, 13 other ASTs located in various locations around the Site contributed approximately ~10,000 L of various fuel products to the total volume. These tanks that were partially full of petroleum product were deemed to still be in service preceding the incineration program.

Following this incineration process, there remained a residual volume of approximately 5,000 L of non-combustible liquids comprised of hydrocarbons and water that was consolidated in totes for future management during remediation. As well, there was ~1000 L of liquids in eight drums that contained various liquids not suitable for incineration in 2025, including waste oil, antifreeze, or piston oil, and as such, these remaining liquid wastes will require management during remediation.

At the end of the 2025 field program, approximately 8,000L of waste fuel/oily wastewater (non-combustible liquids) remain within ASTs at the Site.

Thirty-nine drums that were identified to contain waste diesel were removed off-site and the contents were incinerated in Resolute, NU.

Additional thermistor data from 2024 to 2025 was obtained for the climate change vulnerability assessment.

Desktop - Lead abatement options analysis: An analysis of on-site lead abatement options was carried out for the remote project site. Although the paint on the ASTs had measurable total lead concentrations, the lead concentration in soil samples collected adjacent to the ASTs had lead concentrations with a range of 12 - 67 mg/kg which is below the 100 mg/kg applicable soil quality guideline. The soil results adjacent to the ASTs confirm the lack of leachability risk of lead from the amended paint on the ASTs. Similar to the approach taken at the recent Coral Harbour remediation project (Stantec, 2022), an evidence-based approach for the lack of leachability risk supports the suitability of on-site disposal of the metal waste in an engineered landfill. NOJV found that the option of abatement through the removal of paint from the AST surface posed an unacceptable risk exposure to workers at such a remote work location (NOJV, 2025).

3.2.7 Climate Change Vulnerability Assessment (NOJV, 2026)

NOJV completed a Climate Change Vulnerability Assessment (CCVA) for the abandoned Isachsen HAWS in preparation for the next step in preparing the Site for decommissioning and remediation as per the RAP. The climate change vulnerability assessment identified site-specific concerns with respect to climate change vulnerability. While overall the region appears to have low sensitivity to climate change over the next 30 years, site-specific concerns were identified including the following:

- The presence of deepening ice wedges over time,
- Evidence for permafrost degradation, and,
- The increase in active layer thickness over time.

The proposed storage design does not require leachate containment. Any concerns with the construction of a waste disposal area will be related to strength and containment under a changing climate.

Recommendations for siting include the following:

- Identify a flat area of higher topography, situated away from ephemeral drainage pathways,
- Avoid areas with vegetation,
- Avoid areas with visible frost boils and/or ice wedge formation, and,
- Construct berms and storage pads with larger-grain size material as possible to limit potential storage of water within the stored waste facility, resulting in talik formation.

Additional recommendations for landfill design and construction based on site selection include the following:

- Conduct thermal modeling on the final design to demonstrate both permafrost aggradation and stability over time.
- Limit void space when placing debris, as this may result in landfill cover integrity issues over time (settling, erosion, etc.).
- Use coarse materials for the design cover to mitigate concerns with erosion and settling under a changing climate (i.e., increased precipitation and run-off).

Recommendations for existing WDAs include the following:

- Pull back parts of WDAs that are within 300 m of the coast and re-incorporate waste further from the shoreline,
- Cover the existing WDAs with liner and aggregate for erosion control,
- Contour the surrounding area to promote drainage around and away from the WDAs, and,
- Monitor the thermistors as part of Long-Term Monitoring to evaluate thermal stability.

3.3 Project Description

3.3.1 Project Alternatives

The proposed Project is being driven by Federal Contaminated Site Action Plan program to remediate potential liabilities and legacy contamination. As such, the only alternative is the null or do-nothing approach, which may result in prolonged environmental impacts and continued risk exposure. Maintaining the site in its current state was not considered a viable alternative to the proposed Project.

3.3.1.1 Alternative Means for Carrying out the Project

A remedial options analysis was conducted for each waste stream requiring remediation. The process used to assess and select remedial options was a qualitative, multi-variant criteria decision matrix. This process is useful to arrive at an optimal decision when multiple criteria must be considered. The outcome of such an analysis is a solution which is the best compromise solution for balancing the degree of satisfaction of all (and often competing) considerations. The process was implemented by developing a set of potentially viable management options for each waste stream requiring remediation, including a base case (left as is) option, and evaluating the degree to which each option satisfied each evaluation criteria.

Evaluation criteria were the same for the analysis of options for each waste stream. The evaluation criteria that the options were scored against reflect the overall remediation objectives for the site and remained the constant for the analysis of each waste stream. These criteria are described below:
Reduction of Environmental Risks: This criterion focuses on the reduction of potential environmental risks. It ranks how successful an option is expected to be in reducing potential risks to the receiving environment and uptake by humans or the natural environment. A positive ranking indicates that environmental risk will be very successfully reduced by the option; a neutral ranking indicates that the environmental risk will be somewhat reduced by the option, and an unfavourable ranking indicates that the option likely does not adequately reduce the environmental risk.
Value to Crown: This criterion is a qualitative comparison of overall cost of each option. It considers the overall closure costs (Capital) including one-time and any longer-term monitoring and maintenance (LTM) if the option requires it. As a qualitative score, the evaluation it is not proportional to actual costs. The lowest cost option(s) are scored as favourable and the most expensive score as unfavourable.
Implementation Feasibility: This criterion encompasses the engineering and scientific complexity of each option such as the ability to achieve physical and chemical stability and construction complexity (ease of implementation and minimizing delays). This criterion also considers the remoteness of the Site and that all equipment required for the work will need to be brought on and off-site by air, and that the closest community Resolute Bay is 500 km distant from the Site. Options that require mobilization of significant resources will be ranked as unfavourable. Solutions requiring a moderate mobilization of resources will be ranked neutral and solution with a lower degree of resources required will score favourably. Although cost is somewhat related to resources required, this criterion focuses strictly the

resources required and technical complexity.

Reduction of Environmental Liability: This is considered satisfied when environmental liability can be considered as zero once the option has been implemented. Options which are "walk-away" with no future monitoring requirements are scored as favourable, whereas those with on-going monitoring and maintenance obligations are scored lower (unfavourable). A neutral ranking indicates that the liability has been significantly reduced but not entirely extinguished.

Stakeholder Acceptance: This criterion considers the regulatory aspects associated with obtaining licenses or permits (Nunavut Planning Commission) for the option and the overall acceptance by Nunavut Impact Review Board. This criterion also considers the local economic benefits derived during the remedial work and the long-term benefit from potential future use of the Site by local stakeholders. Local stakeholders are defined as residents of the area who may be employed in the remedial work program. It is important to note that this criterion has been scored from an anticipatory perspective, as the acceptance by regulators and local stakeholder consultation component of this project has been initiated. Stakeholder's opinions on the integrated options for the ROA were presented during a Community Event held in Resolute, NU in January 2025. There are no further anticipated changes to the Remedial Action Plan.

Climate Change Impact & Sustainability: This criterion considers the trade offs between remediation goals/options vs overall environmental sustainability. It considers the assumed greenhouse gas emissions between options with scoring as favourable for the option with the lowest overall CO_2 production.

Options were scored under each evaluation criterion as favourable, neutral or unfavourable, according to the degree to which the criterion was satisfied.

For each waste stream requiring remediation, the following options were considered in the evaluation:

- **Liquid Wastes**
  As noted previously, a quantity of approximately 20,800 L of combustible fuel product previously in drums was incinerated in 2025. Following this incineration process, there remained a residual volume of approximately 5,000 L of non-combustible liquids comprised of hydrocarbons and water that was consolidated in totes for future management during remediation. As well, there was ~1000 L of liquids in eight drums that contained various liquids not suitable for incineration in 2025, including waste oil, antifreeze, or piston oil, and as such, these remaining liquid wastes will require management during remediation.
  - Status quo: Leaving the waste fuel in its current state.
  - On-site Treatment combined with off-site disposal: For the purposes of volume reduction, the residual liquids could be treated on site initially with an oil water separator. The separated hydrocarbons would require off-site disposal. The separated water would be further treated by filtering it through a vessel with granulated activated carbon. Once analytical testing confirmed that the treated water was below the applicable water quality guideline, the treated water could be beneficially reused on site. The most likely method of beneficial reuse would be to apply the

treated water to the aggregates during placement and compaction of fill for the landfill construction. The on-site treatment would require mobilization/demobilization of equipment as well as skilled labour for operation and testing. Following the treatment process, the granulated activated carbon would require analytical testing to confirm it is suitable for disposal at the on-site landfill, and if it was not, it would have to be removed off-site for disposal at a hazardous landfill.

- Removal off-site for disposal: The residual hydrocarbon/water liquids would be containerized and demobilized via aircraft to Resolute Bay and then transported by sealift to an appropriate disposal location near the sealift facility in Bécancour, Quebec. On-site handling would take minimal time (relative to on-site treatment) for transfer of the liquids to appropriate containers, the removal of the waste fuel from the Site for disposal out of the Territory has no technical uncertainty, its movement would be tracked via manifests, and proof of disposal would be documented.

- **Drums (approximately 3,822 drums)**
  Following removal of residual liquids and cleaning, the drums would require volume reduction (crushing) and disposal. In total, there is approximately 950 m^3 of metal waste associated with fuel drums (following crushing) that would require disposal.
- Consolidate on-site: The waste drums would be consolidated in one location at the Site after they had all been emptied and the residual liquids dealt with as recommended in the preceding option.
- Crush, consolidate, and cover at an ideal location with a coarse aggregate cap: A wash pad would be developed where emptied drums would be opened at one end and washed using a steam cleaner. Rinsate would be collected, tested and treated prior to discharge and/or for disposal. The drums would then be crushed to approximately one quarter (25%) of their current volume, using a 55 Gallon Drum crusher or other capable equipment. A crushed volume of 0.06 m^3 per drum can be anticipated. There are approximately 3,800 drums that need to be crushed, after which, they would have a disposal volume of ~250 m^3. There is also a significant number of drums at the Site that have already been crushed with an estimated disposal volume of 700 m^3. Combined, there is an estimated disposal volume of 950 m^3 of crushed drums that will require on-site disposal and covered with a coarse aggregate cap as per the INAC Abandoned Military Sites Remediation Protocol (INAC, 2008).
- Crush, consolidate and place in an on-site engineered landfill: Drums would be processed in the same manner as the above option but placed in an engineered landfill designed with a liner and reduced thickness of aggregate cover.
- Removal off-site for disposal: The drums would be emptied but not cleaned on-site. They would be tested for residual vapours inside using a photo-ionization detector to check for Lower Explosive Levels (LELs), loaded into an aircraft and placed in an over-pack container for spill prevention. The drums would be transported to Resolute Bay for cleaning and crushing and then transported via sealift for disposed outside of the territory.

- **Aboveground Storage Tanks (ASTs)** (approximately 50, ranging in size (910 L to 51,000 L) and shape).
  - Upon removal of residual liquids/sludge, status quo: Any residual liquids or sludge would be collected and containerized for off-site disposal as per selected remedial option. The tanks would be left as is. Note this is not a regulatory compliant option.
  - Cutting the ASTs into manageable pieces, consolidating and covering at an ideal location with a coarse aggregate cap: For this option, residual liquids or sludge would be collected and containerized for off-site disposal. Tanks would be dismantled, consolidated, placed at an ideal location on-site, and covered with crushed aggregate cap as per the INAC Abandoned Military Sites Protocol (INAC, 2008).
  - Cutting the ASTs into manageable pieces, consolidating in an on-site engineered landfill: Residual liquids or sludge would be collected and containerized for off-site disposal and the tanks would be cut into manageable pieces and placed in an engineered landfill as per the INAC Abandoned Military Sites Protocol for Non-hazardous Waste Landfill (INAC, 2008).
  - Cutting into manageable pieces, consolidating and removal off-site for disposal: Prior to disassembly tanks would require cleaning using a pressure washer or steam cleaner. Wash water would be collected, tested and treated prior to discharge and/or for disposal. Disassembled tanks would be loaded into aircraft and flown to Resolute Bay for off-site disposal south via sealift.

- **Building Management (22 abandoned buildings)**
  - Status quo: Leaving some or all of the buildings in their current condition.
  - Status quo with engineered controls: Leaving some or all of the buildings erect on-site but with engineered controls, such as boarding up of building entrances and windows and installing warning signage to alert potential visitors of physical and chemical hazard exposure.
  - Abatement and demolition with both off-site and on-site disposal. Off-site disposal of hazardous waste with on-site burial of non-hazardous waste at a new landfill. Hazardous waste would be abated and removed from the buildings in advance of demolition. Asbestos abated from buildings and properly containerized is not considered hazardous waste and may be disposed of in the on-site landfill with special handling. All other containerized hazardous waste is removed from the Site for off-site disposal. Following abatement, the buildings would be demolished, the volume of the non-hazardous materials would be reduced through crushing or shredding prior to being placed in the on-site non-hazardous landfill. The landfill closure would consist of placing a 1 m crushed aggregate cover as per the INAC Abandoned Military Sites Remediation Protocol (INAC, 2008).
  - Demolition with both off-site and on-site disposal (including liner). This option is similar to the above option, with the addition of a liner incorporated into the landfill cover, and a reduced thickness of aggregate cover.
  - Abatement and demolition with off-site disposal. Hazardous waste abatement and containerization in advance of demolition for off-site disposal. Demolition, collection, and

containerization of non-hazardous inert waste for off-site disposal at a non-hazardous waste landfill in the south.

- **Heavy Equipment**
  - Status quo: Leave non-operating vehicles and equipment as is on site. Abatement and removal of hazardous wastes could be undertaken on vehicles as requested.
  - Abatement consolidating and placement in an on-site landfill with a coarse aggregate cap: The vehicles would be drained of fluids. Hazardous waste fluids removed from the vehicles would be containerized for off-site disposal south via sealift. The volume of the non-hazardous materials would be minimized through crushing or shredding prior to being placed in a landfill and covered with 1 m of crushed aggregate as per the INAC Abandoned Military Sites Remediation Protocol (INAC, 2008).
  - Abatement, consolidate and place in on-site landfill with a liner: Hazardous wastes and consolidation would proceed as per the above option, with the addition of a liner as part of the landfill cover design.
  - Abatement and removal off-site of all waste for disposal: Abatement of the fluids from the vehicles and dismantling as needed for loading all waste into the aircraft for transport to Resolute Bay, followed by off-site disposal south via sealift.

- **Existing Waste Disposal Area (WDA) Closure**
  - Status quo with long-term monitoring: This alternative would involve no physical construction work at the WDAs. Long-term monitoring would occur with thermistor data confirming that the waste material is encapsulated in frozen cover material for the majority of the year, and environmental sampling would be carried out of surface water and sediments hydraulically down-gradient of the WDAs to confirm there are no concentrations of contaminants of concern that could cause an unacceptable risk to receptors.
  - Addition of new cover materials with contouring for drainage and continued monitoring: This alternative would involve placement of a coarse aggregate cover over the entire WDA areas for drainage and erosion protection. Although the assessment results concluded that there is no unacceptable risk of leachate generation and/or impacts to receptors, this alternative includes the use of an impermeable liner (natural or geosynthetic) in areas of concentrated waste, in concentrated areas of buried waste (as determined from geophysical surveys) as an additional protective measure for stakeholder acceptance. The cover would be designed in general accordance with the guidelines for Class C Solid Waste Disposal Areas of the INAC Abandoned Military Sites Remediation Protocol (see Section 5.3 of the protocol) (INAC, 2008).
  - Relocation of wastes to an on-site engineered landfill: This alternative would involve constructing a new Non-hazardous engineered landfill to contain waste materials from all the WDAs, excavating waste material and transporting the waste to an on-site engineered landfill. Based on failed historical attempts, it is not considered practical to sort the waste material from the cover material at the WDAs since this would require excavation during the non-frozen conditions, and under these conditions the fine-grained soil is highly saturated rendering it impractical for equipment to operate and/or to segregate the waste from the cohesive soil. The

timing for excavation of the wastes would therefore have to be during frozen conditions and be completed by ripping with a dozer of adequate size and hydraulic capability. Disturbing the previously encapsulated potentially hazardous material and would create the potential to reintroduce the contaminants to the environment and require additional worker exposure protection against the potential risks.

The options selected for the Project were the highest-ranking options from the multi-criteria decision analysis of each waste stream requiring remediation. The selected options included the following:

- The residual waste fuel/oily water mix from drums and ASTs that is remaining following the 2025 incineration activities would be consolidated into appropriate containers for hazardous waste transport and removed and disposed of off-site at an approved facility.
- Waste fuel drums would be cleaned, crushed, consolidated and placed in a new engineered on-site landfill.
- ASTs will be cleaned, have all residual liquids removed, and be decommissioned. The AST metal would be cut into manageable pieces and be placed in the on-site engineered landfill.
- Abandoned buildings would undergo hazardous material abatement (i.e., mercury, ozone depleting substances) with containerization and off-site disposal of wastes at an approved facility. Asbestos-containing materials (ACMs) would be abated following appropriate procedures for worker safety, double bagged, and disposed of in the new engineered on-site landfill.
- Non-operational and operational Heavy Equipment would be decommissioned by removing hazardous fluids for off-site disposal, consolidating the equipment for waste volume reduction, and disposing of the consolidated non-hazardous waste at the on-site engineered landfill.
- Existing Waste Disposal Areas (WDAs) would be covered with a coarse aggregate cap and contoured to promote drainage while reducing erosion potential. This alternative includes the use of an impermeable liner in concentrated areas of buried waste (as determined from geophysical surveys) as an additional protective measure. The WDAs would be subsequently monitored as part of the Long-Term Monitoring (LTM) to evaluate stability.

The selected remedial options are described in greater detail below in **Section 3.3.3.**

3.3.2 Impacted Soils and Sediment Management

Impacted soils and sediment in exceedance of applicable guidelines were identified, largely in association with AEC 26: East Barrel Dump and East Delta, and West Delta. Contaminants of concern included: PHCs, PAHs, metals and boron. Further risk assessment was then conducted to support the determination of the best management strategy for the impacted soils. The human health risk assessment component of the HHERA was conducted for the Outdoor Site Visitor Scenario. The evaluation of this scenario assumes that a hypothetical person (toddler, adult) visits the site occasionally for recreational or research purposes, for up to 4 weeks per year. The exposure scenario is considered to

be very conservative for the site based on its current use (as the site is outside the range that community members would typically travel) and likely overestimates the time spent on the site by any one individual site visitor. The results of the human health risk assessment suggested negligible potential for human health risk at this site, based on measured site soil concentrations and the potential for exposure to contaminated soils.

The results of the ecological risk assessment component of the HHERA concluded that, based on a weight of evidence approach, the likelihood of potential risk to terrestrial vegetation and soil invertebrate communities, and mammalian wildlife populations on the site is considered to be negligible.

Supported by the conclusions of the HHERA, there does not appear to be a need for corrective action or risk management on the Isachsen HAWS site in relation to impacted soils and sediment remaining on-site, provided that land use does not change in the future, and provided that the remaining sources of the impacts (i.e., hazardous and non-hazardous waste) are removed from the site (NOJV 2023).

The findings from the climate change vulnerability assessment (Dillon Consulting Limited, 2026) do not affect this finding, as the concentrations and receptors reviewed under the HHERA are unchanged.

Therefore, the remediation of impacted soils was not included in the proposed Project activities for the former Isachsen HAWS.

3.3.3 Project Activities

The anticipated activities involved in the site preparation, remediation, and closure phases of the Project at the former Isachsen HAWS site are described in the following sections. The duration of the planned remedial activities is estimated at 942 days and will be completed over three years (with three site mobilizations/demobilizations, not including transportation and disposal of waste out of territory). The Project activities will be completed by a team of approximately twelve workers, not including flight crews. The Project team for the contract is expected to consist of: remedial contractors, one Departmental Representative, one Environmental Compliance & Controls Officer, one on-site Health & Safety Medic, cook and camp facilitators, wildlife monitors, and labourers.

The proposed activities will be implemented in accordance with the applicable protocols and legislation governing these activities, as outlined in **Table 1-1.**

3.3.3.1 Site Preparation

Mobilization and Transportation of Personnel and Equipment

Isachsen HAWS is in a remote location. Transportation to and from the Site would be completed with a variety of aircraft types depending on the size and mass of the cargo. The largest aircraft that is commercially available for such an aircraft mobilization to Isachsen HAWS is the Hercules L-382 that has an internal cargo compartment of 55'(L) x 10'(W) x 9’(H) and a payload of ~43,000 lbs. Project personnel

and equipment will access the site by ATV or by foot, mobilizing from the temporary camp that will be established at the airstrip. During the site preparation, remediation, and closure phases, accommodations in the Hamlet of Resolute will be used by Project personnel.

Equipment and materials required for the Project activities, as well as the non-hazardous waste collected during remediation, will be transported to or from the Project site via aircraft. The removal of relocated wastes from Isachsen to Resolute Bay will be carried out by fixed-wing aircraft. The following equipment is expected to be required for the on-site remedial activities:

- Small equipment required for the Project (e.g., survey equipment, personal protective equipment, metal cutting equipment, hand tools, etc.).
- Heavy Equipment required for the Project (to construct landfills, generate borrow on-site, road maintenance, etc.).

3.3.3.2 Site Remediation

The integrated remedial work plan for Isachsen HAWS is comprised of the highest-ranking options from the multi-variant criteria decision matrix analysis for the waste stream evaluated requiring remediation, which generally consists of disposal of non-hazardous wastes (following abatement and/or special handling) at a new, engineered on-site landfill and removal and off-site disposal of hazardous waste, as described in the following sections.

Drums and Drum Liquid Wastes

The 2025 incineration program was successful in the incineration or off-site beneficial reuse of combustible liquids that were present in the drums at Isachsen. Approximately 5,000 L of oily wastewater and approximately 500 L of liquids (waste/hydraulic oils and antifreeze) was identified that could not be incinerated was collected and containerized for off-site removal and disposal. In addition, four (4) drums marked piston oil contained lead content above the Abandoned Military Site Remediation Protocol (INAC, 2008) guideline for incineration. The remaining 8 drums are presently stored in the New Garage and labelled “HAZ”, “LEAD”, and “Off Site Disposal”. Thirty-four (34) emptied drums and one (1) HDPE plastic IBC tote were used to store the oily wastewater (non-combustible liquids) on-site following incineration best efforts and were consolidated at AEC28. Approximately 6,000 L of oily wastewater (5000 L), piston oil (with lead content, 500 L) and waste oil, anti-freeze (500 L) will be transported off-site for disposal. The preferred remedial option is off-site disposal as liquid hazardous waste. Some volume reduction may be completed by separating and treating the water on-site and disposing off-site the hydrocarbon portion, should this be cost effective for the remedial contractor. The waste will be transported to Resolute via fixed-wing aircraft, where it would then be transferred to sealift and transported for off-site disposal at a facility in the South. Certificates of reception would be obtained for each waste steam at its receiving site and would be included in the Contractor’s attestation of completion.

The preferred remedial option for non-hazardous metal drum waste is on-site disposal in an engineered landfill. There is an estimated 950 m^3 of waste planned for disposal at an on-site landfill which includes 700 m^3 of previously crushed drums/inert metal currently at the Site, as well as approximately 250 m^3 of drums that have to be crushed in advance of disposal. The previously crushed drums are considered non-hazardous and may be transported for disposal in the proposed engineered on-site landfill without any additional processing.

For drums containing waste liquid, prior to disposal at an on-site landfill, the fuel drums would require cleaning to remove any residual liquids and crushing to reduce the size of the drum prior to placement in the landfill. Drum crushing will reduce the volume of 3,822 drums by 75%. A wash pad would be developed where emptied drums would be opened at one end and washed using a steam cleaner. Wash water would be collected, and following completion of the drum cleaning activity, the wash water would be containerized and transported off-site for disposal.

Above-Ground Storage Tanks (ASTs) and AST Liquid Wastes/Residuals

A total of fifty (50) ASTs of various dimensions remains at the Site, either outside or within buildings. The tanks range in shape (cylindrical to cubic) and in size (910 L to 51,000 L). Approximately 55,400 L of waste fuel was stored within the observed ASTs. Following the 2025 incineration program, there remains an estimated 8,000 L of residual non-combustible liquids associated with the ASTs that is comprised of a mixture of hydrocarbon product and water.

Similar to the drummed waste fuel, the preferred remedial option for management of AST liquids and residuals was determined to be on-site incineration with some beneficial re-use based on the listed criteria, as carried out in 2025. The estimated 8,000 L of residual non-combustible liquids associated with the ASTs will require removal from the Site and be managed as liquid hazardous waste.

The preferred remedial option for AST metal waste is to cut it into manageable pieces and to dispose of it in the on-site engineered landfill. Once consolidated, the AST metal will account for approximately 50 m^3 of waste material for disposal in the on-site landfill.

The ASTs will need to be dismantled and/or cut up in a manner that does not result in excessive paint flakes or dust causing an unacceptable impact to the surrounding environment and/or to the workers carrying out the remediation activities. Once the tanks are cut into manageable pieces, they can be transported and placed in the on-site engineered landfill.

Building Demolition and Hazardous Material Abatement

The preferred remedial option for abandoned on-site buildings is abatement and off-site disposal of hazardous waste at a licensed southern facility, followed by structure demolition and disposal of non-hazardous waste in an on-site engineered landfill.

A total of twenty-two (22) abandoned buildings at the Isachsen HAWS will require hazardous material abatement, demolition and appropriate disposal of waste based on whether the resulting waste is classified as hazardous or non-hazardous. Based on the findings of the HBMA and a subsequent field program in 2024, a Building Demolition and Solid Waste Management Plan was produced by NOJV to outline the remediation construction scope related to hazardous and non-hazardous solid waste (NOJV, 2025). Based on the solid waste management plan, remaining hazardous waste associated with on-site buildings was determined to be as follows:

- Asbestos
- Ozone Depleting Substances (ODS)
- Mercury

The preferred remedial option for hazardous waste associated with abandoned buildings is on-site abatement prior to building demolition, and off-site disposal of hazardous waste at a licensed southern facility. The asbestos will require special precautions/handling by workers during abatement, but once properly containerized (i.e., double bagged in UN 2590 rated disposal bags), asbestos is not hazardous and can be designated for on-site disposal at the engineered landfill.

All other hazardous waste will require containerization as per the applicable TDG regulations and must be stored at the designated temporary waste storage area prior to offsite transport. Once removed from the Site, the hazardous waste will require disposal at a licensed southern facility. TDG paperwork and waste disposal certificates for each package of hazardous waste transported off-site is required as a contractor submittal.

The estimated volume of hazardous waste requiring off-site disposal is ~4 m^3.

Following hazardous material abatement in each building, and once the absence of hazardous materials has been confirmed by inspection, demolition of the building structures may commence. Structure demolition will be sequenced along grid lines and between load bearing structures to maintain structural stability of buildings during the demolition process. Burning of clean wood waste is not expected to produce a material cost savings to the project due to the inefficiency associated with separating non-hazardous waste materials during demolition, and therefore it is assumed that the entire volume of clean wood waste will be loaded, hauled and placed in the proposed on-site landfill. The estimated volume of non-hazardous building waste volume that will be landfilled on-site is approximately 3,170 m^3, and comprises of painted wood, metal debris, insulation, flooring, concrete, asphalt sheeting, carpet, etc.

Heavy Equipment and Waste Debris

The existing heavy equipment at the Site is divided into two categories, non-operational heavy equipment (14) and operational heavy equipment (6). The expectation is that operational heavy equipment would be sold to the remediation contractor “as-is” so that it is available as supplemental

equipment for use in executing the remediation construction scope and as a means of reducing the amount of equipment requiring mobilization. Once the existing operational equipment is no longer required for project execution, it would require on-site decommissioning and disposal (or off-site transport at the expense of the contractor if it is to be used beyond the landfill closure timeline). The non-operational equipment is not considered feasible for use for execution of the project, and would be immediately eligible for decommissioning and disposal at the proposed engineered landfill.

Before the non-operational equipment can be treated as a non-hazardous waste, hazardous waste fluids would be removed from the vehicles, contained, stored at the on-site temporary storage area, and removed off-site for disposal at a licensed southern facility. This work includes decommissioning all existing operational and non-operational equipment (i.e., removal of all hazardous waste streams such as waste fuel, filters, any other materials that cannot be disposed at the on-site landfill), transportation and storage of hazardous waste streams designated for off-site disposal at the temporary waste storage area, off-site transport of hazardous waste by aircraft, and disposal of hazardous waste streams at a licensed southern facility.

Following decommissioning of non-operational and operational heavy equipment (i.e., removal of all identified hazardous waste streams), the equipment may be treated as non-hazardous waste and disposed at the on-site engineered landfill. The total volume of non-hazardous waste associated with non-operational and operational heavy equipment is estimated to be approximately 760 m^3.

During the execution of the overall construction remediation scope, the expectation is that the remedial contractor may have the option to utilize equipment at the Site if the contractor takes full responsibility of the equipment. It is expected that the remediation contractor would use the on-site operational heavy equipment as the cost to commission and maintain this equipment is estimated to be much less than the cost associated with mobilization and demobilization of equipment from the south. However, this decision would be at the discretion of the contractor, and it may not be used but rendered non-operational.

Once the operational equipment is no longer needed, the remedial contractor would be responsible for the fate of the equipment. Options for dealing with operational equipment following completion of the overall remediation includes on-site decommissioning and disposal similar to the non-operational heavy equipment, or off-site transport and transfer of ownership. It has been presumed that the operational equipment will be decommissioned and disposed of at the on-site landfill similar to the non-operational heavy equipment.

In addition to the heavy equipment currently available on-site, the remediation contractor will mobilize a fleet of heavy equipment to complete the remediation construction scope of work. The landfill airspace has not been designed to accommodate the disposal of equipment and/or excess materials

mobilized to the Site by the contractor. As such, the remedial contractor will be required to remove from the Site all such equipment and materials at the completion of the remediation project.

Collection of Non-Hazardous Metal Debris

Approximately 100 m^3 of non-hazardous metal and wood debris are present at the Isachsen HAWS site. Any surficial scattered debris not associated with the existing WDAs (i.e., south of the New Garage) will require retrieval and disposal at the proposed on-site engineered landfill. The known scattered miscellaneous non-hazardous debris at the Site requiring relocation at the new WDA includes, but is not limited to, Standout Debris Locations 4, 5, 19 and 20 depicted on **Figure 8**, included as **Appendix A**. Miscellaneous non-hazardous debris also includes the former power poles at the Site, which will require removal from the ground prior to consolidation and on-site disposal. Photos of the miscellaneous scattered debris are included with the Building Demolition and Solid Waste Management Plan, included under separate cover (NOJV, 2025).

Temporary Infrastructure

Temporary infrastructure is required to facilitate the remediation activities, and once remediation is completed, it would be decommissioned prior to contractor demobilization. This includes such items as the borrow pit development area, the contractors camp, among other facilities.

Borrow Area Development and Aggregate Development

During the 2023 and 2024 field investigation completed as part of Environmental Site Assessments (ESAs), NOJV completed intrusive investigations and sampling activities in the vicinity of the preferred borrow source identified by BGC (BGC, 2004). Based on the results from the 2023 and 2024 test pit programs, the proposed borrow area was confirmed to be a suitable source for the production of coarse aggregate material required for the remediation of the Site. A Borrow Pit Development plan was developed by NOJV, included under separate cover, which outlines the findings of the field investigations and provides a roadmap for borrow development and aggregate production (NOJV, 2025). The proposed borrow location and associated aggregate processing area is depicted on **Figure 10**, included as **Appendix A**.

The proposed borrow source is primarily composed of diabase fractured rock of cobble size (64 – 256 mm) at the surface, underlain by overburden soil consisting of sand and gravel with trace silt. There is no topsoil or vegetation in the vicinity of the borrow source. The deposit exists along a slope, and in general, the deposit has a larger relative proportion of cobble-sized material at higher elevations in the borrow area, and tapers out near the bottom of the sloped area to a smaller diameter coarse material (gravel and sand).

The borrow development outlined herein has been designed to satisfy the upper quantity range listed above for these aggregate material types with a total estimated volume requirement of approximately 100,000 m^3. Aggregates would be stockpiled in the aggregate processing area of the borrow

development area.

Following cessation of borrow excavation operations, the Site would be reclaimed by grading the developed pads and stockpile areas to match the adjacent grades. The borrow area is within a well-drained sloped area and as such, surface water drainage is not anticipated to be impacted by the removal of the upper surficial rock and overburden soil. However, some isolated grading and construction of swales is anticipated for overall surface water management within the sloped reclaimed area.

Camp Operation

The remediation contractor will need to install worker accommodations compliant with the Nunavut Workers' Safety and Compensation Commission (WSCC) at the Site throughout the duration of the remediation project. Although most elements of the camp infrastructure will be defined by the successful remedial contractor, this section is intended to define the anticipated scope as the basis for the cost and schedule planning activities to assist Canada in its regulatory and financial management (funding cash flow) responsibilities.

The camp would provide sleeping quarters, dining facilities, hygiene facilities and office workspace and all required heating, electrical, and communications facilities. Prior to installation of the camp facilities, a granular pad will be required using material sourced from the on-site borrow pit. The granular material would consist of a base Type 2 material to provide a stable, clean surface upon which to place the camp facilities, as well as a surface coating of Type 3 material as a suitable surface upon which to walk. The location of the camp is ultimately at the discretion of the remediation contractor, however, for planning purposes, a proposed area has been identified on **Figure 12** in **Appendix A**. The selected camp location will need to consider the challenges associated with the Site, namely items such as ground conditions, access to a viable water source and proximity to the runway (i.e., accommodation cannot be too close to the active runway).

Previous camp operations at the Site have utilized the meltwater ponds north of the runway as a primary water source for non-potable water, but the quantity of water available from the meltwater ponds is heavily weather dependent and likely not sufficient to support the full camp operation for the entirety of the project. Additionally, the meltwater would become frozen during shoulder seasons and throughout the winter, rendering the source unusable. A river also exists approximately 2 km north of the runway, but this source has not been used in recent programs. The current expectation is for the remediation contractor to ensure the camp has facilities that significantly limits water consumption and to utilize the meltwater ponds as a non-potable water source. Potable water would be transported to the Site during regular supply flights.

Domestic garbage and other solid waste resulting from camp operation will be temporarily stored on-site in a containment structure. The structure will be built with sufficient capacity to store camp waste

between supply flights and in a manner that prevents wildlife from accessing the contents. Incineration of domestic wastes will be defined by the contractor.

Any greywater resulting from camp operation would require careful management to limit production/quantity and to segregate wastewater types (grease traps and separation of kitchen grey water from shower grey water). With a very thin active layer (which is typically high in moisture), there is very little water holding capacity for an exfiltration pit/trench. As such, it is anticipated that a pre-packaged water treatment plant will be required for the camps grey water management. Alternatively, a facultative lagoon may be used for treatment and storage of grey water during camp operations, with a land application disposal method for treated water at the completion of each construction season and the cessation of the remediation project and to facilitate decommissioning of the lagoon.

It is anticipated that black water will be managed using Pacto toilets which is a portable toilet specifically designed for remote camps. It does not require connections for electricity, water or to the main sewer system. Instead of water, an environmentally friendly flush foil lining is used to encapsulate waste, avoiding direct contact by the user. The toilet can be used in any weather condition and in any climate. The waste from the Pacto is securely and hygienically double wrapped in a foil made of polyethylene and stored below the toilet for disposal later. The polyethylene bags containing black water would be sealed in 20 L pails and stored in an enclosed facility at camp. The black wastewater could be incinerated on-site, or the 20 L pails containing waste would be removed from the Site during regularly scheduled supply flights and disposed of at the Resolute Bay landfill.

Throughout project execution and camp operation, regular supply flights will be required to transport personnel, supplies and fuel. Based on the weather conditions historically observed at the Site, there is a strong likelihood of periods of adverse weather that would prevent aircraft from accessing or leaving the Site. As such, an adequate contingency of food, water, medication, fuel and spare parts for critical equipment (i.e., generators, furnaces) would be required at all times.

Camp capacity must consider the personnel requirements for the active construction works as well as the management and facility support staff. To fully understand its camp requirements (capacity, duration) for construction workers, a preliminary schedule with estimated resource requirements has been produced. This considers the construction personnel requirements as well as the management and support personnel requirements for each activity (Superintendent, Environmental Compliance & Controls Officer, on-site Health & Safety Medic, Departmental Representative requirements, cook and assistant(s), wildlife monitor, etc.).

Temporary Roads

To access various areas around the Site during remediation, a temporary road network will need to be established to allow for the hauling of aggregate, transport of personnel and transport of waste. It is not considered practical to restrict construction operations and hauling of materials during frozen

conditions, and as such, upgrades to the existing road network, and construction of new haul roads, will be required. The proposed temporary road network for the Project is depicted on **Figure 11**, included in **Appendix A**.

There are three general classifications of temporary roads:

1. New haul road for aggregated transport from the proposed borrow are. The preferred road as depicted on **Figure 11** in **Appendix A** leads from the airstrip to the aggregate processing area and avoids topographic lows and gullies.
2. Upgrades to existing roads (shown as a dashed, light blue line on **Figure 11** in **Appendix A**), leading from the airstrip to the station, as well as upgrades to a short section of existing road leading to the proposed landfill location.
3. Proposed haul road along the airstrip. The edge of the runway is planned for temporary use to haul aggregates as well as to transport wastes to the landfill. The road construction will form part of the airstrip upgrades. There would be no additional aggregates installed and the road would be at the same elevation as the runway, and at the edge of the runway to avoid impacting the runway surface where planes could land. Hauling would not occur when plane traffic is possible. This approach has been used on past projects (gravel hauling for Eureka HAWS improvements in 2020-23) and is considered acceptable during remediation.

The current estimated quantity of aggregate required for temporary road construction is between 8,000 m^3 and 14,000 m^3, depending on the final design requirements and extent of additional contingency granular materials produced for road maintenance during construction.

Temporary Waste Storage Facility

As part of the temporary infrastructure required to complete the remediation, a temporary waste storage facility will be required to store hazardous waste prior to off-site transport. This includes oily wastewater, ozone depleting substances, mercury containing materials, and any other identified hazardous waste encountered on-site or resulting from contractor operations. The temporary storage facility will be a lined structure with a perimeter berm that creates a containment area of adequate capacity for the volume of waste stored. Assuming a 20 m x 20 m temporary waste storage area, the aggregate required to construct the pad and berms is between 200 m^3 and 400 m^3. Following placement of aggregate, a liner would be placed over the entirety of the footprint to prevent any leaks from impacting surface soils. The temporary waste storage facility should be installed near the runway to facilitate aircraft loading. The current proposed temporary storage facility would be located within the area proposed for the Temporary Contractor Facilities depicted on **Figure 12**, included with **Appendix A**, but the final temporary storage location and dimensions will be at the discretion of the remediation contractor.

Permanent Infrastructure

Landfill: As part of the Remedial Options Analysis (NOJV, 2025), on-site landfilling of various waste streams (excluding hazardous waste) was determined to be the preferred approach for the disposal of inert waste generated from the remediation and demolition scope. Based on the waste volume estimates, a total of 4,500 m^3 to 6,200 m^3 of waste will need to be placed in the proposed engineered landfill. This estimate was based on the expected quantities for each waste stream requiring on-site disposal at the proposed engineered landfill as outlined in previous sections. The landfill cap would consist of approximately 0.3 m of Type 3 (10 mm minus) bedding material placed below and 0.15 m Type 3 above a bituminous geomembrane (BGM) liner. The BGM will have a geotextile layer above and below it, for added protection due to the angular nature of the bedding material that will derive from the borrow source (aggregated generated from crushed rock). The landfill will be capped with an additional 0.3m of Type 1 (75 mm mins) coarse cover material for erosion protection.

A number of criteria were established to determine the preferred landfill siting location. The criteria for landfill siting include:

- Infrastructure and Operational Efficiency (i.e., near an existing road to avoid constructing new infrastructure, and in a location that can be easily accessed by waste trucks and aggregate haul trucks. Additionally, proximity to the airstrip would be beneficial for long-term monitoring site visits.
- Permafrost Stability. A significant risk related to landfill siting is the potential disturbance of the thermal regime of the permafrost soil, which could contribute to permafrost thaw and associated differential settlement. The non-hazardous waste landfill will not be subject to significant heat generation (from decomposition of food or similar wastes, etc..), and as such, it is not considered necessary to line the landfill base with rigid insulation to avoid permafrost thaw. The use of insulation could also limit the rise of the permafrost table over time which is not desired. As the permafrost table rises, the waste material will become frozen and will have limited exposure to ice-free water, thereby reducing the potential for leachate generation. Other landfill considerations associated with permafrost stability are as follows:
    - Areas with a shallow active layer are preferred, where there has been a consistent thermal regime over time, based on similar past land use of the area of the landfill footprint. For instance, if half of the landfill is on previously undisturbed ground, and the other half is on disturbed ground (road, building, etc.), then there could be differential settlement as there would be thermal regime changes throughout the landfill area. This will avoid subsidence and disturbance of the engineered landfill cover over the long-term.
    - Due to the likely change to the thermal regime, the selection of a relatively flat site and the avoidance of slopes is preferred, since slump or creep can occur from permafrost thaw in such sloped areas.
    - The footprint area of the landfill should be in an area that does not require excavation since removal of surficial soils would have a significant impact on the

thermal regime and would cause significant trafficability/workability issues as the ice lenses/wedges thaw and the native soil because highly saturated with low bearing capacity. Rather, a gravel pad should be constructed directly atop the existing ground surface to create the landfill base. This will create a suitable travel surface for trucks to deliver waste and will avoid heating of the underlying permafrost and potential thaw.

- Surficial hydrology and environmental protection of surface water features. The site location must avoid surface water features (creeks, low lying drainage areas) and be graded to avoid surface water pooling which can cause permafrost thaw and/or erosion. The selected site is to be at a higher elevation relative to the surrounding area and with positive drainage and/or designed with perimeter drainage features that can redirect surface water around the landfill. As a note, groundwater is not considered to be an important factor of the above criteria (i.e., high/dry ground, no excavation with a well draining gravel pad base) since it will be limited to groundwater that is only present within the active layer. Additionally, the permafrost table is expected to rise up into the landfill over time, and this will be designed with a cover that will limit water infiltration to keep the waste material dry. As such, there is no concern related to migration of contaminants in groundwater.
- Geotechnical properties. Ideally, the landfill would be sited in an area that has coarse-grained (gravel and sand) soil that has much lower field capacity and therefore, less ground ice potential and/or potential for subsidence from permafrost thaw. However, the geotechnical characteristics of the overburden soil are relatively consistent throughout the Isachsen HAWS property where a fine-grained material is observed.
- Regulatory Compliance and Stakeholder Acceptance. The landfill should be situated within federal real property jurisdiction. Additionally, there are no archaeological sites or documented past land use by Indigenous stakeholders within the HAWS federal property based on the Archaeological Impact Assessment and so siting of the landfill within the DFRP property limits would also promote stakeholder acceptance (AECOM, 2024).

Based on the criteria listed above, the ideal location for the proposed engineered landfill was determined to be immediately south of the runway in a central location. The proposed landfill location and dimensions are depicted on **Figures 13** and **14**, included as **Appendix A**.

Airstrip: An assessment of the current airstrip condition was completed by HM Aero consulting in 2023 to determine the capacity of the airstrip in its existing state, and to determine necessary upgrade requirements to facilitate the remediation program (HM Aero, 2023). The assessment determined that in the existing condition of the airstrip, travel should be avoided during the spring melt and preferably only during periods of frozen ground conditions. The assessment outlined the option to build up the airstrip with granular material to improve reliability of runway conditions during unfrozen periods. It is not considered practical to proceed to a full-scale remediation project unless airstrip upgrades are completed to allow air transport during non-frozen conditions. The current assumption is that

0.75 m of aggregate would be sufficient to achieve suitable airstrip conditions. Material would be placed at a specified lift thickness and compacted to a specified level of compaction prior to placement of the subsequent lift. Material would be loaded from the stockpile at the borrow area, hauled along the designated temporary haul road, placed by rock truck, spread using a dozer, and compacted using a smooth drum roller.

Storage Building: Following completion of remedial activities, it is expected that a storage structure would be established adjacent to the runway to store desired equipment and supplies related to the long-term monitoring of the Site. The size, location and type of structure are still undecided.

Existing WDAs: There are two existing WDAs present at the Site, the West WDA and the East WDA. The area of the West WDA is ~16,500 m^2 and the East WDA is ~19,500 m^2. The existing WDAs are susceptibility to erosion which has resulted in the exposure of previously buried wastes. The main consideration for stabilizing the WDAs and implementing a design that will ensure long term stability is ensuring that the cover material is coarse enough to prevent erosion, and graded in a manner that promotes natural drainage without deteriorating the integrity of the WDA cover. As such, the current design assumption is that the entirety of the WDA areas will be covered with 0.4 m of coarse aggregate. It is estimated that approximately 50% of the surface area of the WDAs would benefit from the installation of a BGM as an additional protective measure to limit the infiltration of surface water in these areas of concentrated buried waste. The BGM liner would require 0.15 m of Type 3 (10 mm minus) below and 0.15 m of Type 3 material above as protective bedding material and to protect it from the underlying surface and Rip Rap cap materials. The WDAs would be subsequently monitoring as part of the LTM to evaluate stability. The total area requiring installation of a coarse aggregate cap associated with existing WDAs is approximately 36,000m^2.

3.3.3.3 Site Closure

Following completion of the remediation activities, Project personnel will commence site closure activities, including recontouring (as required) and demobilization.

Site Recontouring

Areas disturbed during site preparation and remediation activities will be recontoured as necessary to a stable profile that blends with the surrounding area and facilitates natural surface drainage patterns and vegetation establishment. Any installed liners (except for the permanent infrastructure) should be removed, and the remaining granular should be regraded to conform with the surrounding topography and to avoid pooling of water since this causes significant disturbance to the underlying permafrost. Any depressions or excavations resulting from building demolition should be backfilled or regraded to prevent pooling water. Similarly, the borrow pit should be graded in a way the prevents significant erosion or pooling water. Heavy equipment and hand tools will be used to recontour disturbed areas as necessary.

Demobilization

Demobilization will involve removing all materials used during Project activities, inspecting the site and removing any remnants of debris, packing materials into appropriate containers for air transport, and departing the Project site. The primary objective of demobilization is to leave the Project site in a condition that is free of hazardous and non-hazardous waste that may pose a risk to human health or ecological receptors, and that will continue to provide suitable habitat for wildlife or future land users in the region.

3.3.4 Project Schedule

The Project schedule is subject to contract award and will be finalized when the contract is awarded, and a Contractor is in place. The estimated start date for the award of the construction contract is March 2027 with an estimated three-year duration with contract close-out expected by March 2030. The proposed Project activities at Isachsen HAWS will be included in the scope of the first contract.

Assuming the Project is tendered as planned, the proposed schedule of milestones for completion of the Project activities is provided in **Table 3-1**.

Table 3-1: Proposed Schedule of Project Milestones for Isachsen HAWS

Milestone	Anticipated Date (initiation – completion)
Preparation of final design, tender specifications, and regulatory support for contract	January 2026 – December 2026
Tender Period and Contract Award	January 2027 – March 2027
Pre-Construction Community Update Meeting	May 2027
Site Preparation, Remediation and Preparation of waste for transportation	April 2027 – August 2029
Transportation of Wastes to the South via Sealift	September 2029
Post-work Community Consultation Meeting	February 2030
Project Close-out with documentation of Final Reception of all Wastes from Project Site	March 2030

3.4 Public Consultation

3.4.1 Community Interviews

Interviews on use of Ellef Ringnes Island and the surrounding region were held with community members in the Hamlet of Resolute, Nunavut in July and August 2021.

While scheduling and conducting the interviews, the current territorial restrictions and vulnerabilities around the COVID-19 pandemic were respected. Two interviews were held with Tony Manik (long time Resolute local and community elder) and Tabitha Mullin (Conservation Officer, Government of Nunavut,

Department of Environment). Additionally, ongoing conversations were held throughout the field investigations with Joadamee Iqaluit, the Wildlife Monitor who worked with the DOJV field personnel during the site visits. A summary of the interviews and conversations is provided in **Table 3-2** below.

Table 3-2: Summary of Resolute Community Interviews and Conversations

Interviewee	Summary of Discussion
Tony Manik	Tony moved to Resolute in 1967. He worked in Freeman's Cove on Bathurst Island during the 1970s as part of an exploratory oil and gas crew. Following that, he worked for the power plant in Resolute for 25 years until his retirement in 2015. Tony indicated that distance is the primary factor in determining where hunting and fishing takes place in the region and would typically only include islands with a shore within 200 km of Resolute. However, Tony did state that once on an island the entirety of said island may be traversed, and so the total distance from Resolute may be greater than 200 km.
Tony Manik (Continued)	Bathurst Island, specifically the southern half of the island, was indicated to be the main caribou hunting island for the community due to its proximity to Resolute. Other animals, such as muskox are hunted when available; bearded and ring seals are hunted when sea ice is present; snow geese in the summer months in Polar Bear Pass, and polar bears are hunted mostly in the spring albeit the season is from September 1 to May 31. Additionally, land locked Arctic char are present and commonly caught in Freeman's Cove. Tony indicated that there is minimal vegetation on many of the islands in the area (including Ellef Ringnes, on which the Project site is located), and so gathering is not very common.

Interviewee	Summary of Discussion
Tabitha Mullin	Tabitha is a Conservation Officer with the GN of Nunavut and was able to provide more detailed information on fishing, hunting, and gathering around Resolute. She affirmed that the majority of activities take place proximate to Resolute. Caribou are hunted where they are found, typically on Bathurst Island, Helene Island, and some smaller unnamed islands. Mid to late August and April are the most common periods for caribou hunting, as this is typically when the meat is best. Caribou are currently hunted on Alexander Island; however, it should be noted that this is due the presence of a Parks Canada camp on-site. Similarly, muskox can be hunted on various islands such as Bathurst Island and Cornwallis Island; however, Tabitha stated that few community members regularly target them for hunting. Polar bears can be hunted by both community members and on sport hunting expeditions. For the latter, sport outfitters must purchase tags from the Hunter and Trappers Organization, who in turn sell them to sport hunters. Ringed and bearded seals are hunted in the spring in many different locations in the region, while harp seals are targeted less commonly. Waterfowl eggs have been historically collected on Brown Island and on various islands within Allen Bay and Belcher Bay. Waterfowl hunting, such as snow geese and brant, is primarily completed on Cornwallis Island and Polar Bear Pass on Bathurst Island. As for fishing, Tabitha indicated that Atlantic salmon are occasionally caught in Allen Bay. Tabitha confirmed that the collection of plants is quite limited; however, mountain sorrel and purple saxifrage are collected from time to time on both Bathurst Island and Cornwallis Island.
Joadamee Iqaluit	Joadamee comes from a long line of local peoples; his mother was a Canadian Ranger, as well as an expert in both guiding and wildlife monitoring and protection services. He was a valuable resource for historical information and current uses of the surrounding areas. While on-site, Joadamee was able to provide confirmation on the identity of flora and fauna observations. In addition, Joadamee affirmed the information provided by the aforementioned interviewees. Joadamee had attempted to arrange for a meeting with his mother during the field program; however, she was away on an expedition during the time, and an interview could not be scheduled.

3.4.2 Other Consultation Activities

A Community Consultation session was held for the residents of Resolute Bay and Grise Fiord, Nunavut The proposed Remediation Plan for the Isachsen HAWS site was presented in Resolute Bay. The session was held on January 29, 2025, from 4 to 6 PM (CST) at ATCO South Camp Inn and was facilitated by representatives from ECCC, PSPC and NOJV and Dillon, who have been providing environmental site assessment and remedial planning services for the project.

The session attracted 20 participants and included a cross-section of community representatives, from Elders through to young people. The facilitators presented the identified wastes and the remediation plan for the Isachsen HAWS site with the visual aid of a slide presentation. Slides were presented in both English and Inuktitut (North Baffin dialect). There was much interest in the plan in the form of questions from the participants which were answered by the facilitators.

A second community consultation occurred again at the end of January 2026 (draft report in progress).

Updates to the presentation included the remedial plans for various waste streams, 2025 waste fuel incineration results, upcoming remedial timelines and procurement requirements for the pending RFP and local Inuit benefit opportunities for the remediation.

The 2025 final community consultation report and presentation have been appended as **Appendix C** to this report. The finalized 2026 community consultation report and presentation will be provided under separate cover.

3.4.3 Future Consultation Activities

Future community meetings will be held for the community of Resolute following completion of site closure activities. A Project closure meeting will be held to provide a summary of work completed and present the final condition of the Project site.

3.5 Description of Existing Environment

3.5.1 Atmospheric Environment

3.5.1.1 Climate

A review of available meteorological data (i.e., climate normals for temperature and precipitation from 1981-2010) from ECCC Canadian Climate normal dataset (ECCC 2023) was reviewed. The nearest climate station to the Project is the Resolute station (ID: 2403500; 67.7 masl), which is located approximately 500 km southeast of Isachsen HAWS, in the community of Resolute.

According to the data provided in the ECCC dataset for the Resolute climate station, the annual mean daily temperature between 1981 and 2010 is -15.7°C, with daily mean temperatures ranging from -32.4°C (February) to 4.5°C (July). The daily maximum temperatures range from -29.0°C (February) to 7.3°C (July), while the daily minimum temperatures range from -35.8°C (February) to 1.7°C (July). Extreme temperatures range from -52.2°C (recorded on January 7, 1966) to 18.5°C (recorded on July 11, 2008). On average, the annual precipitation accumulation at the Resolute climate station is 161.2 millimetres (mm), with snow cover typically extending from September until June, and rainfall dominating in July and August. A summary of the climate normals recorded at the Resolute climate station is provided in **Table 3-3**.

Table 3-3: Canadian Climate Normals Summary for Resolute, Nunavut from 1981 to 2010

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Daily Average Temperature (°C)	-32.0	-32.4	-30.2	-21.8	-10.3	0.4	4.5	2.0	-4.1	-13.4	-22.7	-27.9	-15.7
Daily Maximum (°C)	-28.6	-29.0	-26.8	-18.3	-7.4	2.6	7.3	4.2	-2.0	-10.5	-19.5	-24.5	-12.7
Daily Minimum (°C)	-35.3	-35.8	-33.6	-25.3	-13.3	-1.9	1.7	-0.3	-6.1	-16.4	-25.9	31.3	-18.6
Rainfall (mm)	0.0	0.0	0.0	0.0	0.5	7.2	23.2	23.2	4.8	0.5	0.0	0.0	59.5
Snowfall (cm)	4.8	4.3	7.9	6.8	9.9	7.7	4.6	10.9	18.7	18.9	10.2	6.6	111.2
Precipitation (mm)	4.2	3.9	7.4	6.7	8.7	14.6	28.1	33.8	22.6	16.0	9.6	5.7	161.2

Notes:
Source: ECCC (2023).

3.5.1.2 Air Quality

No observations or measurements of air quality data are available for the Isachsen HAWS site. As such, data for the Territory of Nunavut were used to characterize the existing air quality conditions for the Project. The ECCC Air Pollutant Emission Inventory Report 2023 (ECCC 2025) was reviewed, and emissions data were collected for 2023 for Nunavut and Canada, to compare territorial air emissions against national air emissions. A summary of the 2023 air pollutant emissions data is provided below in **Table 3-4**.

Table 3-4: 2023 Nunavut and Canada Air Pollutant Emissions

Contaminant (tonnes)	Nunavut	Canada
Total particulate matter (TPM)	152,784	26,804,217
Particulate matter ≤10 µm diameter (PM_{10})	28,548	8,171,872
Particulate matter ≤25 µm diameter (PM_{25})	4,273	1,369,784
Sulphur oxides (SO_x)	184	608,123
Nitrogen oxides (NO_x)	11,004	1,227,825
Volatile Organic Compounds (VOCs)	925	1,367,848
Carbon Monoxide (CO)	6,122	4,517,816
Ammonia (NH_3)	4.9	494,678

Notes:
Source: ECCC (2025).

Based on the data provided above, air emissions in Nunavut account for a very small amount of the total air emissions recorded across Canada in 2023.

3.5.2 Physical Environment

3.5.2.1 Geomorphology

The Isachsen HAWS site is within the Sverdrup Islands Lowland Ecoregion, which is part of the Northern Arctic Ecozone and is comprised of the Sverdrup Islands group (i.e., Prince Patrick Island, Mackenzie King Island, Borden Island, Ellef Ringnes Island, Amund Ringnes Island, Lougheed Island, and several smaller islands; Wiken et al. 2011). The Sverdrup Islands Lowland Ecoregion is characterized by a rolling to hilly terrain, with coastal lowlands rising to hills and plateaus that reach up to 425 masl.

The main station area of the Isachsen HAWS has a total area of approximately 1.5 km^2 and is located on the west side of Ellef Ringnes Island, a part of the Sverdrup Island Group located west of Ellesmere Island, in Nunavut. Topography at the site is relatively flat, and slopes very gently to the west and northwest towards the Arctic Ocean. The nearest shoreline of the Arctic Ocean is approximately 100 m to the south of the site boundary.

3.5.2.2 Bedrock and Surficial Geology

In the plains area of Ellef Ringnes Island (where Isachsen HAWS and the airstrip reside), shale is the dominant rock, with minor amounts of limestone and poorly consolidated sandstone. The Site geology is comprised of bedrock consisting of shale, siltstone, minor sandstone, and includes local fine-to-coarse grained and pebbly sandstones. Surficial deposits include: sand, silt, clay, gravely; undivided alluvium, colluvium and marine deposits (Evenchick and Embry,2012). Site soil consists of fine-grained silty sand to silt with sand soils and no visible rock outcrops (Dillon-Outcome, 2023). The site soil had little variation over its spatial extent. Refusal at the bottom of test pits were caused by frozen materials or fractured bedrock. The native overburden layer was estimated to be 2.4 – 6.0 m thick and is comprised of silty clay overlaying gravel overlaying bedrock in the Site vicinity. The mature, stream dissected plains have an average elevation of about 122 m. The surface is undulating with a local relief of 46 m, but only a few of the numerous streams that form a dendritic drainage pattern have eroded valleys to that depth (Heywood, 1957).

3.5.2.3 Hydrology and Hydrogeology

Isachsen HAWS is located within the Sverdrup Islands Watershed (Nunavut Planning Commission, 2024). The site is located in an area with continuous permafrost; therefore, any permafrost at the bottom of the active layer would act as a barrier below the groundwater table. Groundwater and infiltrating

surface water would be expected to follow the local contours of the permafrost (and/or bedrock in areas of shallow overburden) towards low-lying areas. A site visit confirmed the permafrost layer to be between 0 (at surface) and 1.5 mbgs (DOJV, 2023). As the covering snow melted, the soil at ground-level was completely saturated.

The streams of Ellef Ringnes Island flow for only a short period of the year. Flow usually commences in early June, reaches a maximum in mid-July and gradually decreases until freeze-up in late August. The small streams are completely dry within a few days after the first heavy frosts in the fall, and the larger streams diminish to mere trickles.

3.5.2.4 Soils

Within the Sverdrup Islands Lowland Ecoregion, Regosolic Static and Orthic Turbic Cryosols are the dominant soils, which have developed on morainal, colluvial, alluvial, and marine deposits. Soils are underlain by deep, continuous permafrost with medium ice content throughout the ecoregion (Wiken et al. 2011).

Soils were sampled at the Isachsen HAWS site during the field program for the Phase III ESA to identify and delineate areas of potential contamination and to assess locations for potential borrow areas. The soil texture through was considered to be silty sand to silt with sand. There was no organic material observed at any location sampled. The soil composition had little variation over the extent of the Site, or within the Disturbed Areas. Soil grain analyses indicated the overall site has fine-grained soils (NOJV, 2025).

3.5.3 Biological Environment

3.5.3.1 Aquatic Resources

No freshwater aquatic systems that could support freshwater aquatic life were observed on-site.

The Isachsen HAWS site is located approximately 100 m from the shore of Louise Bay to the south. Marine receptors along the shoreline of Louise Bay were considered under the ERA.

Based on predicted tides and water level data published by the Canadian Hydrographic Service (2022), the predicted mean tidal range at the Isachsen station (Station ID: 06910; 78.780055° N, 103.507806° W) is between 0 and 0.5 m.

3.5.3.2 Fish and Fish Habitat

The Canadian Arctic waters support 221 marine fish species and 42 freshwater fish species (Alfonso et al. 2018). Waters within the High Arctic Archipelago, north of 75° N latitude (in which the Isachsen site is located), provide habitat for 24 marine and amphidromous (i.e., migrating between freshwater and marine water) fish species. Freshwater forms of two of these species (i.e., landlocked Arctic char

[*Salvelinus alpinus*] and fourhorn sculpin [*Myoxocephalus quadricornis*] may also occur in suitable freshwater habitat within the High Arctic Archipelago (Reist 1997; Conservation of Arctic Flora and Fauna 2013).

Available fisheries information for the marine environment nearest the Isachsen site is limited. According to the Distributional Records for Marine Fishes of Arctic Canada (Alfonso et al. 2018), six fish species have been previously documented near Isachsen HAWS, which are included below in **Table 3-5**. No fish species at risk, as designated under the SARA (Government of Canada 2002) or the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) have been previously recorded in the vicinity of the Isachsen HAWS site. Further, no freshwater habitat suitable to support fish populations was identified in the vicinity of the site.

Table 3-5: Fish Species with Potential to Occur in the Isachsen HAWS Site Region

Common Name	Scientific Name	SARA Ranking	COSEWIC Ranking
Arctic cod	*Boreogadus saida*	-	-
Fourhorn Sculpin	*Myoxocephalus quadricornis*	-	-
Gelatinous Seasnail	*Liparis fabricii*	-	-
Polar Cod	*Arctogadus glacialis*	-	-
Spatulate Sculpin	*Icelus spatula*	-	-
Twohorn Sculpin	*Icelus bicornis*	-	-

Notes:
SARA – *Species at Risk Act* (Government of Canada 2002)
COSEWIC – Committee on the Status of Endangered Wildlife in Canada
Source: Alfonso et al. (2018).

3.5.3.3 Vegetation

The Isachsen HAWS site is characterized by discontinuous patches of stunted vegetation, which is typical of the Sverdrup Islands Lowland Ecoregion. Plant species are perennial, due to the limited germination period during brief summer in the High Arctic. Only species that have adapted to harsh conditions are able to survive the permafrost, nutrient poor soils, and strong winds in this ecoregion. Mosses and lichen thrive in this ecosystem, while vascular plant communities are limited to wetter areas, and include graminoid species, such as sedges and Arctic cottongrass (*Eriphorum callitrix*). Forbs and shrubs such as purple saxifrage and Arctic willow, respectively, occur more infrequently.

The 2023 field visit revealed that the land cover at the Isachsen HAWS site had limited vegetative growth. No plant species at risk or species of conservation concern were identified in the vicinity of the Isachsen HAWS site.

3.5.3.4 Wildlife and Wildlife Habitat

The Northern Arctic Ecozone's extreme climate, poorly developed soils, and limited vegetation communities are reflected in the relatively low wildlife species diversity and abundance, compared to more southerly ecozones. Wildlife species that thrive in this ecozone are those that have adapted to survive under such extreme conditions.

Within the Territory of Nunavut, an estimated 34 species of mammals, 278 species of birds, and 2 species of amphibians are known or expected to occur (Canadian Endangered Species Conservation Council 2016). No reptile species are known to occur naturally in Nunavut (Canadian Amphibian and Reptile Conservation Network, 2012).

Terrestrial Mammals

Seven terrestrial mammal species are known or have potential to occur on Lougheed Island in the vicinity of the Isachsen HAWS site (Anand-Wheeler 2002). These species, including their SARA, COSEWIC, and territorial rankings, are provided in **Table 3-6**.

Table 3-6: Terrestrial Mammal Species Known or Expected to Occur within the Isachsen HAWS Area

Common Name	Scientific Name	SARA Ranking	COSEWIC Ranking	Territorial Ranking[1]
Arctic grey wolf	*Canis lupis arctos*	-	Data deficient	Secure
Peary land collared lemming	*Dicrostonyx groenlandicus*	-	-	Secure
Arctic hare	*Lepus arcticus*	-	-	Secure
Ermine	*Mustela erminea*	-	-	Secure
Muskox	*Ovibus moschatus*	-	-	Apparently Secure
Peary caribou	*Rangifer tarandus pearyi*	Threatened	Threatened	Apparently Secure
Arctic fox	*Vulpes lagopus*	-	-	Apparently Secure

Notes:
SARA – *Species at Risk Act* (Government of Canada 2002)
COSEWIC – Committee on the Status of Endangered Wildlife in Canada
[1] Canadian Endangered Species Conservation Council 2016.

Peary caribou, snow buntings, ptarmigan, and gulls have been observed during visits to the site. Tracks of polar bears and Arctic wolves were also observed and documented. Tracks were observed scattered throughout the Site as well as the surrounding landscape (NOJV, 2025).

Marine Mammals

The Prince Gustaf Adolf Sea is to the west of the site and opens to the Arctic Ocean to the north. The known ranges of only two marine mammal species overlap these waters. The relatively low diversity of marine mammals in water surrounding Ellef Ringnes Island is likely due to the nearly year-round persistence of sea ice within the channel (Oceans North Conservation Society 2018).

The marine mammal species known, expected, or with potential to occur in waters near the Isachsen HAWS site are listed in **Table 3-7**.

Table 3-7: Marine Mammal Species Known, Expected or with Potential to Occur in the Isachsen HAWS Area

Common Name	Scientific Name	SARA Ranking	COSEWIC Ranking	Territorial Ranking[1]
Species known or expected to occur				
Ringed seal	*Pusa hispida*	-	Special Concern	-
Polar bear	*Ursos maritimus*	Special Concern	Special Concern	Vulnerable

Notes:
SARA – *Species at Risk Act* (Government of Canada 2002)
COSEWIC – Committee on the Status of Endangered Wildlife in Canada
[1] Canadian Endangered Species Conservation Council 2016.

No marine mammals (or their sign) were observed during the 2024 site visit, or more recent site visits.

Birds

An estimated 13 avian species have been previously documented or have ranges that overlap with the Isachsen HAWS site; however, the majority of these species are migratory, and are likely only to occur during the breeding or migration periods. These species, including their SARA, COSEWIC, and territorial rankings, are provided in **Table 3-8**.

Table 3-8: Avian Species Known or Expected to Occur in the Isachsen HAWS Site Area

Common Name	Scientific Name	SARA Ranking	COSEWIC Ranking	Territorial Ranking[1]
Snowy Owl	*Bubo scandiacus*	-	-	Apparently Secure
Rough-legged Hawk	*Buteo lagopus*	-	Not at Risk	Unrankable
Baird's Sandpiper	*Calidris bairdii*	-	-	Secure
Red Knot	*Calidris canutus*	Special Concern	Not at Risk	Imperiled
Long-tailed Duck	*Clangula hyemalis*	-	-	Apparently Secure
Common Raven	*Corvus corax*	-	-	Secure
Red-throated Loon	*Gavia stellata*	-	-	Apparently Secure
Rock Ptarmigan	*Lagopus muta*	-	-	Secure
Glaucous Gull	*Larus hyperboreus*	-	-	Apparently Secure
Ivory Gull	*Pagophila eburnea*	Endangered	Endangered	Critically Imperiled
Snow Bunting	*Plectrophenax nivalis*	-	-	Vulnerable
King Eider	*Somateria spectabilis*	-	-	Vulnerable
Long-tailed Jaeger	*Stercorarius longicaudus*	-	-	Secure

Notes:
SARA – *Species at Risk Act* (Government of Canada 2002)
COSEWIC – Committee on the Status of Endangered Wildlife in Canada
[1] Canadian Endangered Species Conservation Council 2016.

During the 2024 field visit, DOJV personnel identified avian footprints around depressions with standing water, as well as on the mounds of the disturbed areas of the site. As no aquatic or terrestrial vegetation, or insects or other invertebrates were observed in site media, it is unlikely that the site provides habitat or food resources for avian visitors.

Species at Risk

For the purposes of this EIA, wildlife species at risk are defined as species listed under Schedule 1 of the SARA and/or COSEWIC as *endangered, threatened, or special* concern (Government of Canada 2023). Existing information from federal, territorial and citizen-science databases were reviewed to determine known occurrences of wildlife species at risk, as well as their life history requirements, and habitat available in the Isachsen HAWS site area.

The following data sources were reviewed:

- Active COSEWIC status reports (Government of Canada 2024);
- Species at Risk Public Registry recovery strategies and actions plans (Government of Canada 2024);
- Publicly available interactive maps provided by the Nunavut Planning Commission (2021); and,
- The Cornell Lab of Ornithology online database (Cornell Lab of Ornithology 2024).

In addition to the above sources, information provided by local community members during consultation activities in Resolute was considered in determining the wildlife species at risk with potential to occur in the Isachsen HAWS site area. A list of these species is provided in **Table 3-9**.

Table 3-9: Wildlife Species at Risk with Potential to Occur in the Isachsen HAWS area

Common Name	Scientific Name	SARA Ranking	COSEWIC Ranking	Territorial Ranking[1]
Terrestrial Mammals				
Peary caribou	*Rangifer tarandus pearyi*	Endangered	Threatened	Apparently Secure
Marine Mammals				
Polar bear	*Ursos maritimus*	Special Concern	Special Concern	Vulnerable
Ringed seal	*Pusa hispida*	-	Special Concern	Secure
Birds				
Ivory Gull	*Pagophila eburnea*	Endangered	Endangered	Critically Imperiled
Red Knot	*Calidris canutus*	Special Concern	Not at Risk	Imperiled

Notes:
SARA – *Species at Risk Act* (Government of Canada 2002)
COSEWIC – Committee on the Status of Endangered Wildlife in Canada
[1] Canadian Endangered Species Conservation Council 2016.

No evidence for species at risk were observed at the Isachsen HAWS site in 2024 or more recent site visits.

3.5.3.5 Protected Areas

The Isachsen HAWS site is located on lands identified with a Mixed-Use designation in the Nunavut Planning Commission Land Use Plan (Nunavut Planning Commission, 2021). Mixed Use areas are not subject to any prohibited uses or conformity requirements under the Land Use Plan. The site is not located within any designated protected areas. Further, there are no designated protected areas within 10 km of the Isachsen HAWS site. No protected areas exist in the region between 10 km and 30 km from the site.

3.5.4 Socio-Economic and Cultural Environment

3.5.4.1 Population

The Isachsen HAWS site is located approximately 500 km northwest of the Hamlet of Resolute, within the Qikiqtaaluk Region of Nunavut. Resolute is the second most northern community in Nunavut, located on the southern tip of Cornwallis Island.

According to the Statistics Canada 2021 census (Statistics Canada 2021), the population of Resolute in 2021 was approximately 183. Of this population, 48.7% identify as female and 51.3% identify as male. The current population is relatively young, with the average age of the population being 30.6 years.

3.5.4.2 Land Use

The High Arctic has a long history of human land use, with evidence of human inhabitants dating back perhaps 5,000 years from present. Traditional land uses related directly to a lifestyle based on subsistence, with local populations moving in response to the seasons and resource availability. These traditional land uses (e.g., fishing, hunting, trapping, gathering) have persisted, and continue to be the dominant land use throughout the High Arctic. However, based on information provided during consultation with community members local Resolute members, traditional land use activities are typically limited to islands with a shore within 200 km of Resolute. The Project site is approximately 500 km from the community via aircraft; as such, the site has a low potential to be used or occupied by humans for any land uses.

According to the 2004 Nunavut Wildlife Harvest Study (Nunavut Wildlife Management Board [NWMB] 2004), the species typically harvested by residents of Resolute between 1996 and 2001 included ringed seal, bearded seal, ptarmigan, beluga, and Arctic char. Arctic char and ringed seal comprised the largest components of the harvest and were harvested by the highest number of hunters (i.e., an average of 741 Arctic char were harvested by 50 hunters, and 562 ringed seal were harvested by 52 hunters annually).

Aside from traditional land uses, other land use activities conducted in the region have included mineral extraction, oil and gas exploration, scientific research programs, as well as adventure tourism. The Cape Isachsen site located 75 km to the northwest of Isachsen HAWS is a former oil and gas exploration site.

3.5.4.3 Employment and Economy

Employment and economy in Resolute are typical of remote northern communities, comprising a mixed economy based on traditional land use activities (e.g., fishing, hunting, trapping, gathering), and a variety of wage-based occupations. These wage-based occupations predominately included sales and service occupations; trades, transport and equipment operators, and related occupations; and occupations in education, law, and social, community and government services.

Employment information was not available from the 2021 Census; however, according to the 2016 Census (Statistics Canada 2016), the employment rate in Resolute was 53.8%.

3.5.4.4 Heritage Resources and Culturally Significant Areas

An Archaeological Impact Assessment (AIA) was completed by AECOM at the Project site in 2024. The assessment consisted of a record review to identify previously recorded archaeological sites within proximity to the Project site, a ground reconnaissance to confirm the presence of previously recorded sites and to document any previously unrecorded sites, an evaluation of each archaeological site, and an impact assessment to assess the potential impacts of the proposed Project activities on the identified archaeological sites, as well as recommend specific measures to mitigate these potential effects. During the ground reconnaissance at the Project site, a larger area was searched for archaeological features, including a buffer area to account for the potential use of borrow materials for the remedial activities.

AECOM prepared an AIA report for the Project in November 2024, in which the findings from the 2024 assessment were discussed. The report indicated that there were no archaeological sites identified within the proposed Project footprint, or within a 100 m buffer zone around the project area.

3.6 Environmental Assessment

3.6.1 Valued Ecological and Socio-Economic Components

In consideration of the selection process described in **Section 2.1**, the VECs and VSCs selected for the assessment of Project activities at the Isachsen HAWS site include:

- Climate and Air Quality;
- Geomorphology;
- Hydrology and Hydrogeology;
- Soils;
- Aquatic Resources;
- Vegetation;
- Wildlife and Wildlife Habitat;
- Land Use;
- Heritage Resources and Culturally Important Areas;
- Employment and Economy; and,
- Community Services.

3.6.2 Identification of Project-Environment Interactions

A summary of the interactions identified between the specific Project activities on each VEC/VSC is provided in **Table 3-10**. Where interactions between the proposed Project activities and a VEC/VSC are identified, the potential effects of these interactions are discussed in subsequent sections. Where no interactions are identified between the proposed Project activities and a VEC/VSC, there are can be no potential effects; therefore, this VEC/VSC is not carried forward for further assessment. We note here that Site Remediation Activity "On-site Disposal of Waste" incorporates both the development of the quarry for borrow material, and the construction of the engineered landfill for on-site waste storage.

Table 3-10: Project Interaction Matrix for the Isachsen HAWS Site

VEC or VSC	Project Activities									
	Site Preparation			Site Remediation				Closure		
	Mobilization and Transportation of Personnel and Equipment	ASTs, AST/Drum Liquid Waste/Waste Fuel Management	On-site Building Demolition	Heavy Equipment and Waste Debris	Collection of Non-Hazardous Debris	Off-Site Transportation and Disposal of Waste	On-Site Disposal of Waste	Site Recontouring and Natural Revegetation	Demobilization	Long-Term Monitoring
Climate and Air Quality	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Geomorphology				✓	✓	✓	✓	✓		
Hydrology and Hydrogeology	✓	✓		✓	✓	✓	✓	✓	✓	✓
Soils	✓	✓		✓	✓	✓	✓	✓	✓	✓
Aquatic Resources and Fish and Fish Habitat										
Vegetation	✓	✓		✓	✓	✓	✓	✓	✓	✓
Wildlife and Wildlife Habitat	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Land Use										
Heritage Resources and Culturally Important Areas										
Employment and Economy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Community Services	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

3.6.3 Potential Effects, Proposed Mitigation and Residual Effects

The assessment of potential effects of the interactions with each VEC/VSC, as identified in **Table 3-10** are provided in **Sections 3.6.3.1** to **3.6.3.9.**

3.6.3.1 Effects and Mitigation on Climate and Air Quality

Table 3-11: Assessment of Effects on Climate

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Site Preparation		• Equipment used for the Project will be kept in good working order and maintained regularly to limit emissions. • Best practices will be implemented for equipment operation to reduce idling time.	Direction: Adverse Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: High Reversibility: Reversible	Adverse effects of the Project on climate are associated with all phases of the Project. Project activities will result in increased emissions of greenhouse gases due to combustion of fuel during equipment operation. However, with application of the identified mitigation measures, the residual effects of the Project on climate are considered not significant.
Mobilization and Transportation of Personnel and Equipment	Greenhouse gas emissions from equipment operation.			
Site Remediation		• Equipment used for the Project will be kept in good working order and maintained regularly to limit emissions. • Best practices will be implemented for equipment operation to reduce idling time.		
ASTs, AST/Drum Liquid Waste/Waste Fuel Management	Greenhouse gas emissions from equipment operation.			
On-Site Building Demolition				
Heavy Equipment and Waste Debris				
Collection of Non-Hazardous Debris				
Off-Site Transportation and Disposal of Waste				
On-Site Disposal of Waste				
Site Closure		• Equipment used for the Project will be kept in good working order and maintained regularly to limit emissions. • Best practices will be implemented for equipment operation to reduce idling time.		
Site Recontouring and Natural Revegetation	Greenhouse gas emissions from equipment operation.			
Demobilization				
Long-Term Monitoring				

3.6.3.2 Effects and Mitigation on Air Quality

Table 3-12: Assessment of Effects on Air Quality

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Site Preparation		• Equipment used for the Project will be kept in good working order and maintained regularly to limit emissions. • Best practices will be implemented for equipment operation to reduce idling time.	Direction: Adverse Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: High Reversibility: Reversible	Adverse effects of the Project on air quality are associated with all phases of the Project. Project activities will result in increased air emissions due to combustion of fuel during equipment operation. With application of the identified mitigation measures, the residual effects of the Project on air quality are considered not significant.
Mobilization and Transportation of Personnel and Equipment	Exhaust emissions from equipment operation.			
Site Remediation		• Equipment used for the Project will be kept in good working order and maintained regularly to limit emissions. • Best practices will be implemented for equipment operation to reduce idling time. • Waste fuel containers will be left sealed unless they are being transferred to new containers prior to off-site transportation.		
ASTs, AST/Drum Liquid Waste/Waste Fuel Management	Exhaust emissions from equipment operation and volatilization of PHC vapors when packaging waste fuel.			
On-Site Building Demolition				
Heavy Equipment and Waste Debris				
Collection of Non-Hazardous Debris				
Off-Site Transportation and Disposal of Waste				
On-Site Disposal of Waste				
Site Closure		• Equipment used for the Project will be kept in good working order and maintained regularly to limit emissions. • Best practices will be implemented for equipment operation to reduce idling time.		
Site Recontouring and Natural Revegetation	Exhaust emissions from equipment operation.			
Demobilization				
Long-Term Monitoring				

3.6.3.3 Effects and Mitigation on Geomorphology

Table 3-13: Assessment of Effects on Geomorphology

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Site Remediation		• Large and heavy lengths of wood and metal debris will be collected and handled so that they do not create gouges or otherwise excessively disturb the surface while preparation for consolidation or removal from site. • Where large pieces of debris are partially subsided into the soil and must be dug out, soil will be temporarily stockpiled in areas outside of natural drainage patterns, to reduce the potential for erosion and sediment transfer.	No residual effects are expected.	Adverse effects of the Project on geomorphology are associated with the collection and consolidation of debris during site remediation and site recontouring during closure. However, if proper material handling techniques are followed, and the Project area is recontoured to a stable profile that blends with the surrounding landscape, no residual effects are expected. Therefore, any potential effects of the Project on geomorphology are considered not significant.
Heavy Equipment and Waste Debris	Moving large and/or heavy lengths of wood and metal debris could result in localized changes to the surface expression on the landscape, leading to increased erosion sensitivity and changes to natural drainage patterns.			
Collection of Non-Hazardous Debris				
Off-Site Transportation and Disposal of Waste				
On-Site Disposal of Waste				
Site Closure		• Disturbed areas will be recontoured to match pre-disturbance conditions as closely as possible and allow unimpeded flow of surface runoff along natural drainage patterns.		
Site Recontouring and Natural Revegetation	Site recontouring activities could result in increased erosion sensitivity and changes to natural drainage patterns.			

3.6.3.4 Effects and Mitigation on Hydrology and Hydrogeology

Table 3-14: Assessment of Effects on Hydrology and Hydrogeology

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Site Preparation		• A Spill Contingency Plan will be developed and implemented during all phases of the Project. • Spill response materials and equipment will be kept on-site at all times during Project activities. • Equipment will be regularly inspected for leaks throughout the duration of the Project. • Spills will be promptly contained and remediated when detected.	Direction: Adverse Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: Low Reversibility: Reversible	Adverse effects of the Project on hydrology and hydrogeology are possible during all phases of the Project due to the risk of spills and sedimentation events. Surface and groundwater impacts could occur from improper storage, use, and transportation of fuel and hazardous waste, and refuelling/maintenance of equipment. In addition, soil disturbance during site preparation and closure activities could alter natural surface drainage patterns within the Project site. With application of the identified mitigation measures and implementation of management plans, and through compliance with the applicable legislative requirements, the residual effects of the Project on hydrology and hydrogeology are considered not significant. Once completed, the Project is expected to result in positive long-term effects on the hydrology and hydrogeology at site, as all the sources of contamination will be removed from the site, and no risk of spills will remain on-site.
Mobilization and Transportation of Personnel and Equipment	Surface water and groundwater could be affected by accidental spills during transport of materials to the Project, or equipment operation during site preparation			
Site Remediation		• A Spill Contingency Plan will be developed and implemented during all phases of the Project. • Spill response materials and equipment will be kept on-site at all times during Project activities. • Equipment will be regularly inspected for leaks throughout the duration of the Project. • Spills will be promptly contained and remediated when detected.	Direction: Adverse / Positive upon completion of remediation activities Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: Low Reversibility: Reversible	
Heavy Equipment and Waste Debris	Surface water and groundwater could be affected by accidental spills when refuelling and servicing equipment			
Collection of Non-Hazardous Debris				
Off-Site Transportation and Disposal of Waste	Surface water and groundwater could be affected while removing or transporting hazardous waste materials			
On-Site Disposal of Waste				
Site Closure		• Disturbed areas (i.e., incineration pad, engineered landfill, WDAs, borrow pit) will be recontoured to match the topography of the surrounding landscape, to allow for unimpeded flow of surface runoff along natural drainage patterns.	No residual effects are anticipated.	
Site Recontouring and Natural Revegetation	Improper site recontouring could affect natural surface drainage patterns within the Project site.			
Demobilization	Surface water and groundwater could be affected by accidental spills during transport of materials from the Project.	• A Spill Contingency Plan will be developed and implemented during all phases of the Project. • Spill response materials and equipment will be kept on-site at all times during Project activities. • Equipment will be regularly inspected for leaks throughout the duration of the Project. • Spills will be promptly contained and remediated when detected.	Direction: Adverse Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: Low Reversibility: Reversible	
Long-Term Monitoring				

3.6.3.5 Effects and Mitigation on Soils

Table 3-15: Assessment of Effects on Soils

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Site Preparation		• A Spill Contingency Plan will be developed and implemented during all phases of the Project. • Spill response materials and equipment will be kept on-site at all times during Project activities. • Equipment will be regularly inspected for leaks throughout the duration of the Project. • Spills will be promptly contained and remediated when detected. • All hazardous materials will be transported in accordance with regulatory requirements under the *Transportation of Dangerous Goods Act* (Government of Canada 1992).	Direction: Adverse Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: Low Reversibility: Reversible	Adverse effects of the Project on soil are possible during all phases of the Project due to the risk of spills. No soil handling is anticipated during the Project activities at the Project site. Adverse effects on soil could occur from improper storage, use, and transportation of fuel and hazardous waste, and refuelling/maintenance of equipment. With application of the identified mitigation measures and management plans, the residual effects of the Project on soils are considered not significant. Once completed, the Project is expected to result in positive long-term effects on soils at the site, as the sources of contamination will be removed from the site.
Mobilization and Transportation of Personnel and Equipment	Soil could be affected by accidental spills during equipment operation, refuelling, or improper handling techniques.			
Site Remediation		• A Spill Contingency Plan will be developed and implemented during all phases of the Project. • Spill response materials and equipment will be kept on-site at all times during Project activities. • Equipment will be regularly inspected for leaks throughout the duration of the Project. • Spills will be promptly contained and remediated when detected. • All hazardous materials will be transported in accordance with regulatory requirements under the *Transportation of Dangerous Goods Act* (Government of Canada 1992).	Direction: Adverse/ Positive upon completion of remediation Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: Low Reversibility: Reversible	
ASTs, AST/Drum Liquid Waste/Waste Fuel Management	Soil could be affected by accidental spills during equipment operation, refuelling, or improper handling techniques.			
Heavy Equipment and Waste Debris				
Collection of Non-Hazardous Debris				
Off-Site Transportation and Disposal of Waste				
On-Site Disposal of Waste				
Site Closure		• A Spill Contingency Plan will be developed and implemented during all phases of the Project. • Spill response materials and equipment will be kept on-site at all times during Project activities. • Equipment will be regularly inspected for leaks throughout the duration of the Project. • Spills will be promptly contained and remediated when detected. • All hazardous materials will be transported in accordance with regulatory requirements under the *Transportation of Dangerous Goods Act* (Government of Canada 1992).	Direction: Adverse/ Positive upon completion of remediation Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: Low Reversibility: Reversible	
Site Recontouring and Natural Revegetation	Soil could be affected by accidental spills during equipment operation, refuelling, or improper handling techniques.			
Demobilization				
Long-Term Monitoring				

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Site Recontouring and Natural Revegetation	Soil quality could be affected during site closure activities due to admixing, erosion, or soil compaction.	• Disturbed areas (i.e., incineration pad, engineered landfill, WDAs, borrow pit) will be recontoured to match the topography of the surrounding landscape, to allow for unimpeded flow of surface runoff along natural drainage patterns.	Direction: Adverse / Positive upon completion of remediation activities Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: Low Reversibility: Reversible	

3.6.3.6 Effects and Mitigation on Vegetation

Table 3-16: Assessment of Effects on Vegetation

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Site Preparation		• A Spill Contingency Plan will be developed and implemented during all phases of the Project. • Spill response materials and equipment will be kept on-site at all times during Project activities. • Equipment will be regularly inspected for leaks throughout the duration of the Project. • Spills will be promptly contained and remediated when detected. • All hazardous materials will be transported in accordance with regulatory requirements under the *Transportation of Dangerous Goods Act* (Government of Canada 1992).	Direction: Adverse/ Positive upon completion of remediation Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: Low Reversibility: Reversible	Adverse effects of the Project on vegetation are associated with all phases of the Project due to the risk of spills, through improper storage, use, and transportation of fuel and hazardous waste, and refuelling/ maintenance of equipment. A Spill Contingency Plan will be implemented, to manage the occurrence of spills during all Project phases. Longer term adverse effects on vegetation are expected to result from loss or alteration of vegetated areas during site remediation, and site recontouring. To minimize the potential for direct loss and/or alteration of vegetation, organic vegetation material will be salvaged from any areas requiring ground disturbance. Site recontouring could result in fugitive dust emissions. Dust suppression and control measures will be implemented; thus, dust is not expected to have a significant effect on adjacent vegetation. With application of the identified mitigation measures and implementation of management plans the residual effects of the Project on vegetation are considered not significant.
Mobilization and Transportation of Personnel and Equipment	Vegetation communities in the area could be affected by accidental spills during equipment operation, refuelling, or improper handling of hazardous materials.			
Site Remediation				
ASTs, AST/Drum Liquid Waste/Waste Fuel Management	Vegetation communities in the area could be affected by accidental spills during equipment operation, refuelling, or improper handling of hazardous materials.			
Heavy Equipment and Waste Debris				
Collection of Non-Hazardous Debris				
Off-Site Transportation and Disposal of Waste				
On-Site Disposal of Waste				

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Collection of Non-Hazardous Debris	Moving large and/or heavy lengths of wood and metal debris could result in localized loss or alteration of vegetation communities within the Project site.	• Equipment with low tire pressure will be used during site preparation. • Large and heavy lengths of wood and metal debris will be collected and handled so that they do not create gouges or otherwise excessively disturb the vegetated surface while preparation for consolidation or removal from site. • Where large pieces of debris are partially subsided into the soil and must be dug out, the organic material (i.e., vegetation material) will be stripped and stored separately, where possible, to facilitate natural revegetation following site closure.	Direction: Adverse Magnitude: Negligible Geographic Extent: Local Duration: Long-term Frequency: Intermittent Probability: High Reversibility: Reversible	
Site Closure		• Dust control best management practices will be implemented on-site as required, including limiting activities during periods of high wind periods.	Direction: Adverse Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: Low Reversibility: Reversible	
Site Recontouring and Natural Revegetation	Fugitive dust during site recontouring could affect vegetation communities in the area.			
Site Recontouring and Natural Revegetation Demobilization Long-Term Monitoring	Vegetation communities in the area could be affected by accidental spills during equipment operation, refuelling, or improper handling of hazardous materials.	• A Spill Contingency Plan will be developed and implemented during all phases of the Project. • Spill response materials and equipment will be kept on-site at all times during Project activities. • Equipment will be regularly inspected for leaks throughout the duration of the Project. • Spills will be promptly contained and remediated when detected. • All hazardous materials will be transported in accordance with regulatory requirements under the *Transportation of Dangerous Goods Act* (Government of Canada 1992).	Direction: Adverse Magnitude: Negligible Geographic Extent: Local Duration: Medium-term Frequency: Intermittent Probability: Low Reversibility: Reversible	

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Site Recontouring and Natural Revegetation	Re-establishment of vegetation communities may not be successful in work areas following site closure activities.	• Work areas will be established on previously disturbed areas, where possible. • Where possible, previously stripped organic material (i.e., vegetation material) will be replaced on top of the recontoured soil, to facilitate natural revegetation following site closure.	Direction: Adverse/ Positive following natural revegetation Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: High Reversibility: Reversible	

3.6.3.7 Effects and Mitigation on Wildlife and Wildlife Habitat

Table 3-17: Assessment of Effects on Wildlife and Wildlife Habitat

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Site Preparation		• If activities occur during the nesting period for migratory birds, pre-disturbance nest sweeps will be completed by a qualified wildlife monitor prior to commencing activities. If an active nest is found, the nest and surrounding area will be avoided until the nest is determined to be inactive or the young have fledged. • Project areas will be inspected for wildlife use prior to commencing activities. • Aircraft flights will fly at a minimum altitude of 600 m above ground level except for takeoff and landing, to minimize sensory disturbance to Peary caribou in the area (Mining and Petroleum Environmental Research Group [MPERG] 2008a). • If Peary caribou are observed 500 m of the site, on-site activities will be suspended. • Containers for domestic waste will be located in enclosed bear-proof structures. • All on-site personnel will undergo Bear safety awareness training during onboarding. • Bear deterrents will be made available for all on-site personnel.	Direction: Adverse Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: Low Reversibility: Reversible	Adverse effects of the Project on wildlife and wildlife habitat are associated with all phases of the Project. Prior to commencing site preparation, work areas will be inspected by a qualified wildlife monitor for active nests and/or burrows. Where identified, disturbance to these sensitive features will be avoided. Therefore, the probability of adverse effects on wildlife and wildlife habitat resulting from site preparation activities is anticipated to be very low. Equipment noise and human activity may result in the temporary avoidance of the area by many wildlife species and may result in temporary changes in local movement patterns of wildlife. The impacts from noise are considered to be of negligible magnitude based on the potential species number of individuals likely to be present, and the relatively small area of the Project Footprint compared to the similar available habitat in the surrounding landscape. Maintaining equipment in good working condition, turning equipment off when not in use, and use of mufflers will reduce the effects of noise on wildlife. The main remedial work will commence in June 2027 for the summer season, which are expected to be within the nesting period for migratory bird species. Project areas will be checked for wildlife species, particularly species of concern. In the event that remediation activities cannot be completed without disturbing/ destroying nests or burrows associated with migratory birds or species of special concern, a wildlife officer from the Government of Nunavut and ECCC will be consulted for additional guidance and/or to obtain a permit authorizing the removal of nests or disruption of habitat. Small mammals with ground colonies will also be avoided, where possible. Further, suitable wildlife habitat in the Project areas will be left intact to the extent possible. Project activities will require numerous flights between the site and Resolute, to transport equipment, personnel, and waste materials. The Wildlife Management Plan will include procedures to mitigate the effects of regular air transport on wildlife, such as maintaining minimum altitudes of 600 m during travel, and avoiding travel over designated protected areas (i.e., caribou calving grounds and polar bear denning grounds).
Mobilization and Transportation of Personnel and Equipment	Site preparation activities may result in indirect changes to wildlife mortality through sensory disturbance causing disruptions of movement and behaviour patterns.			

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Site Remediation		• If activities occur during the nesting period for migratory birds, pre-disturbance nest sweeps will be completed by a qualified wildlife monitor prior to commencing activities. If an active nest is found, the nest and surrounding area will be avoided until the nest is determined to be inactive or the young have fledged. • Project areas will be inspected for wildlife use prior to commencing activities. • Aircraft flights will fly at a minimum altitude of 600 m above ground level except for takeoff and landing, to minimize sensory disturbance to Peary caribou in the area (Mining and Petroleum Environmental Research Group [MPERG] 2008a). • If Peary caribou are observed 500 m of the site, on-site activities will be suspended. • Containers for domestic waste will be located in enclosed bear-proof structures. • All on-site personnel will undergo Bear safety awareness training during onboarding. • Bear deterrents will be made available for all on-site personnel.	Direction: Adverse/Positive upon completion of remediation Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: Low Reversibility: Reversible	Overall, the removal of abandoned site infrastructure and waste materials will improve habitat quality and thus, have long-term benefits for wildlife. Following implementation of mitigation measures, the residual effects associated with Project activities to wildlife are considered not significant.
ASTs, AST/Drum Liquid Waste/Waste Fuel Management On-site Building Demolition Heavy Equipment and Waste Debris Collection of Non-Hazardous Debris Off-Site Transportation and Disposal of Waste On-Site Disposal of Waste	Site remediation activities may result in indirect changes to wildlife mortality through sensory disturbance causing disruptions of movements patterns			

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Closure		• If activities occur during the nesting period for migratory birds, pre-disturbance nest sweeps will be completed by a qualified wildlife monitor prior to commencing activities. If an active nest is found, the nest and surrounding area will be avoided until the nest is determined to be inactive or the young have fledged. • Project areas will be inspected for wildlife use prior to commencing activities. • Aircraft flights will fly at a minimum altitude of 600 m above ground level except for takeoff and landing, to minimize sensory disturbance to Peary caribou in the area (Mining and Petroleum Environmental Research Group [MPERG] 2008a). • If Peary caribou are observed 500 m of the site, on-site activities will be suspended. • Containers for domestic waste will be located in enclosed bear-proof structures. • All on-site personnel will undergo Bear safety awareness training during onboarding. • Bear deterrents will be made available for all on-site personnel.	Direction: Adverse Magnitude: Negligible Geographic Extent: Local Duration: Short-term Frequency: Intermittent Probability: High Reversibility: Reversible	Overall, the removal of abandoned site infrastructure and waste materials will improve habitat quality and thus, have long-term benefits for wildlife. Following implementation of mitigation measures, the residual effects associated with Project activities to wildlife are considered not significant.
Site Recontouring and Natural Revegetation	Site closure activities may result in indirect changes to wildlife mortality through sensory disturbance causing disruptions of movement patterns.			
Demobilization				
Long-Term Monitoring				

3.6.3.8 Effects and Mitigation on Employment and the Economy

Table 3-18: Assessment of Effects on Employment and the Economy

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Site Preparation Mobilization and Transportation of Personnel and Equipment **Site Remediation** ASTs, AST/Drum Liquid Waste/Waste Fuel Management On-site Building Demolition Heavy Equipment and Waste Debris Collection of Non-Hazardous Debris Off-Site Transportation and Disposal of Waste On-Site Disposal of Waste **Site Closure** Site Recontouring and Natural Revegetation Demobilization Long-Term Monitoring	The Project will result in positive effects to employment and economy in the Hamlet of Resolute by creating employment opportunities during all phases of the Project. The Project may also provide training opportunities for residents of Resolute, which may in turn lead to further employment opportunities beyond the scope of the Project.	• The contract prepared for the remedial work will include an Aboriginal Opportunities Consideration (AOC) / Inuit Benefits Plan (IBP) section in the bidder evaluation criteria, to provide a minimum level of Inuit employment and Inuit sub-contracting opportunities.	Direction: Positive Magnitude: Moderate Geographic Extent: Regional Duration: Short-term to long-term Frequency: Single to Continuous Probability: High Reversibility: Reversible	The predicted residual effects on employment and the economy as a result of the Project are anticipated to be positive in direction, moderate in magnitude, regional in extent, short-term to long-term in duration (based on skills training opportunities applicable to future employment) and occur as single or continuous events. No specific mitigation measured were identified to reduce or avoid effects on employment and the economy, though consultation and engagement will improve the overall benefits of the Project. As the effects are anticipated to be positive, no significance determination was made.

3.6.3.9 Effects and Mitigation on Community Services

Table 3-19: Assessment of Effects on Community Services

Project Activity	Potential Effect	Mitigation Measures	Residual Effect Characterization	Determination of Significance
Site Preparation Mobilization and Transportation of Personnel and Equipment **Site Remediation** ASTs, AST/Drum Liquid Waste/Waste Fuel Management On-site Building Demolition Heavy Equipment and Waste Debris Collection of Non-Hazardous Debris Off-Site Transportation and Disposal of Waste On-Site Disposal of Waste **Site Closure** Site Recontouring and Natural Revegetation Demobilization Long-Term Monitoring	The expected increase in local employment as a result of the Project may lead to increased demand for local businesses, such as food, lodging, transportation, fuel, and industrial sales, services, and supply.	• Prior to commencing Project activities, the Contractor selected to complete the remedial work will provide information to the residents and business of Resolute and surrounding communities, about potential business opportunities and services that may be requested from local vendors	Direction: Positive Magnitude: Low Geographic Extent: Regional Duration: Short-term Frequency: Single to Intermittent Probability: High Reversibility: Reversible	The predicted residual effects on community services as a result of the Project are anticipated to be positive, low in magnitude, regional in extent, short-term in duration, and occur on a single to continuous basis. Based on the small scale and short-term duration of the Project, no adverse effects on community services are expected by a potential insufficiency of services for the rest of the community. No specific mitigation measured were identified to reduce or avoid effects on community services, though consultation and engagement will improve the overall benefits of the Project. As the effects are anticipated to be positive, no significance determination was made.

4.0 Accidents, Malfunctions, and Unplanned Events

Potential accidents, malfunctions and unplanned events associated with the activities of this Project may include:

- Accidental release of hazardous materials (e.g., fuels, lubricants);
- Failure of erosion and sediment control measures;
- Health and safety incidents; and,
- Fire and explosion.

This section outlines standard mitigation measures that will be applied for those VECs/VSCs identified as a mechanism to reduce potential environmental effects from accidents, malfunctions and unplanned events at each Project site.

4.1.1 Accidental Release of Hazardous Materials

Hazardous materials will be stored and used on-site primarily for operation and maintenance of equipment during site preparation, remediation and closure activities. These materials include fuels (e.g., gasoline, diesel, propane, etc.), lubricants (e.g., grease, hydraulic fluid, engine oil, etc.) and coolants (e.g., ethylene glycol).

Accidental releases of hazardous materials may occur while operating, refuelling or servicing equipment, as a result of human error or equipment malfunction, and through improper storage and handling of hazardous materials on-site.

The accidental release of hazardous materials through spills or leaks has the potential to contaminate soils and, if not promptly contained, contaminate aquatic environments. Contaminants may adversely affect surface water quality, fish and fish habitat, and wildlife habitat. Some hazardous materials contain compounds that are toxic to vegetation, and wildlife species; therefore, effects on vegetation and wetlands from an accidental hazardous materials release includes physical harm or death of vegetation species, a reduction or loss of wetland function as a habitat for wildlife, and accretion of contaminants in wetland sediments.

To address the potential effects from accidental release of a hazardous material, a Project-specific Emergency Response Plan (ERP) with defined contingency and emergency response procedures in the event of a hazardous material spill will be developed and implemented throughout the site preparation, remediation, and closure phases at each Project site.

The ERP will include the following plans and procedures:

- A Spill Contingency Plan, which will be developed as part of the ERP for substances anticipated to be stored and used on-site during site preparation, remediation, and closure phases;
- All potentially hazardous materials will be stored in appropriate containers and handled in designated locations on-site away from all sensitive environmental receptors, in accordance with applicable legislation and permit requirements;
- All fuels will be stored, and refuelling and maintenance of vehicles and equipment will be conducted a minimum of 100 m from all water bodies;
- Material storage areas will be regularly inspected by site personnel to ensure that containers are secure and potential spills and leaks are mitigated;
- All Project personnel will practice good housekeeping, including daily clean-up of debris within the Project site;
- Emergency spill response materials will be available on-site at all times during the site preparation, remediation, and closure phases;
- On-site Project personnel will be trained in emergency response procedures and protocols during onboarding, including response to accidental releases of hazardous materials;
- All hazardous materials will be transported in accordance with regulatory requirements under the Transportation of Dangerous Goods Act (Government of Canada 1992); and,
- Where required, on-site and off-site spills related to the Project will be reported in accordance with the Nunavut Environmental Protection Act (Government of Nunavut 2013).

With application of preventive measures and implementation of a Spill Contingency Plan, the potential effects of accidental spills of contaminants are low in magnitude, limited to the Project Footprint at the Project site, short-term in duration, limited to a single event, have a very low probability of occurrence, and are reversible. Therefore, the potential effects are considered not significant.

4.1.2 Health and Safety Incidents

The Project site is in a remote wilderness area that is only accessible by aircraft. As such, access to emergency services in the event of a health and safety incident may be limited. The remote nature of the Project site, coupled with the proposed Project activities and equipment involved, pose a risk to the health and safety of the on-site personnel.

To ensure the safety of all personnel onsite, a site-specific Health and Safety Plan will be created and will include all necessary precautions while working on the Project, including but not limited to:

- Safe handling, containment and transportation of hazardous material;
- Training requirements for on-site personnel, including but not limited to the Workplace Hazardous Materials Information System (WHMIS) program;
- Personal protective equipment required by all on-site personnel, which will be in good working condition and provided by the employer;

- Proper preparations in dealing with extreme weather conditions and events;
- Proper first aid, bear safety awareness training and wilderness survival training; and,
- Proper protocol and safety procedures for bear and other wildlife encounters.

The Health and Safety Plan will include a copy of the Project-specific ERP, which will contain the emergency response procedures and established communication protocols to follow in the event of a health and safety-related incident.

4.1.3 Fire

During the site preparation, remediation, and closure phases at the site, there is potential for the occurrence of unplanned fires as a result of some Project activities, including hot work (i.e., welding, grinding and cutting), equipment travel where hot exhaust systems may ignite dry vegetation, improper storage and handling of flammable materials, and improper incineration of waste fuel and wood waste. Fires may also result from Project personnel smoking within or near the Project areas. While electrical components of the Project, including a generator, wiring, and other equipment, are designed to operate in compliance with applicable standards, there is potential for malfunctions to create excessive heat or an ignition source, which may in turn result in a fire occurrence.

The emergency response procedures and preventative measures to address the potential effects from accidental fires will be included in the ERP and will be developed and implemented throughout all phases of the Project. The key procedures and measures in the ERP will include the following:

- Project equipment will be regularly inspected maintained;
- All mobile Project equipment will be equipped with fire suppression equipment, such as fire extinguishers and hand shovels;
- Fire suppression equipment on-site will be regularly inspected and serviced in accordance with provincial regulations;
- All on-site Project personnel will be trained in fire suppression and the emergency response procedures included in the ERP during onboarding;
- Fire detection and alert systems will be established on-site during the Project construction, operation and maintenance and decommissioning phases;
- Vegetation and combustible material will be grubbed from around the incineration pad;
- Smoking will be restricted to designated areas within the Project site;
- Emergency response agencies in Resolute will be familiarized with the Project location and the ERP developed for the Project; and,
- Project work will be modified during dry weather conditions to reduce the potential for fire occurrence, such as rescheduling specific work activities or avoiding areas near vegetated areas.

5.0 Effects of the Environment on the Project

While not identified as a specific VEC, the potential effects that environmental conditions may have on the Project were characterized in the environmental assessment. Environmental conditions refer to natural or anthropogenic events that may affect the normal function or stability of Project-related activities and may include severe weather events and nuisance wildlife. The effects of these environmental conditions were assessed for the Isachsen HAWS site in the context of potential interactions with the proposed activities comprising the Project.

5.1.1 Severe Weather

Severe weather may include extreme precipitation events, extreme temperatures, extreme wind speeds, as well as conditions that limit visibility, such as fog. Severe weather has the potential to affect the Project primarily by causing delays in the Project schedule. The Project will primarily be accessed by fixed-wing aircraft for all activities, which have limitations in the weather conditions in which they can operate. As such, adverse weather conditions could lead to delays in transportation of equipment or personnel to or from the Project site.

Severe weather may also pose a safety risk to Project personnel, as a result of unsafe equipment operating conditions, exposure hazards, or excessive loads on Project infrastructure. These safety risks may also result in work interruptions and delays to the Project.

The potential effects of severe weather have been considered during Project planning to date, and are deemed manageable through Project design, scheduling, and the application of standard operating, and maintenance and repair procedures. Weather conditions will be assessed on a daily basis leading up to and throughout the duration of Project activities, to determine the potential risk of weather conditions on the Project activities and worker safety. Redundant communication plans will be established with aircraft operators in the event of equipment malfunction or failure.

5.1.2 Nuisance Wildlife

The proposed Project activities have the potential to create an abundance of human-produced waste. Human-produced waste can create a higher potential for wildlife attraction, which is one of the major problems with bears. This interaction has the potential to affect on-site personnel through increased health and safety risks, as well as equipment associated with the Project activities.

Human waste such as human food, food waste, garbage, and petroleum-based products may attract bears or other wildlife to areas of human use. Bears or other wildlife that become conditioned to feeding on human- produced attractants are considered to be “food-conditioned.” Food-conditioning in bears compromises both human and bear safety and needs to be strictly avoided.

Even a low rate of exposure to human food or garbage can reinforce behaviour in bears that leads to conflicts with people. Proactive management and control of potential attractants is one of the most important ways to ensure safe interaction between people and bears (MPERG 2008b).

Based on the MPERG *Guidelines for Industrial Activity in Bear Country* (2008b), the following mitigation is recommended to provide a deterrent to nuisance wildlife and more specifically bears, which may access the site during the Project activities:

- The simplest way to prevent encounters between humans and bears is to not attract bears in the first place, through proper food storage and garbage handling procedures;
- Store fuels, lubricants, and coolants in airtight containers in a location that is inaccessible to bears;
- Retain the services of Wildlife Monitor during activities as applicable, to monitor work areas for bears or other potential wildlife encounters;
- Provide employees with information, training, and equipment to protect themselves, and familiarize employees with site-specific preventative measures; and,
- Have appropriate bear deterrents on hand, such as air horns, bear pepper spray, or bear bangers.

6.0 Assessment of Cumulative Effects

According to the NIRB Technical Guide Series *Terminology and Definitions* (NIRB 2018), cumulative effects refer to "the accumulation of changes to the environment caused by human activities (e.g., past, existing, and proposed activities, including activities associated with the project under assessment). These changes occur over space and time and can be brought about by environmental effects that are additive or iterative. For example, hunting, oil spills, loss of habitat, commercial fishing pressure or prey species, can affect marine mammals in the Arctic." Based on this definition, the cumulative environmental effects that are assessed are those that result from the Project-specific, adverse residual effects that may interact in a cumulative manner with the potential adverse residual effects of other past, present, or reasonably foreseeable or publicly known future projects or physical activities.

The cumulative effects assessment considered the Project-specific residual effects for each VEC or VSC included for the Project site assessed in this EIA. The VECs or VSCs with adverse residual effects of low magnitude were carried forward into the cumulative effects' assessment.

Based on the assessment of effects for each VEC and VSC completed for each Project site, adverse residual effects were predicted to be negligible in magnitude with effective implementation of the mitigation measures included in each assessment. Therefore, no proposed Project activities are expected to interact in a cumulative manner with other past, present, or reasonably foreseeable projects or activities in the region.

7.0 Follow-up and Monitoring Programs

The remedial activities included in the Project were selected with the intention of reducing the liability for the remediated waste streams to zero upon completion, with no anticipated long-term monitoring requirements. This objective is supported by the findings from the HHERA, which suggest the current conditions at the Project site pose a negligible potential risk to human health, and a low potential risk to terrestrial vegetation, soil invertebrate communities, and mammalian wildlife populations on-site, and to the freshwater aquatic life communities in the adjacent freshwater environment (NOJV, 2025).

Nonetheless, the activities proposed in the Project will improve the site conditions by completing the following:

- Remove the sources of contamination by collecting all of the waste fuel, fuel drums, hazardous waste, and other sources of contamination from the Project site, and transporting hazardous wastes off-site for disposal at an approved facility outside of the Territory;
- Consolidate and crush non-hazardous debris (including heavy equipment and drums) for disposal on-site in an engineered landfill with a liner and coarse aggregate cap;
- Demolish all remnant infrastructure that may pose a health and safety risk at the Project site, consolidate and crush non-hazardous debris for disposal on-site in an engineered landfill with a liner and coarse aggregate cap;
- Abate, package and consolidate asbestos-containing materials for disposal in an engineered landfill with a liner and coarse aggregate cap; and,
- Manage existing Waste Disposal Areas through the addition of a coarse aggregate cap and installation of a liner in areas of concentrated waste. Improve surface water drainage around WDAs. Post-construction monitoring through installed thermistors and periodic LiDAR surveys.

Based on the above activities included in the Project, and the negligible to low risk of the current site conditions, as per the HHERA findings, a long-term monitoring program is not considered to be a requirement beyond the recommendation for post-construction monitoring of the existing WDAs and engineered landfill. Post-construction monitoring is being proposed through installed monitoring wells (for the engineered landfill), thermistors (WDAs and engineered landfill) and periodic LiDAR surveys.

8.0 Knowledge Deficiencies

The information incorporated into this EIA was based on a combination of observations collected during field visits to the Project areas between in 2022, 2023, 2024, and 2025, findings from previously completed Phase I, II and III ESAs on the Project site, information provided during interviews with local residents in Resolute, and publicly available information obtained from government databases, guidance documents, and scientific literature. While this information was suitable for the scope of this assessment, some knowledge deficiencies exist in the information available, including the following:

- A lack of comprehensive information of the vegetation and wildlife species that are known to exist or use the Project areas as a comprehensive suite of baseline environmental studies was not completed as part of this scope of work. However, given the short duration of the proposed remedial activities at the Project site, and the proposed schedule of activities being outside of peak windows for sensitive species (i.e., after caribou calving season and near the end of the nesting period for migratory birds), this knowledge deficiency is not anticipated to substantially affect the Project outcome; and,
- Project consultation and engagement with stakeholders and interested members of the public was held at a community meeting on January 29, 2025 in Resolute Bay, NU, and again on January 28, 2026 with updated project details. The Project will benefit from information gains through continued engagement with members of the public in the region and consultation with regulatory agencies.

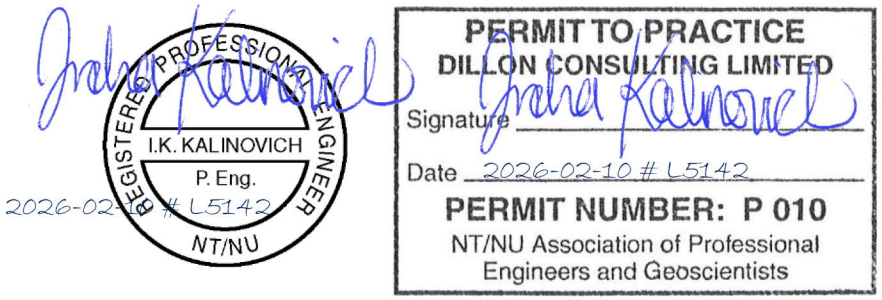
9.0 Limitations and Closure

This EIA has been prepared in accordance with the agreed scope of work between ECCC and PSPC. The conclusions presented herein are based on information provided to, or obtained by DOJV as indicated in the report, and applies solely to site conditions existing at the time of the assessment. Although a reasonable investigation was conducted by DOJV, the investigation was by no means exhaustive and cannot be construed as a complete characterization of the existing environmental setting. Should significant changes to the Project scope and/or location occur, this EIA should be revisited to ensure compliance with regulatory requirements and consideration of potentially new interactions with the VECs and VSCs.

This report was prepared by NOJV for the sole benefit of PSPC and the Government of Canada. The material in the report reflects NOJV's best judgment in light of the information available to NOJV at the time of preparation. Any use which a third party (e.g., a party other than PSPC and ECCC) makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. NOJV and Dillon Consulting Limited accept no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Respectfully submitted,

DILLON CONSULTING LIMITED
AND OUTCOME CONSULTANTS IN JOINT VENTURE
(DOJV)



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Project Manager

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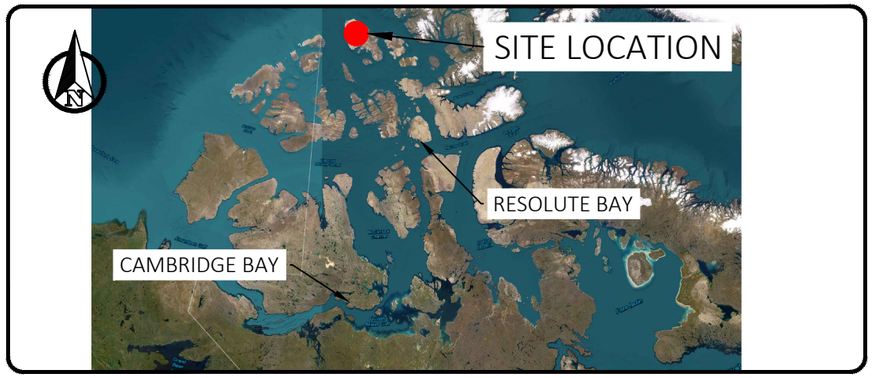
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Appendix A

Figures







GENERAL NOTES

1. ALL UNITS IN METERS UNLESS OTHERWISE NOTED.
2. COORDINATE SYSTEM IS NAD83 (CSRS) / UTM ZONE 13N

LEGEND

	SITE LOCATION
	DFRP PROPERTY LINE
	PROJECT AREA

NUQSANA Inc.
11-1 MIVVIK AVE.
RANKIN INLET , NUNAVUT
X0C 0G0
t:867.645.7533

outcome CONSULTANTS
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OTTAWA, ONTARIO
K1Y 0Y2
t:613.729.2402

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ISACHSEN HIGH ARCTIC WEATHER STATION

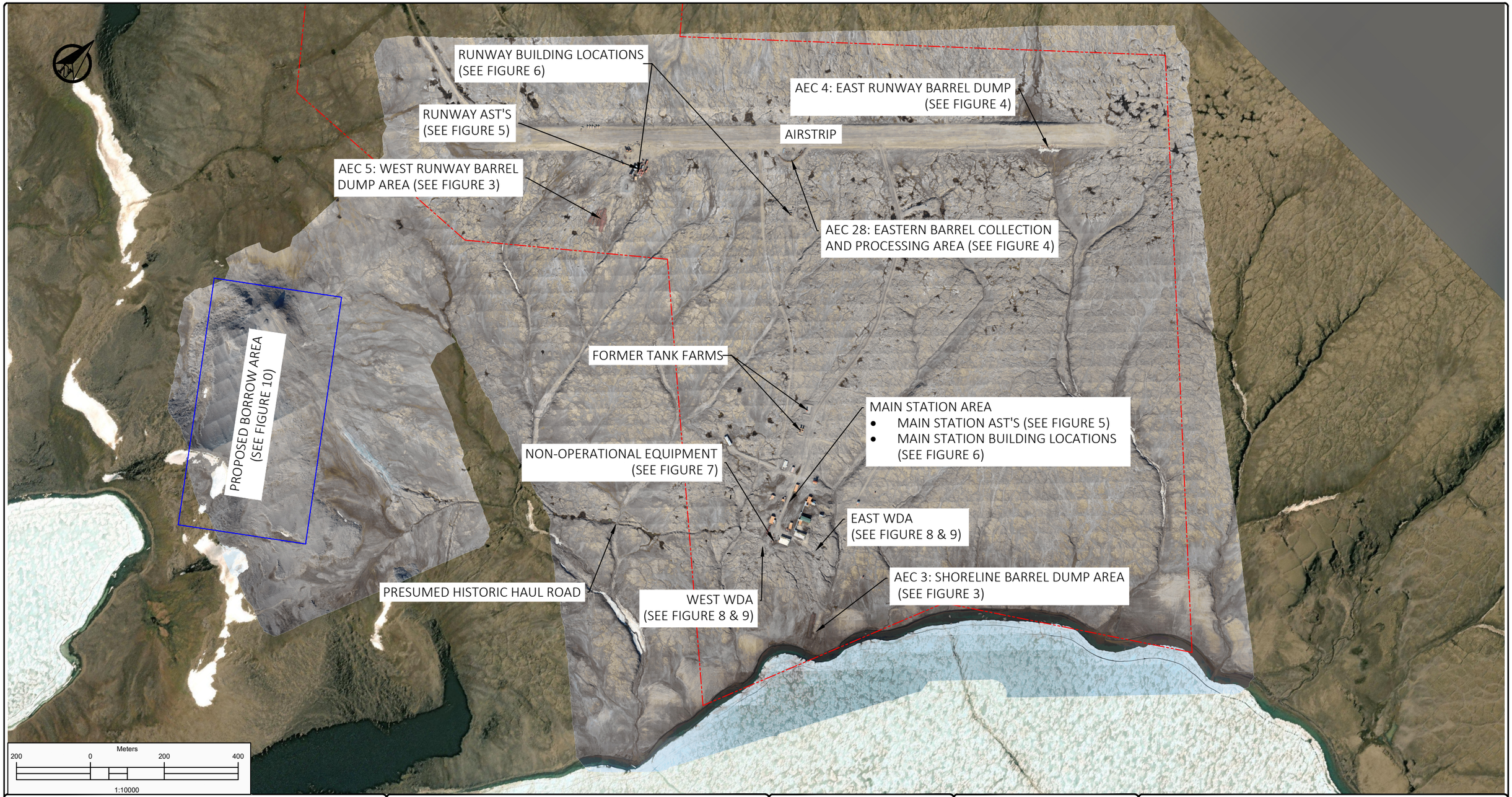
ELLEF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN - FIGURE 1

SITE LOCATION

OUTCOME PROJECT NUMBER:	DRAWN BY:	SCALE:
P2023-16	J.MILLS	NTS
CLIENT PROJECT NUMBER:	**CHECKED BY:**	**PUBLISH DATE:**
R.125553.001	C.SADLER	2025-04-11

DRAWING NAME:	SHEET NUMBER:	REV:
P2023-16 ISACHSEN RAP FIGURES.dwg	FIGURE 1	00



GENERAL NOTES

1. ALL MEASUREMENTS IN METRES UNLESS OTHERWISE NOTED
2. COORDINATE SYSTEM IS NAD83 (CSRS) / UTM ZONE 13N

LEGEND

	DFRP PROPERTY LINE

NUQSANA Inc.
11-1 MIVVIK AVE.
RANKIN INLET , NUNAVUT
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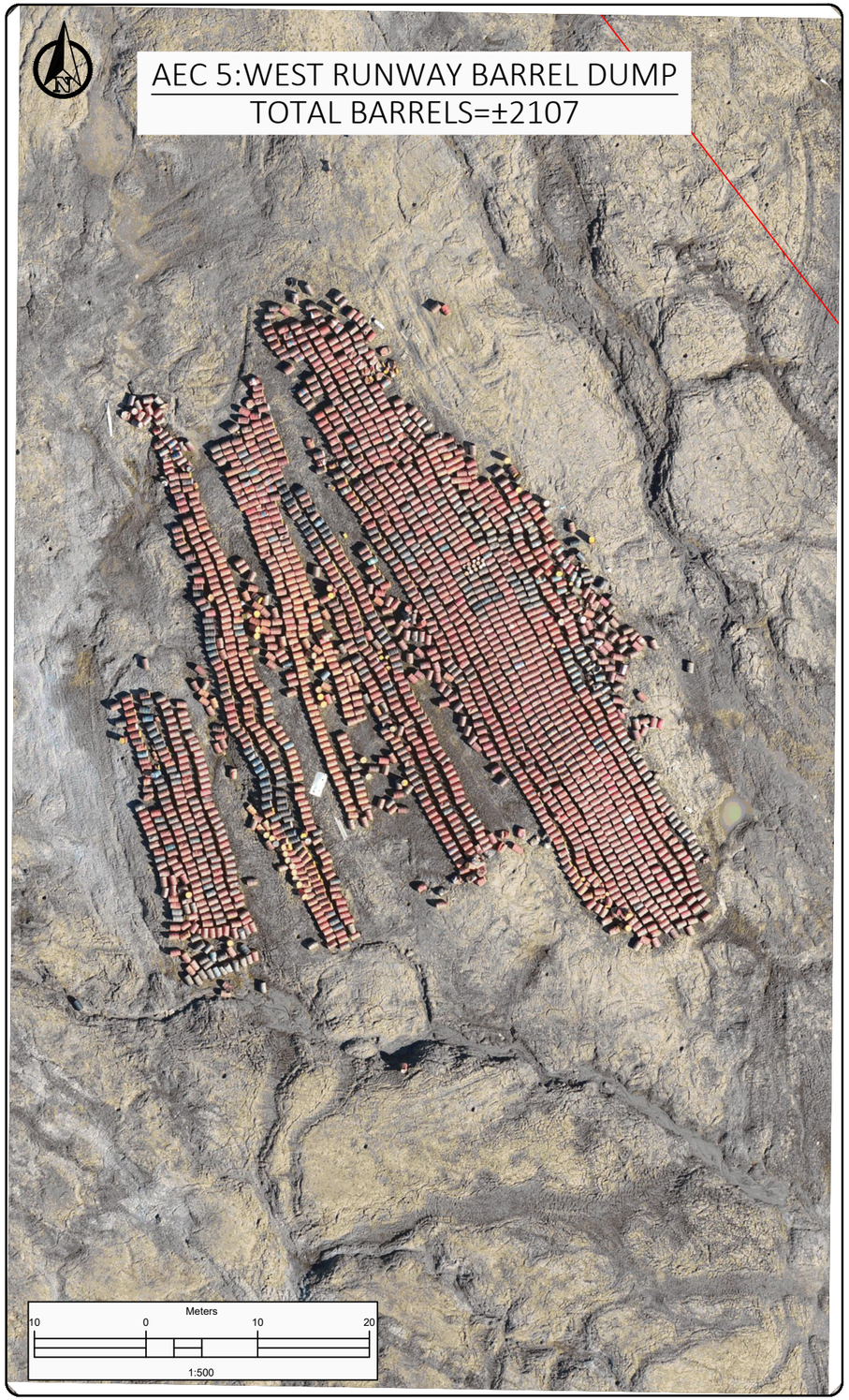
ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN- FIGURE 2

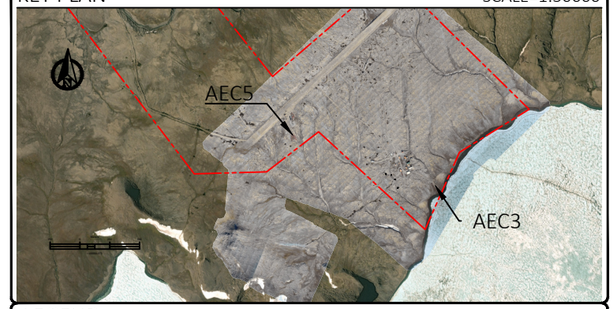
SITE PLAN/ KEY FEATURES

OUTCOME PROJECT NUMBER: P2023-16	DRAWN BY: J.MILLS	SCALE: 1:10000
CLIENT PROJECT NUMBER: R.125553.001	CHECKED BY: C.SADLER	PUBLISH DATE: 2025-02-27
DRAWING NAME: P2023-16 ISACHSEN RAP FIGURES.dwg	SHEET NUMBER: FIGURE 2	REV: 00





KEY PLAN SCALE=1:50000



LEGEND

	DFRP PROPERTY LINE

GENERAL NOTES

1. ALL UNITS IN METERS UNLESS OTHERWISE NOTED.
2. COORDINATE SYSTEM IS NAD83 (CSRS) / UTM ZONE 13N

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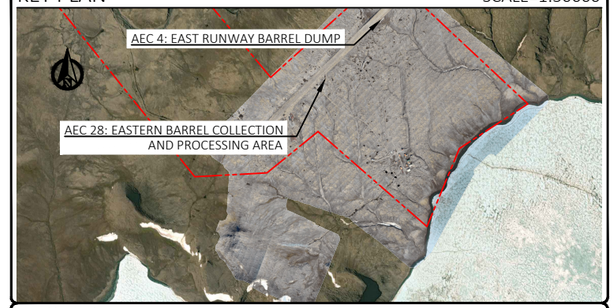
ISACHSEN HIGH ARCTIC WEATHER STATION
ELLEF RINGNESS ISLAND, NUNAVUT
REMEDIAL ACTION PLAN- FIGURE 3
EXISTING CONDITIONS - AEC 5: WEST RUNWAY BARREL DUMP & AEC 3: SHORELINE BARREL DUMP

OUTCOME PROJECT NUMBER:	DRAWN BY:	SCALE:
P2023-16	J.MILLS	1:500
CLIENT PROJECT NUMBER:	CHECKED BY:	PUBLISH DATE:
R.125553.001	C.SADLER	2025-02-27
DRAWING NAME:	SHEET NUMBER:	REV:
P2023-16 ISACHSEN RAP FIGURES.dwg	FIGURE 3	00





KEY PLAN SCALE=1:50000



LEGEND

	DFRP PROPERTY LINE

GENERAL NOTES

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2. COORDINATE SYSTEM IS NAD83 (CSRS) / UTM ZONE 13N

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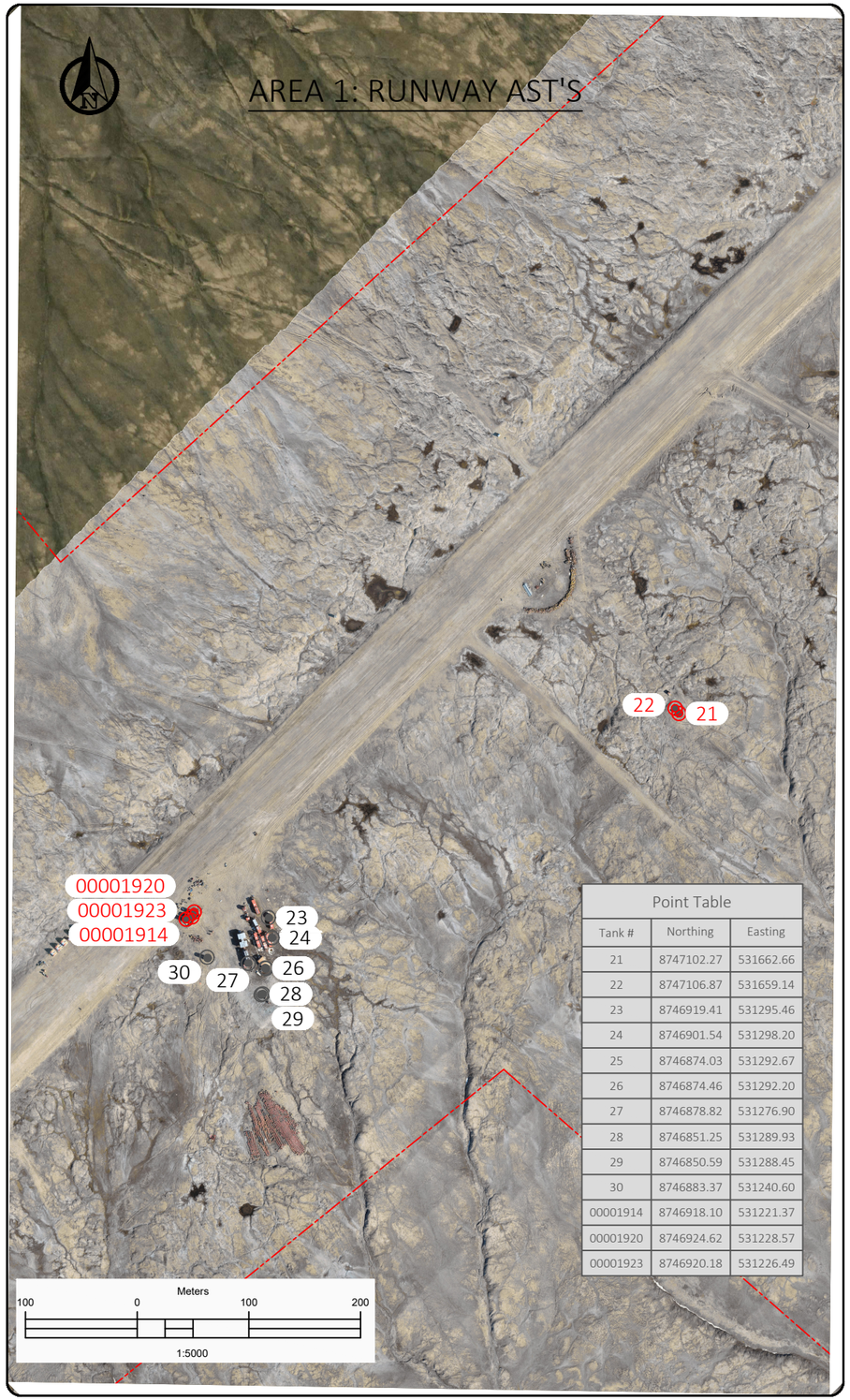
ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

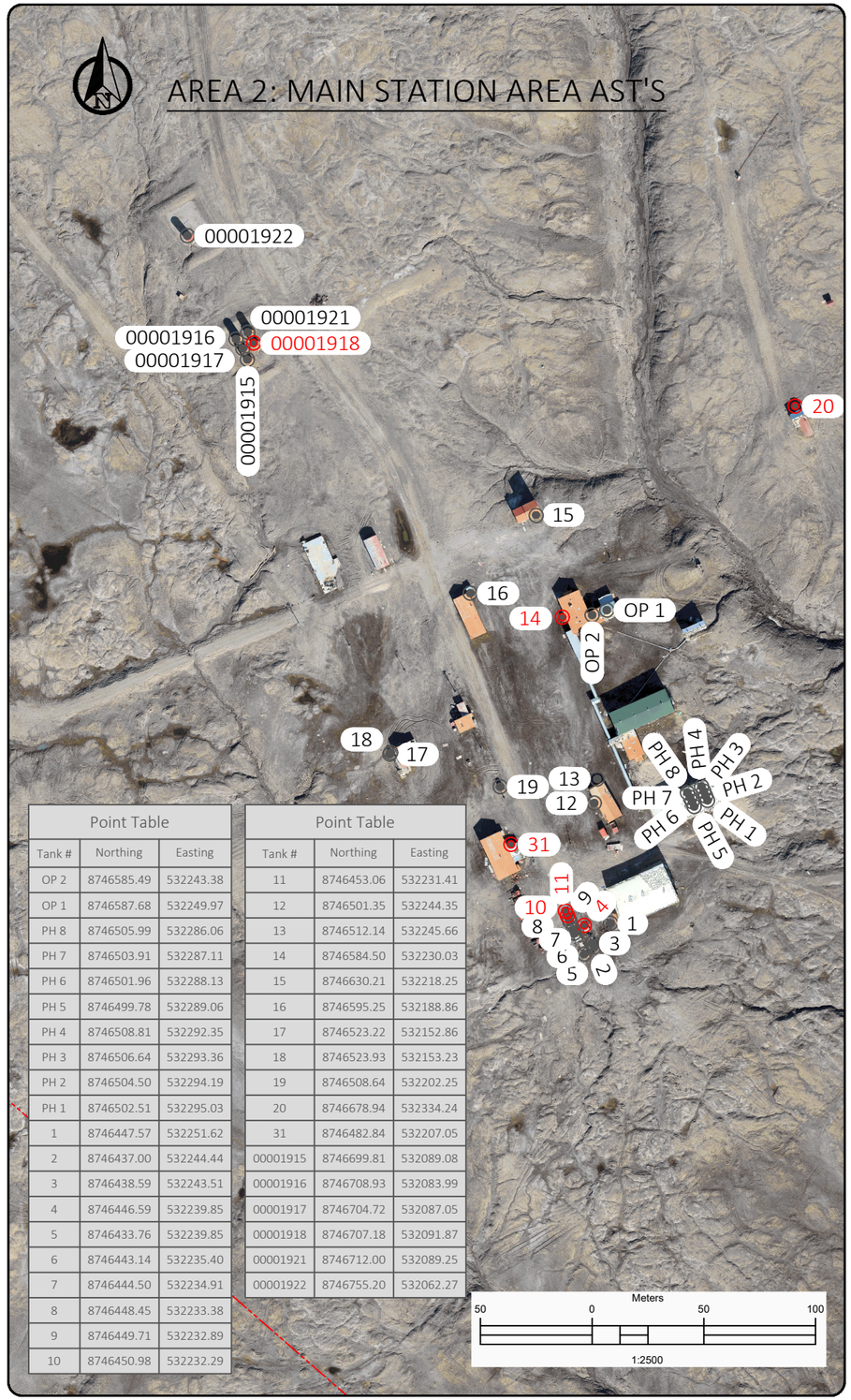
REMEDIAL ACTION PLAN- FIGURE 4

EXISTING CONDITIONS- CRUSHED DRUM AND METAL DEBRIS AEC 28: EASTERN BARREL COLLECTION AND PROCESSING AREA & AEC 4: EAST RUNAWAY BARREL DUMP

OUTCOME PROJECT NUMBER: P2023-16	DRAWN BY: J.MILLS	SCALE: 1:500
CLIENT PROJECT NUMBER: R.125553.001	CHECKED BY: C.SADLER	PUBLISH DATE: 2025-02-27
DRAWING NAME: P2023-16 ISACHSEN RAP FIGURES.dwg	SHEET NUMBER: FIGURE 4	REV: 00



Point Table		
Tank #	Northing	Easting
21	8747102.27	531662.66
22	8747106.87	531659.14
23	8746919.41	531295.46
24	8746901.54	531298.20
25	8746874.03	531292.67
26	8746874.46	531292.20
27	8746878.82	531276.90
28	8746851.25	531289.93
29	8746850.59	531288.45
30	8746883.37	531240.60
00001914	8746918.10	531221.37
00001920	8746924.62	531228.57
00001923	8746920.18	531226.49

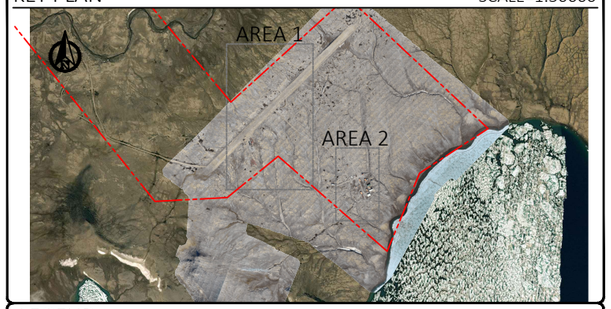


Point Table		
Tank #	Northing	Easting
OP 2	8746585.49	532243.38
OP 1	8746587.68	532249.97
PH 8	8746505.99	532286.06
PH 7	8746503.91	532287.11
PH 6	8746501.96	532288.13
PH 5	8746499.78	532289.06
PH 4	8746508.81	532292.35
PH 3	8746506.64	532293.36
PH 2	8746504.50	532294.19
PH 1	8746502.51	532295.03
1	8746447.57	532251.62
2	8746437.00	532244.44
3	8746438.59	532243.51
4	8746446.59	532239.85
5	8746433.76	532239.85
6	8746443.14	532235.40
7	8746444.50	532234.91
8	8746448.45	532233.38
9	8746449.71	532232.89
10	8746450.98	532232.29

Point Table		
Tank #	Northing	Easting
11	8746453.06	532231.41
12	8746501.35	532244.35
13	8746512.14	532245.66
14	8746584.50	532230.03
15	8746630.21	532218.25
16	8746595.25	532188.86
17	8746523.22	532152.86
18	8746523.93	532153.23
19	8746508.64	532202.25
20	8746678.94	532334.24
31	8746482.84	532207.05
00001915	8746699.81	532089.08
00001916	8746708.93	532083.99
00001917	8746707.72	532087.05
00001918	8746707.18	532091.87
00001921	8746712.00	532089.25
00001922	8746755.20	532062.27

KEY PLAN

SCALE=1:50000



LEGEND

	DFRP PROPERTY LINE
23	TANK LOCATION AND ID
23	TANK WITH PRODUCT LOCATION AND ID

GENERAL NOTES

1. ALL UNITS IN METERS UNLESS OTHERWISE NOTED.
2. COORDINATE SYSTEM IS NAD83 (CSRS) / UTM ZONE 13N

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ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

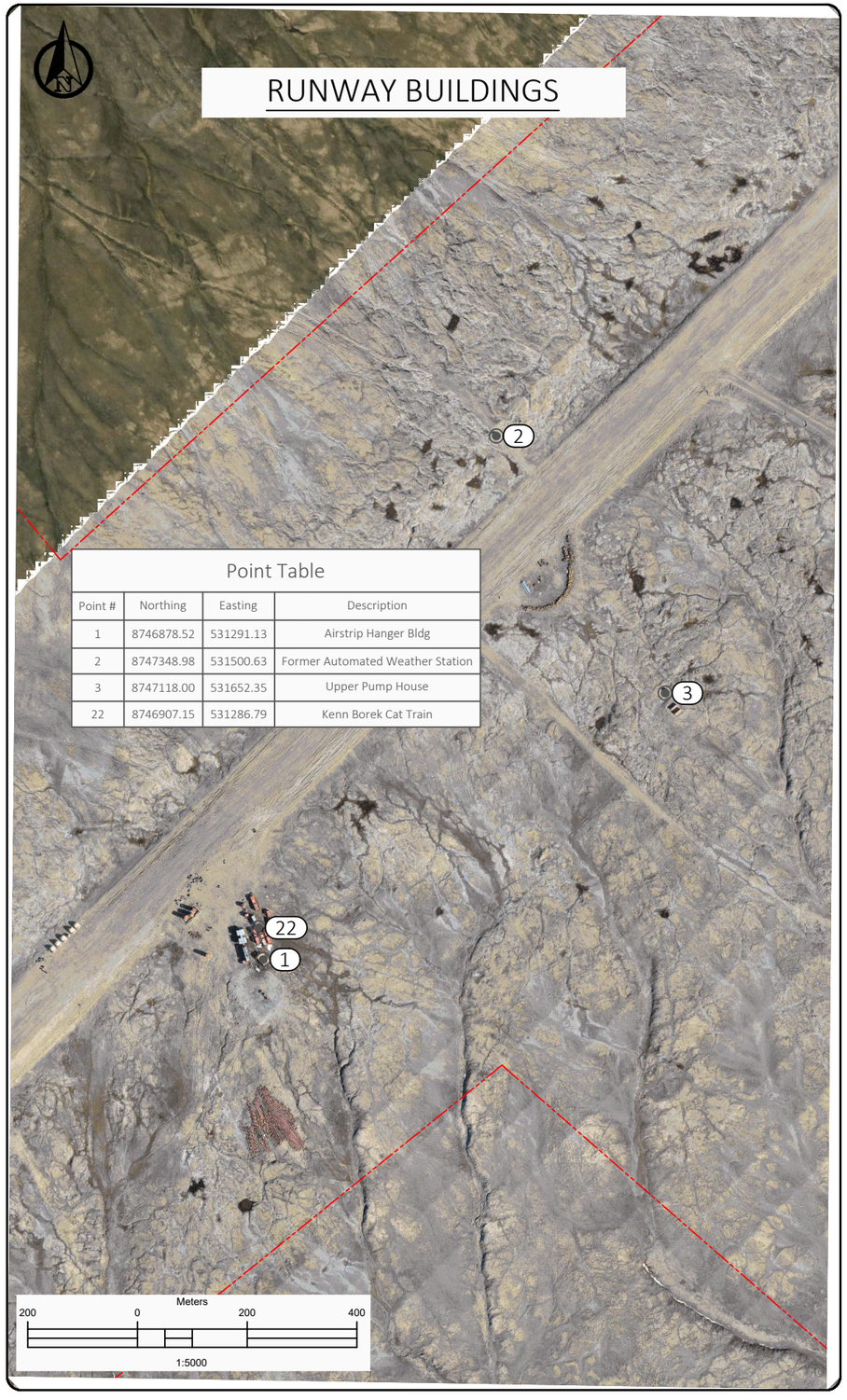
REMEDIAL ACTION PLAN- FIGURE 5

EXISTING CONDITIONS- AST LOCATIONS

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P2023-16	J.MILLS	VARIES
CLIENT PROJECT NUMBER:	CHECKED BY:	PUBLISH DATE:
R.125553.001	C.SADLER	2025-12-09

DRAWING NAME:	SHEET NUMBER:	REV:
P2023-16 ISACHSEN TANK LOCATIONS.dwg	FIGURE 5	00

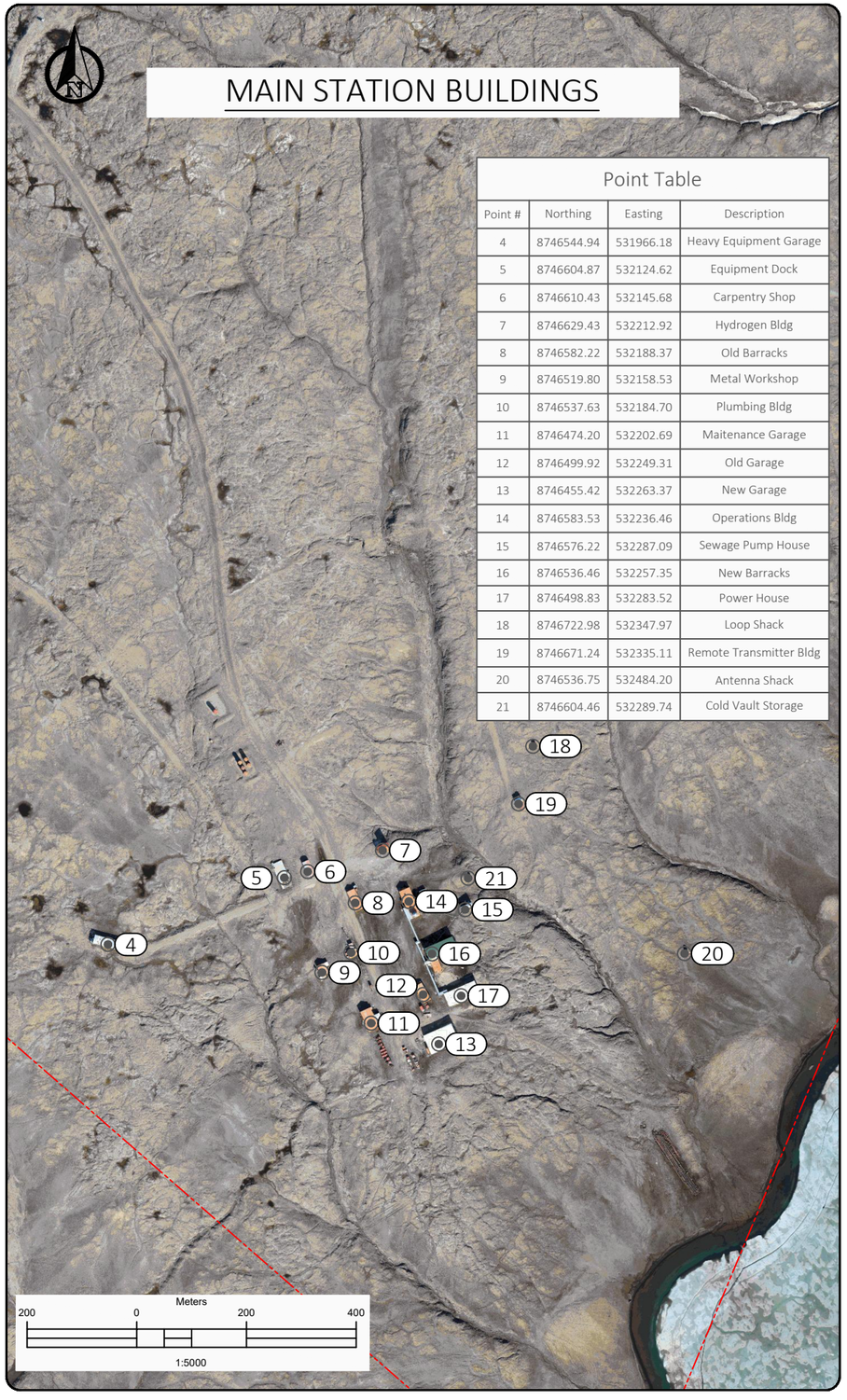
RUNWAY BUILDINGS



Point Table

Point #	Northing	Easting	Description
1	8746878.52	531291.13	Airstrip Hanger Bldg
2	8747348.98	531500.63	Former Automated Weather Station
3	8747118.00	531652.35	Upper Pump House
22	8746907.15	531286.79	Kenn Borek Cat Train

MAIN STATION BUILDINGS

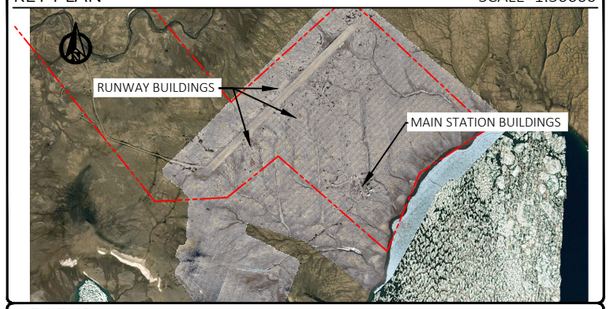


Point Table

Point #	Northing	Easting	Description
4	8746544.94	531966.18	Heavy Equipment Garage
5	8746604.87	532124.62	Equipment Dock
6	8746610.43	532145.68	Carpentry Shop
7	8746629.43	532212.92	Hydrogen Bldg
8	8746582.22	532188.37	Old Barracks
9	8746519.80	532158.53	Metal Workshop
10	8746537.63	532184.70	Plumbing Bldg
11	8746474.20	532202.69	Maitenance Garage
12	8746499.92	532249.31	Old Garage
13	8746455.42	532263.37	New Garage
14	8746583.53	532236.46	Operations Bldg
15	8746576.22	532287.09	Sewage Pump House
16	8746536.46	532257.35	New Barracks
17	8746498.83	532283.52	Power House
18	8746722.98	532347.97	Loop Shack
19	8746671.24	532335.11	Remote Transmitter Bldg
20	8746536.75	532484.20	Antenna Shack
21	8746604.46	532289.74	Cold Vault Storage

KEY PLAN

SCALE=1:50000



LEGEND

	DFRP PROPERTY LINE
23	BUILDING LOCATION AND ID

GENERAL NOTES

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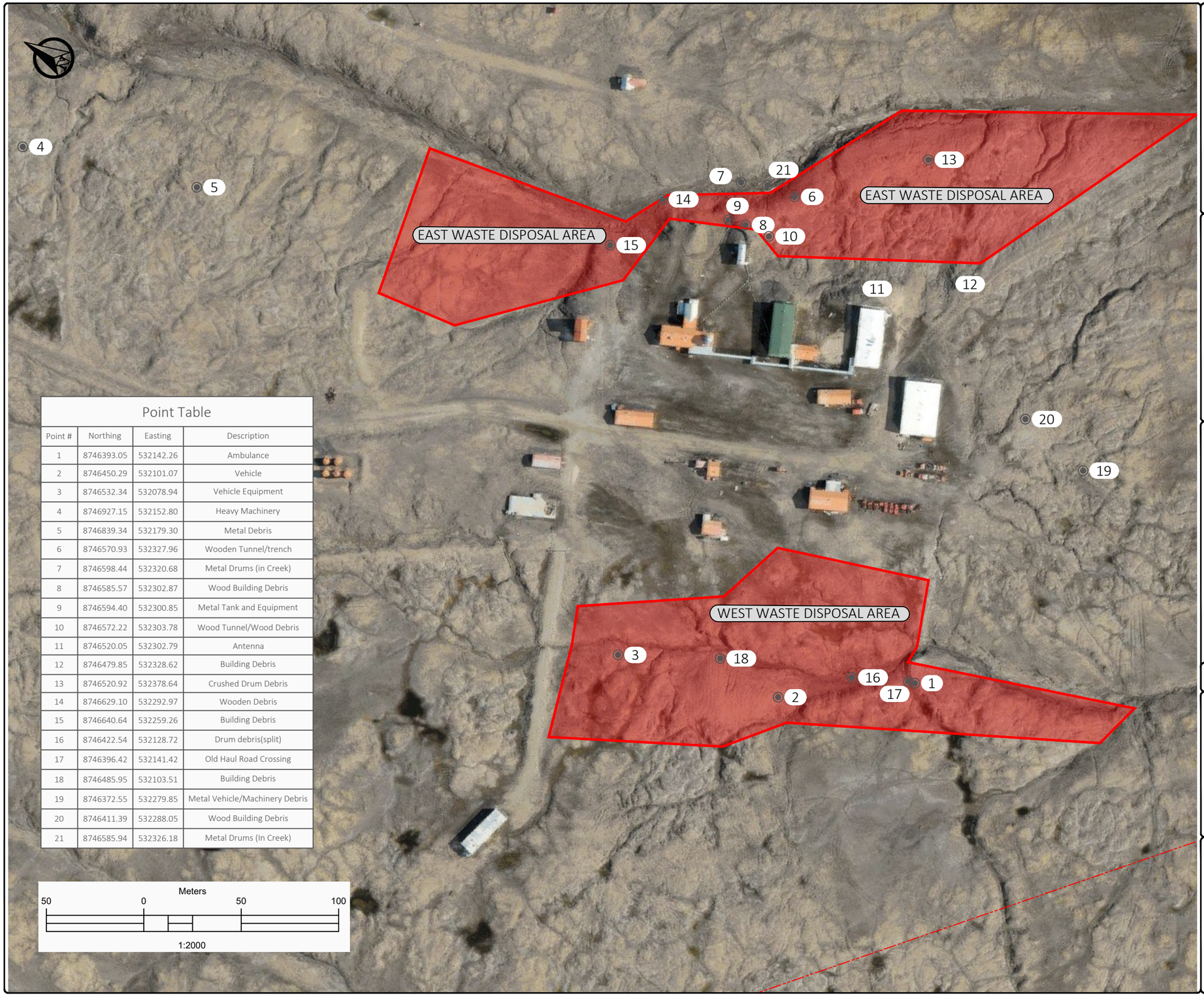
ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN- FIGURE 6

EXISTING CONDITIONS- BUILDING LOCATIONS

OUTCOME PROJECT NUMBER:	DRAWN BY:	SCALE:
P2023-16	J.MILLS	1:5000
CLIENT PROJECT NUMBER:	CHECKED BY:	PUBLISH DATE:
R.125553.001	C.SADLER	2025-02-27
DRAWING NAME:	SHEET NUMBER:	REV:
P2023-16 ISACHSEN BUILDING LOCATIONS.dwg	FIGURE 6	00



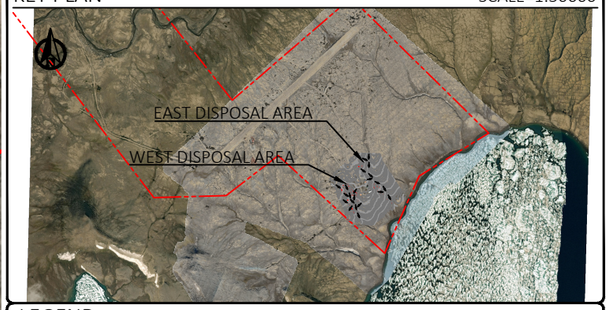
Point Table

Point #	Northing	Easting	Description
1	8746393.05	532142.26	Ambulance
2	8746450.29	532101.07	Vehicle
3	8746532.34	532078.94	Vehicle Equipment
4	8746927.15	532152.80	Heavy Machinery
5	8746839.34	532179.30	Metal Debris
6	8746570.93	532327.96	Wooden Tunnel/trench
7	8746598.44	532320.68	Metal Drums (in Creek)
8	8746585.57	532302.87	Wood Building Debris
9	8746594.40	532300.85	Metal Tank and Equipment
10	8746572.22	532303.78	Wood Tunnel/Wood Debris
11	8746520.05	532302.79	Antenna
12	8746479.85	532328.62	Building Debris
13	8746520.92	532378.64	Crushed Drum Debris
14	8746629.10	532292.97	Wooden Debris
15	8746640.64	532259.26	Building Debris
16	8746422.54	532128.72	Drum debris(split)
17	8746396.42	532141.42	Old Haul Road Crossing
18	8746485.95	532103.51	Building Debris
19	8746372.55	532279.85	Metal Vehicle/Machinery Debris
20	8746411.39	532288.05	Wood Building Debris
21	8746585.94	532326.18	Metal Drums (In Creek)

Meters
50 0 50 100
1:2000

KEY PLAN

SCALE=1:50000



LEGEND

23	BUILDING LOCATION AND ID
	WASTE DISPOSAL AREAS
	DFRP PROPERTY LINE

GENERAL NOTES

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ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

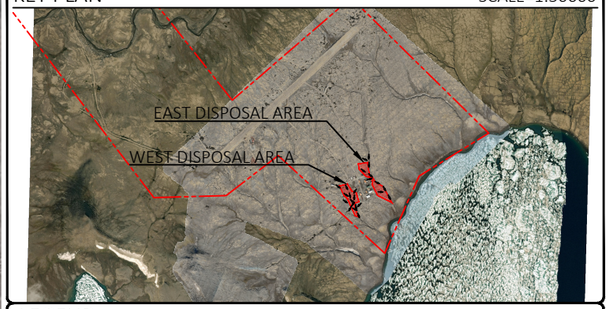
REMEDIAL ACTION PLAN- FIGURE 8

EXISTING CONDITIONS- SCATTERED WASTE DEBRIS LOCATIONS

OUTCOME PROJECT NUMBER:	DRAWN BY:	SCALE:
P2023-16	J.MILLS	1:2000
CLIENT PROJECT NUMBER:	CHECKED BY:	PUBLISH DATE:
R.125553.001	C.SADLER	2025-02-27
DRAWING NAME:	SHEET NUMBER:	REV:
P2023-16 ISACHSEN WASTE DISPOSAL AREAS.dwg	FIGURE 8	00



KEY PLAN SCALE=1:50000



LEGEND

	WASTE DISPOSAL AREAS
	EXISTING MINOR CONTOUR
100	EXISTING MAJOR CONTOUR
	DFRP PROPERTY LINE
	DRAINAGE FLOW ARROW

GENERAL NOTES

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ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN- FIGURE 9

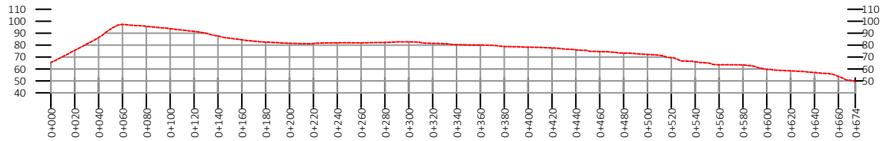
EXISTING CONDITIONS- WDA LOCATIONS, DRAINAGE AND TOPOGRAPHY

OUTCOME PROJECT NUMBER:	DRAWN BY:	SCALE:
P2023-16	J.MILLS	VARIES
CLIENT PROJECT NUMBER:	CHECKED BY:	PUBLISH DATE:
R.125553.001	C.SADLER	2025-02-28
DRAWING NAME:	SHEET NUMBER:	REV:
P2023-16 ISACHSEN WASTE DISPOSAL AREAS.dwg	FIGURE 9	00

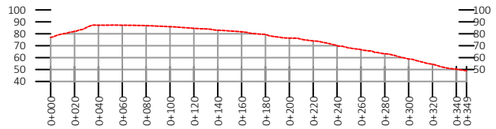
PROPOSED HAUL ROAD

AGGREGATE PROCESSING AREA

PROFILE VIEW OF PROPOSED BORROW SECTION A-A'



PROFILE VIEW OF PROPOSED BORROW SECTION B-B'

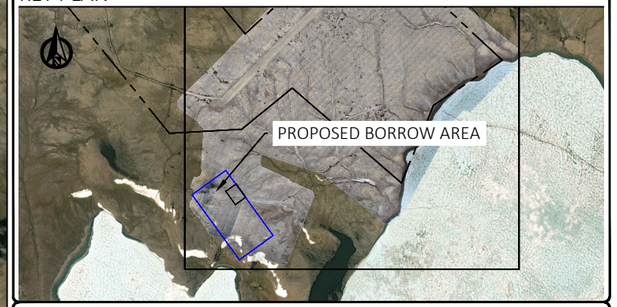


Point Table

Point #	Northing	Easting
1	8746093.62	530947.44
2	8745548.30	531343.86
3	8745344.54	531061.05
4	8745889.85	530664.63

Meters
100 0 100 200
1:5000

KEY PLAN



LEGEND

	PROPOSED HAUL ROAD
	PROPOSED BORROW AREA
	PROPOSED CONTRACTOR LAYDOWN AREA
	DFRP PROPERTY LINE
	EXISITING GROUND

GENERAL NOTES

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ISACHSEN HIGH ARCTIC WEATHER STATION

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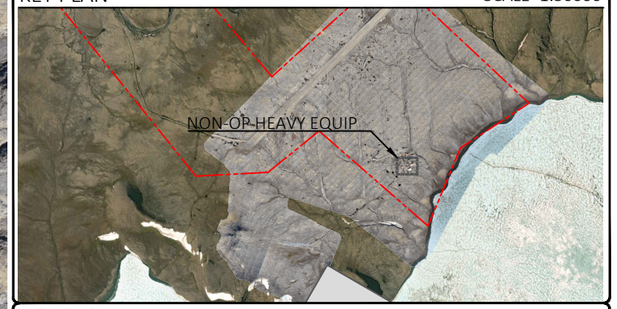
REMEDIAL ACTION PLAN- FIGURE 10

PROPOSED BORROW AREA AND FACILITIES

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P2023-16	J.MILLS	1:5000
CLIENT PROJECT NUMBER:	CHECKED BY:	PUBLISH DATE:
R.125553.001	C.SADLER	2025-03-03
DRAWING NAME:	SHEET NUMBER:	REV:
P2023-16 ISACHSEN BORROW ASSESSMENT_recover.dwg	FIGURE 10	00



KEY PLAN SCALE=1:50000



LEGEND

	DFRP PROPERTY LINE

GENERAL NOTES

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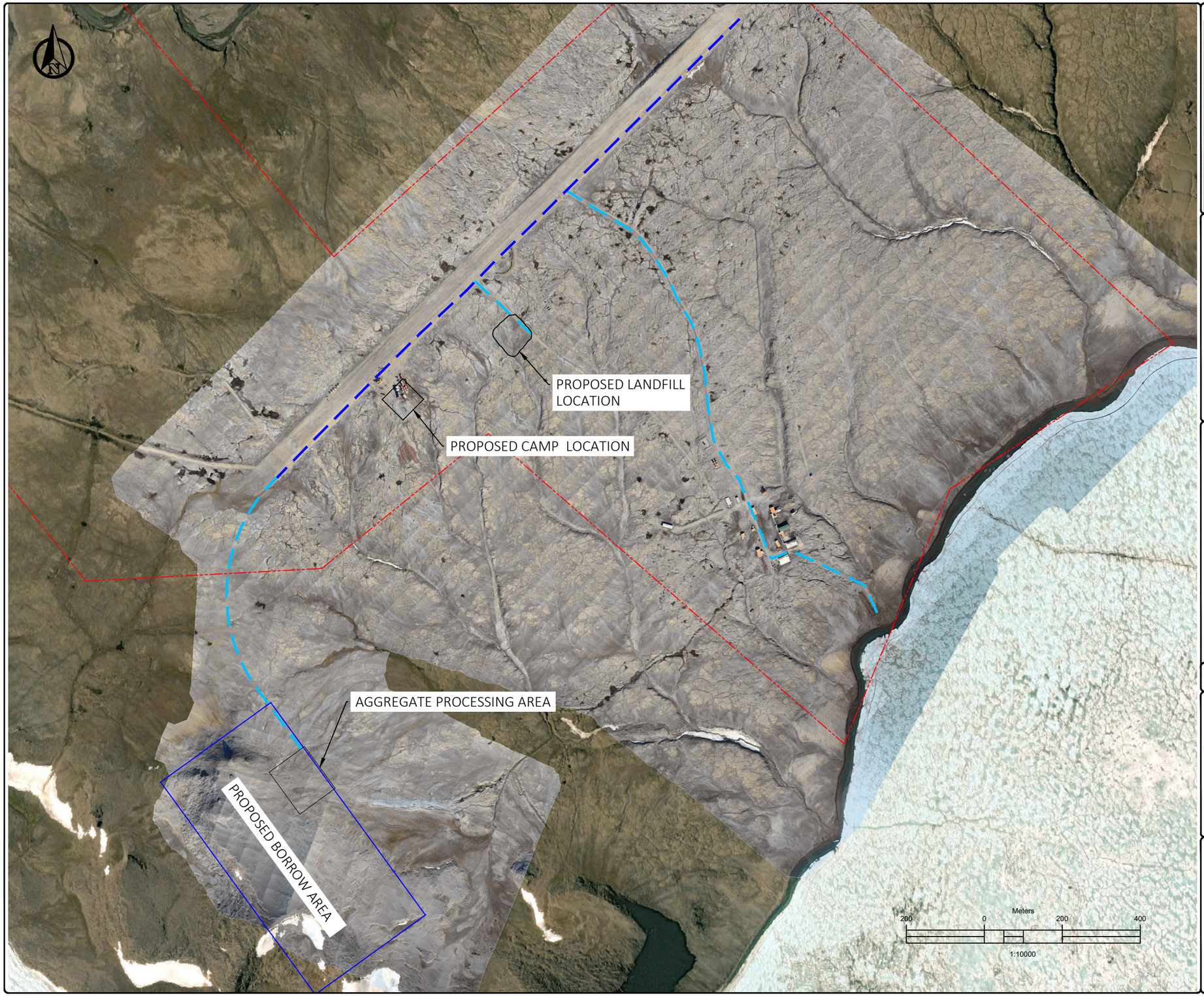
ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

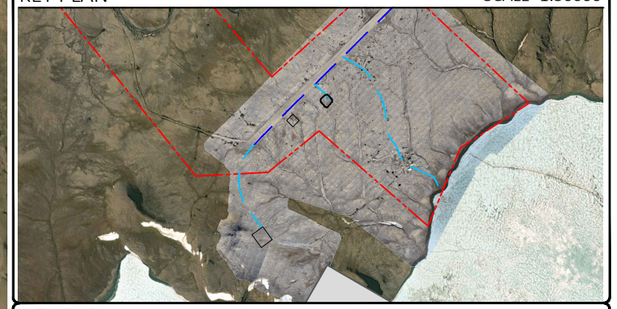
REMEDIAL ACTION PLAN- FIGURE 7

EXISTING CONDITIONS- LOCATION OF NON-OPERATIONAL HEAVY EQUIPMENT

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CLIENT PROJECT NUMBER: R.125553.001	CHECKED BY: C.SADLER	PUBLISH DATE: 2025-02-27
DRAWING NAME: P2023-16 ISACHSEN RAP FIGURES.dwg	SHEET NUMBER: FIGURE 7	REV: 00



KEY PLAN SCALE=1:50000



LEGEND

	PROPOSED HAUL ROAD
	PROPOSED HAUL ROAD ALONG AIRSTRIP
	PROPOSED BORROW AREA
	DFRP PROPERTY LINE

GENERAL NOTES

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K1Y 0Y2
t:613.729.2402

ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN- FIGURE 11

PROPOSED TEMPORARY ROAD NETWORK

OUTCOME PROJECT NUMBER: P2023-16	DRAWN BY: C.PETERKA	SCALE: 1:10000
CLIENT PROJECT NUMBER: R.125553.001	CHECKED BY: C.SADLER	PUBLISH DATE: 2025-03-03
DRAWING NAME: P2023-16 ISACHSEN RAP FIGURES.dwg	SHEET NUMBER: FIGURE 11	REV: 00



KEY PLAN SCALE=1:50000



LEGEND

	DFRP PROPERTY LINE
	PROPOSED CAMP PAD

GENERAL NOTES

1. ALL UNITS IN METERS UNLESS OTHERWISE NOTED.
2. COORDINATE SYSTEM IS NAD83 (CSRS) / UTM ZONE 13N

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ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN- FIGURE 12

PROPOSED TEMPORARY CONTRACTOR FACILITIES

OUTCOME PROJECT NUMBER:	DRAWN BY:	SCALE:
P2023-16	C.PETERKA	1:500
CLIENT PROJECT NUMBER:	CHECKED BY:	PUBLISH DATE:
R.125553.001	C.SADLER	2025-03-05
DRAWING NAME:	SHEET NUMBER:	REV:
P2023-16 ISACHSEN RAP FIGURES.dwg	FIGURE 12	00

PROPOSED LANDFILL FOOTPRINT
(OPERATIONS)

BERM CREST

BERM INNER TOE
ELEVATION=50.5m

B
13A

A
13A

A'
13A

B'
13A

EL:51.84
EL:???
EL:49.50
EL:51.58
EL:50.50
EL:49.08
EL:49.50
EL:50.58
EL:51.48
EL:51.42

-2.0%

52.00
51.00
50.00
49.00
48.00
47.00
46.00

EXISTING ROAD

Meters
10 0 10 20
1:500

KEY PLAN



LEGEND

	DFRP PROPERTY LINE
50.00	EXISTING MAJOR CONTOUR
51.00	EXISTING MINOR CONTOUR
50.00	PROPOSED MAJOR CONTOUR
51.00	PROPOSED MINOR CONTOUR
	PROPOSED HAUL ROAD IMPROVEMENTS

GENERAL NOTES

1. ALL UNITS IN METERS UNLESS OTHERWISE NOTED.
2. COORDINATE SYSTEM IS NAD83 (CSRS) / UTM ZONE 13N
3. HAUL ROAD USE FOR ACCESS TO LANDFILL AND BACKING UP OF TRUCKS. PRIOR TO FINAL FILLING EAST BERM TO BE INSTALLED.

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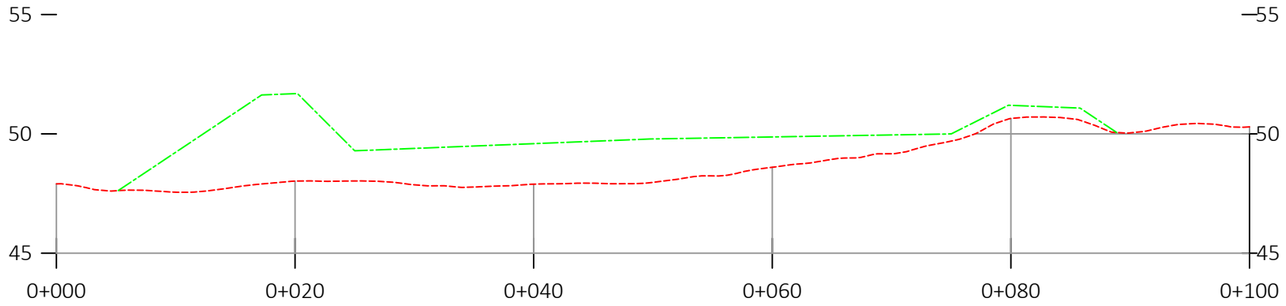
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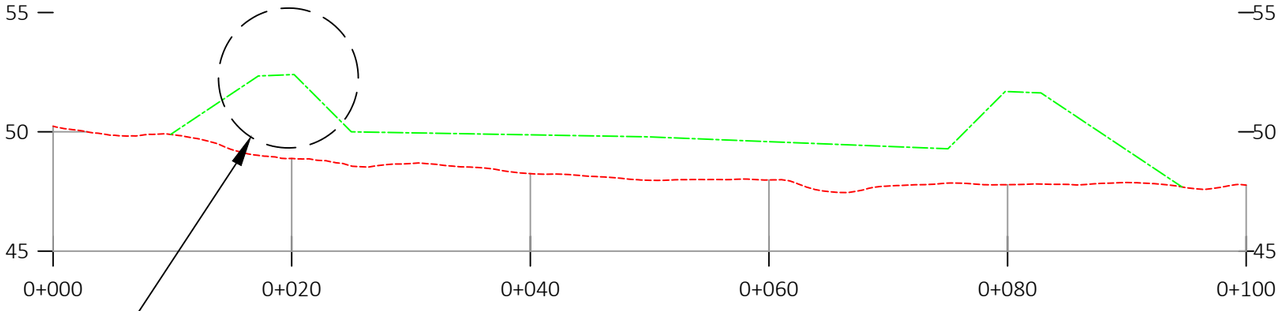
ISACHSEN HIGH ARCTIC WEATHER STATION
ELLEF RINGNESS ISLAND, NUNAVUT
REMEDIAL ACTION PLAN- FIGURE 13
PROPOSED LANDFILL- INTERIM GRADING PLAN (LANDFILL OPERATION)

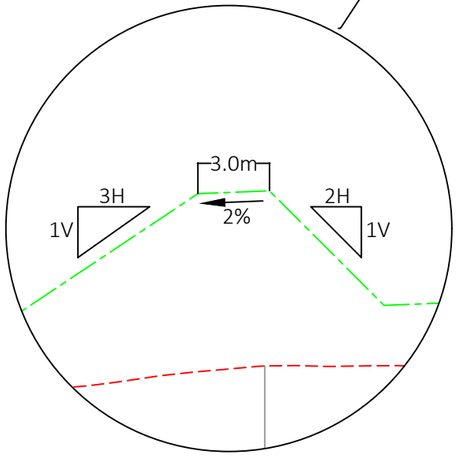
OUTCOME PROJECT NUMBER:	DRAWN BY:	SCALE:
P2023-16	J.MILLS	1:500
CLIENT PROJECT NUMBER:	CHECKED BY:	PUBLISH DATE:
R.125553.001	M.BILLOWITS	2025-03-05
DRAWING NAME:	SHEET NUMBER:	REV:
NP2023-16 PSPC LANDFILL_V4 FIGURE 13-1 ONLY OPERATIONS.dwg	FIGURE 13	00

PROFILE VIEW OF A TO A' (SEE FIGURE 13)
HORIZONTAL SCALE 1:500 VERTICAL SCALE 1:250



PROFILE VIEW OF B TO B' (SEE FIGURE 13)
HORIZONTAL SCALE 1:500 VERTICAL SCALE 1:250





TYPICAL BERM DETAIL
N.T.S.

KEY PLAN



LEGEND

	DFRP PROPERTY LINE
	LANDFILL BASE (DURING OPERATIONS)
	EXISTING GROUND

GENERAL NOTES

1. ALL UNITS IN METERS UNLESS OTHERWISE NOTED.
2. COORDINATE SYSTEM IS NAD83 (CSRS) / UTM ZONE 13N

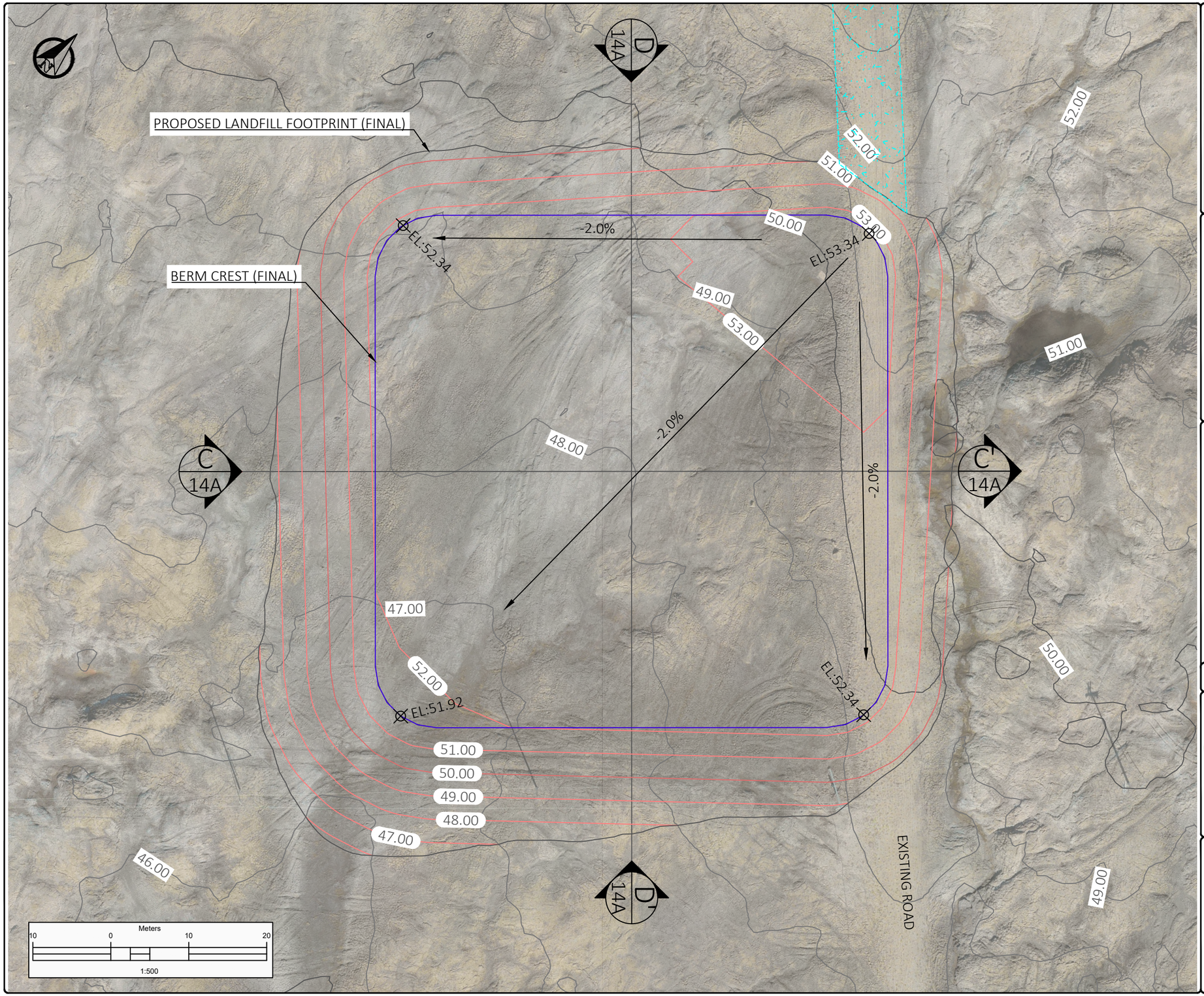
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ISACHSEN HIGH ARCTIC WEATHER STATION
ELLEF RINGNESS ISLAND, NUNAVUT
REMEDIAL ACTION PLAN- FIGURE 13A
PROPOSED LANDFILL- INTERIM GRADING PLAN (LANDFILL OPERATION)

OUTCOME PROJECT NUMBER:	DRAWN BY:	SCALE:
P2023-16	J.MILLS	H:500 V:250
CLIENT PROJECT NUMBER:	**CHECKED BY:**	**PUBLISH DATE:**
R.125553.001	M.BILLOWITS	2025-02-26
DRAWING NAME:	**SHEET NUMBER:**	**REV:**
NP2023-16 PSPC LANDFILL_V4 FIGURE 13-1 ONLY OPERATIONS.dwg	FIGURE 13A	00



KEY PLAN



LEGEND

	DFRP PROPERTY LINE
	PROPOSED LANDFILL DESIGN LINES
50.00	EXISTING MAJOR CONTOUR
51.00	EXISTING MINOR CONTOUR
50.00	PROPOSED MAJOR CONTOUR
51.00	PROPOSED MINOR CONTOUR
	PROPOSED HAUL ROAD IMPROVEMENTS

GENERAL NOTES

1. ALL UNITS IN METERS UNLESS OTHERWISE NOTED.
2. COORDINATE SYSTEM IS NAD83 (CSRS) / UTM ZONE 13N

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ISACHSEN HIGH ARCTIC WEATHER STATION

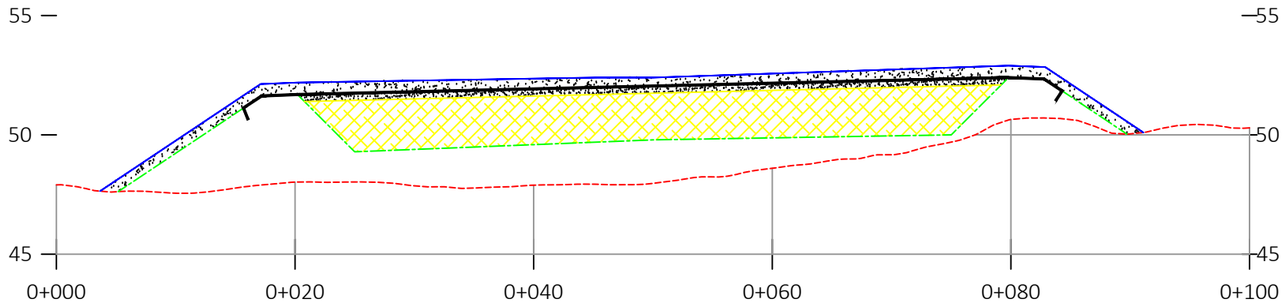
ELLIF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN- FIGURE 14

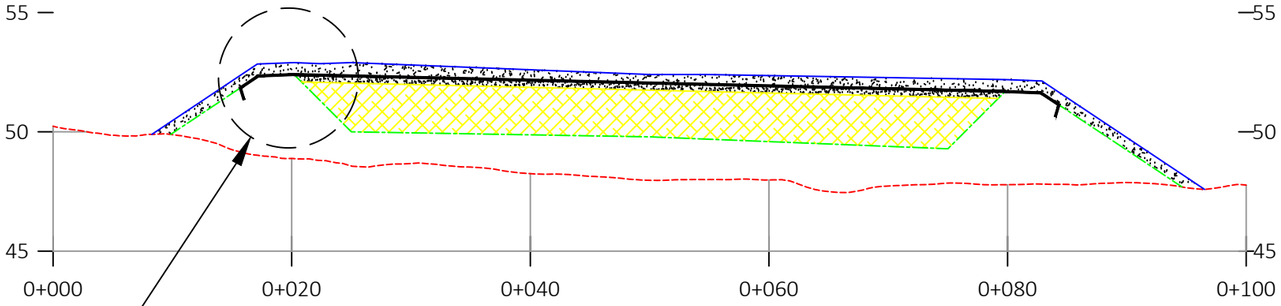
PROPOSED LANDFILL- FINAL DESIGN GRADING PLAN (LANDFILL CLOSURE)

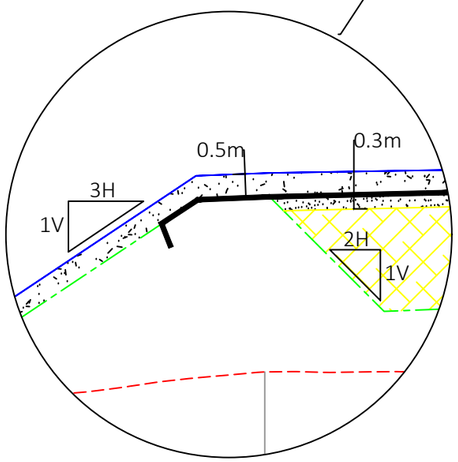
OUTCOME PROJECT NUMBER: P2023-16	DRAWN BY: J.MILLS	SCALE: 1:500
CLIENT PROJECT NUMBER: R.125553.001	CHECKED BY: M.BILLOWITS	PUBLISH DATE: 2025-03-04
DRAWING NAME: NP2023-16 PSPC LANDFILL_V4 FIGURE 14-1 ONLY.dwg	SHEET NUMBER: FIGURE 14	REV: 00

PROFILE VIEW OF C TO C' (SEE FIGURE 14)
HORIZONTAL SCALE 1:500 VERTICAL SCALE 1:250



PROFILE VIEW OF D TO D' (SEE FIGURE 14)
HORIZONTAL SCALE 1:500 VERTICAL SCALE 1:250





TYPICAL BERM DETAIL
N.T.S.

KEY PLAN



LEGEND

	DFRP PROPERTY LINE
	PROPOSED LANDFILL FOOTPRINT
	EXISTING GROUND
	PROPOSED LANDFILL BASE
	FINAL LANDFILL INERT WASTE LEVEL
	LINER
	FINAL LANDFILL COVER
	INERT WASTE WITH INTERIM COVER MATERIAL
	LINER SUBGRADE FILL
	GRANULAR LINER PROTECTION COVER

GENERAL NOTES

1. ALL UNITS IN METERS UNLESS OTHERWISE NOTED.
2. COORDINATE SYSTEM IS NAD83 (CSRS) / UTM ZONE 13N

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ISACHSEN HIGH ARCTIC WEATHER STATION
ELLIF RINGNESS ISLAND, NUNAVUT
REMEDIAL ACTION PLAN- FIGURE 14A
PROPOSED LANDFILL- FINAL PROFILE (LANDFILL CLOSURE)

OUTCOME PROJECT NUMBER:	DRAWN BY:	SCALE:
P2023-16	J.MILLS	H:500 V:250
CLIENT PROJECT NUMBER:	**CHECKED BY:**	**PUBLISH DATE:**
R.125553.001	M.BILLOWITS	2025-03-04
DRAWING NAME:	**SHEET NUMBER:**	**REV:**
NP2023-16 PSPC LANDFILL_V4 FIGURE 14-1 ONLY.dwg	FIGURE 14A	00

Appendix B

Site Photos

ESA Photo Log – Isachsen HAWS, NU



Photo 1: PFAs sampling near fire bowser beside AEC 23: Old Garage, view southeast. (July 19, 2023)

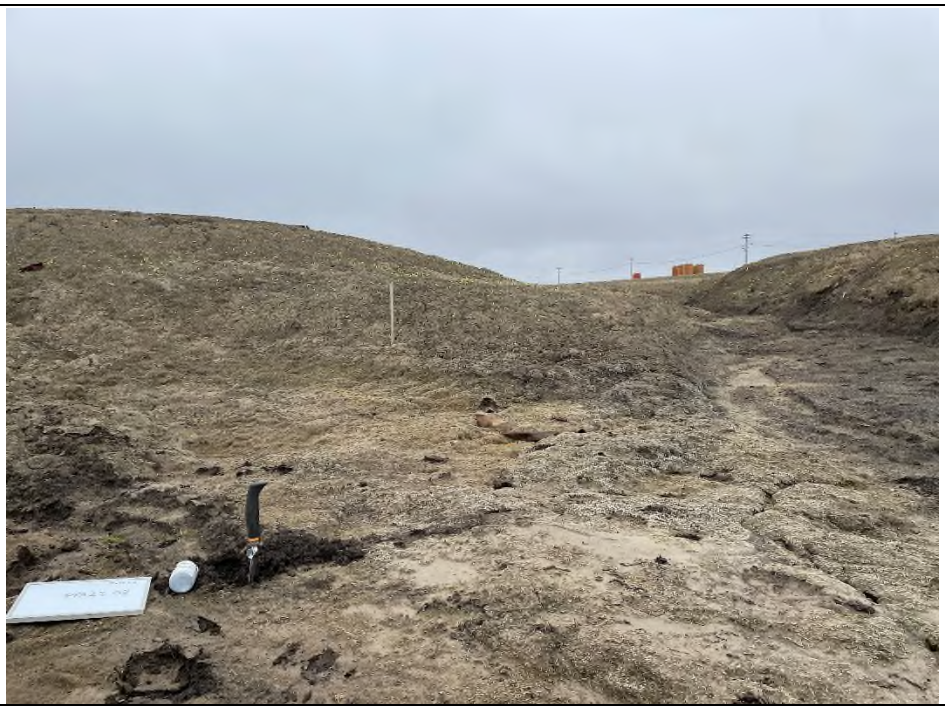


Photo 2: PFAs sampling at toe of AEC 1: West Gully Waste Disposal Area (WDA), view north. (July 20, 2023)

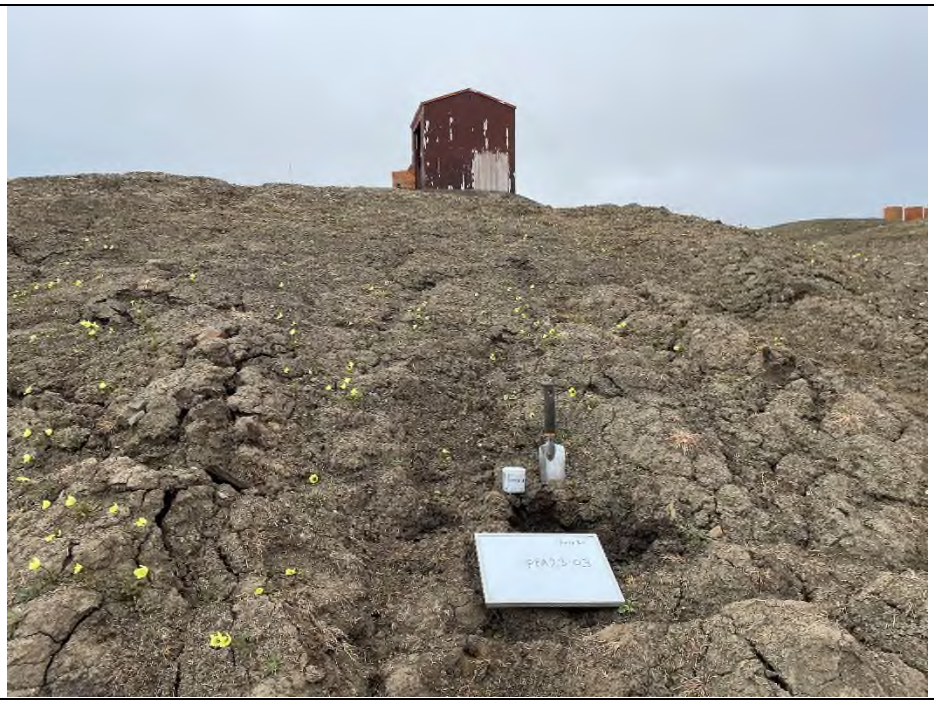


Photo 3: PFAs sampling in AEC 2: East Gully WDA, view west. (July 20, 2023)

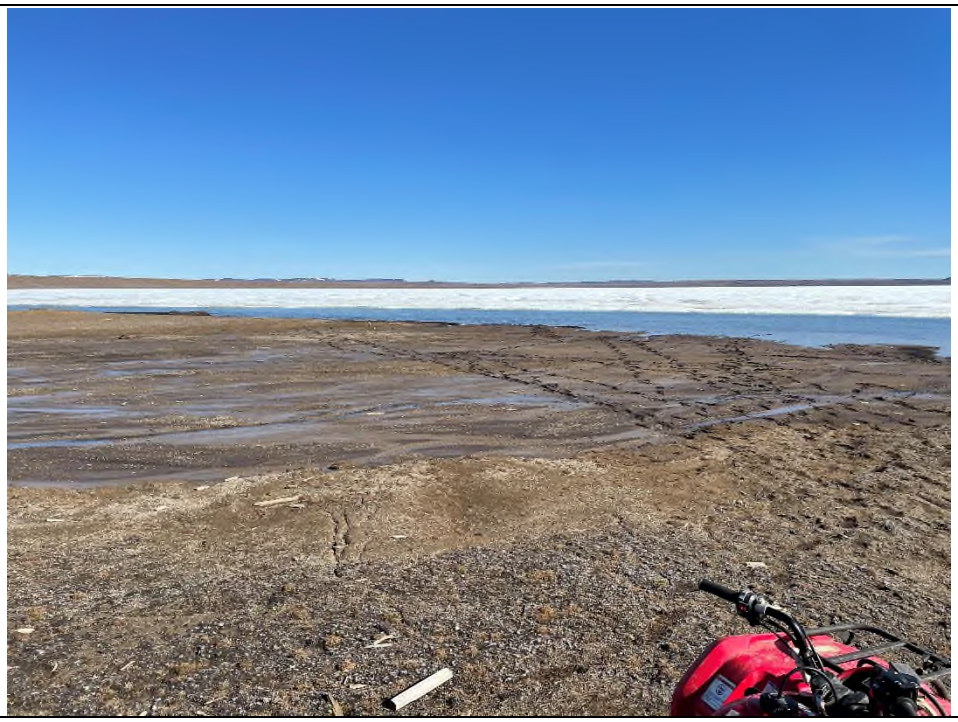


Photo 4: Sediment sampling at AEC 3 Shoreline Barrel Dump Delta, view southeast. (July 16, 2022)



Photo 5: Sediment sampling at AEC 26 Shoreline West Delta, view south. (July 16, 2022)

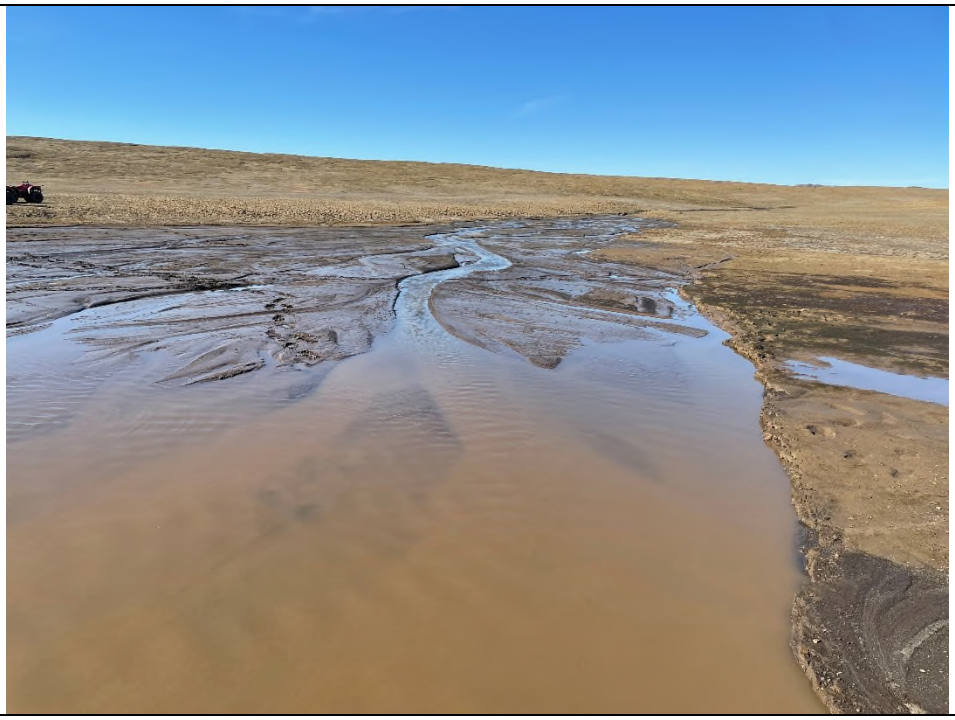


Photo 6: Sediment sampling at AEC 26 Shoreline East Delta, view north. (July 16, 2022)



Photo 7: Surface water sampling in AEC 1: West Gully WDA (Sample location SW23-WD-02), view northwest. (July 17, 2023)



Photo 8: Surface water sampling in AEC 1: West Gully WDA (Sample location SW23-WD-01), view northwest. (July 17, 2023)



Photo 9: Surface water sampling in AEC 2: East Gully WDA (Sample location SW23-BD-02), view north. (July 17, 2023)



Photo 10: Surface water sampling in AEC 2: East Gully WDA (Sample location SW23-BD-01), view northwest. (July 17, 2023)



Photo 11: Surface water sampling near AEC 4: East Runway WDA/Drum Dump (Sample location SW23-ED-01), view northwest. (July 17, 2023)



Photo 12: Pan view of surface water sampling of the river located 1.8km north of Runway (Sample location SW23-ED-01), view east. (July 20, 2023)



Photo 13: Pan view of surface water sampling of the river located 1.8km north of Runway (Sample location SW23-ED-01), view north. (July 20, 2023)



Photo 14: Pan view of surface water sampling of the river located 1.8km north of Runway (Sample location SW23-ED-01), view west. (July 20, 2023)



Photo 15: Dead Rock Ptarmigan discovered near the Main Station area. (July 19, 2023)

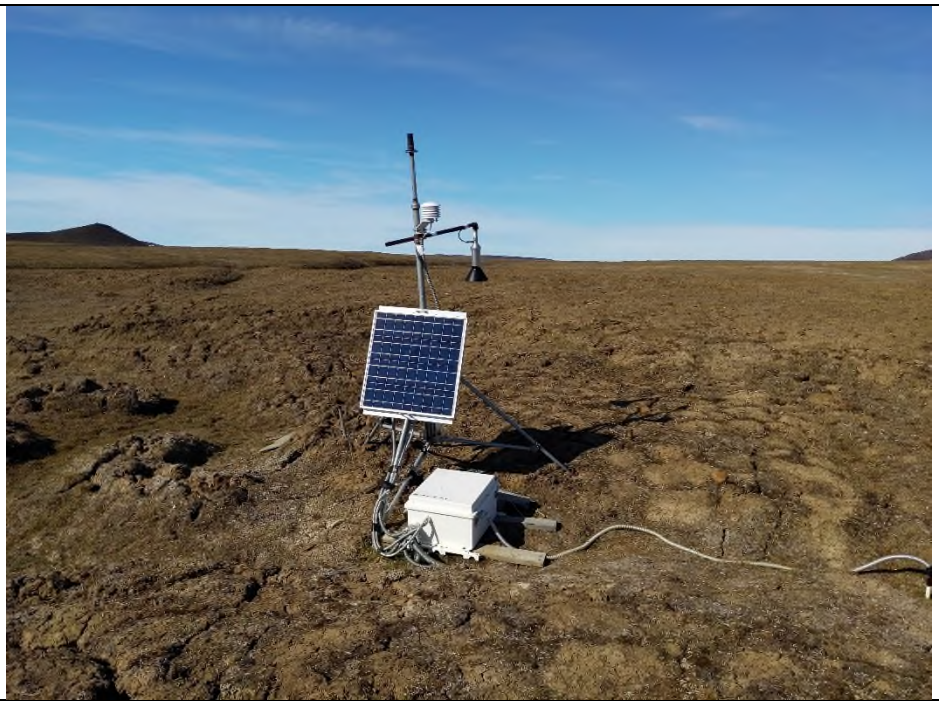


Photo 16: Existing Thermistor (operated by University of Alaska Fairbanks) discovered southwest of AEC 5 West Runway Drum Dump, view north (July 18, 2023)

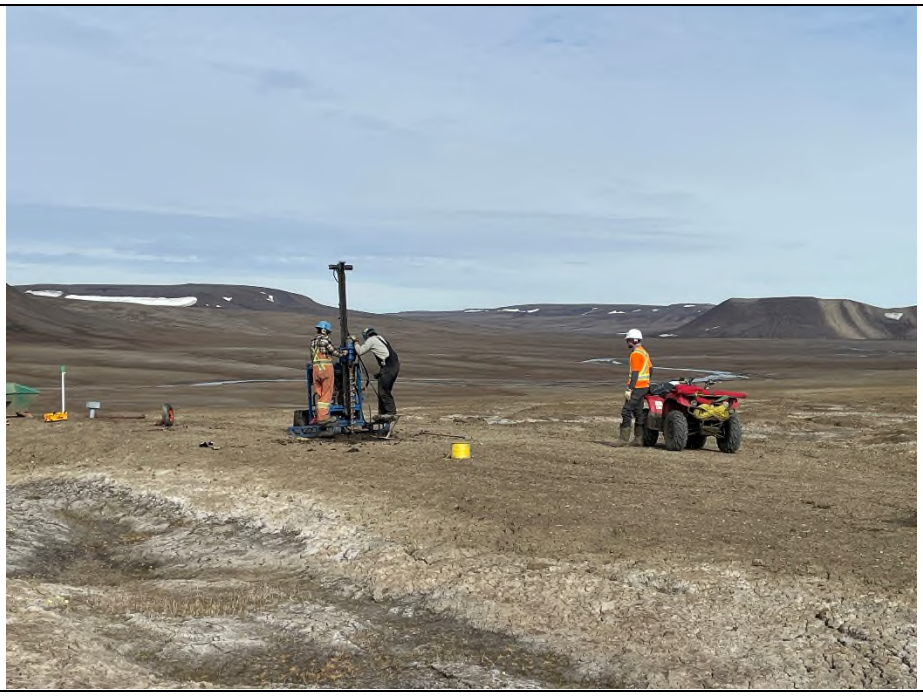


Photo 17: Re-drill of Thermistor 1 (THERM23-01B) located north of Runway, view north (July 22, 2023)



Photo 18: Final installation of Thermistor 1 (THERM23-01B) located north of Runway, view south (July 27, 2023)



Photo 19: Drilling Thermistor 2 (THERM23-02) near AEC 13: New Garage under wet rainy conditions, view north. (July 23, 2023)



Photo 20: Soil conditions (permafrost) on auger drilling of Thermistor 2 (THERM23-02) near AEC 13: New Garage under wet rainy conditions, view northeast. (July 23, 2023)



Photo 21: Final installation of Thermistor 2 (THERM23-02) near AEC 13: New Garage, view southwest. (July 27, 2023)



Photo 22: Programming of Thermistor 2 (THERM23-02) near AEC 13: New Garage, view southwest. (July 27, 2023)





Photo 23/24/25: Drilling, PVC stick up and install of thermistor string for Thermistor 3 (THERM23-03) in the AEC 2: East Gully WDA, view west. (July 24 and 27, 2023). This thermistor string went down to 5.9 m below ground.




Photo 26/27: THERM23-04 (southwest of AEC 25: Former Empty Barrel Storage Area) PVC install and addition of sand for install, view west. (July 24/27, 2023)



Photo 28: Drilling THERM23-05 in AEC 1: West Gully WDA, view northwest. (July 24, 2023)



Photo 29: Final installation of THERM23-05 in AEC 1: West Gully WDA, view southeast. (July 27, 2023)

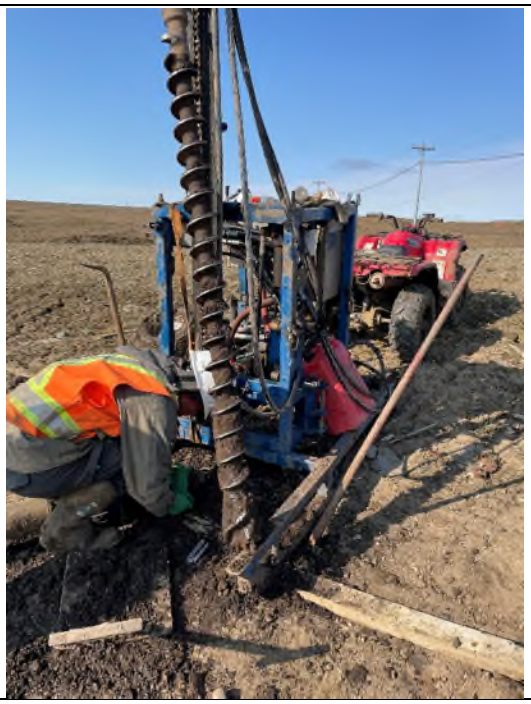




Photo 30: Drilling of THERM23-06 east of AEC 9: Heavy Equipment Garage, view north. (July 25, 2023)

Photo 31: Final installation of THERM23-06 east of AEC 9: Heavy Equipment Garage, view west. (July 27, 2023)

Appendix C

Community Consultation Report

PUBLIC SERVICES AND PROCUREMENT CANADA

COMMUNITY ENGAGEMENT EVENT REPORT FOR: ISACHSEN HIGH ARCTIC WEATHER STATION (HAWS), NUNAVUT, DECOMMISSIONING PLAN

Prepared on behalf of Environment and Climate Change Canada (ECCC)

DFRP #: 07527 **Final Report** **FCSI #: 07525123**



Isachsen Community Engagement Session in Resolute Bay January 29, 2025

March 2025

151 Holland Ave.
Suite 200
Ottawa, Ontario
Canada
K1Y 0Y2
Telephone
613.729.2402

March 12, 2025

Environmental Services and Contaminated Management
Public Services and Procurement Canada
9700 Jasper Ave NW, Suite 1000
Edmonton, Alberta T5J 4C3

Attention: Michael Brownlee
Senior Environmental Specialist

Dear Mr. Brownlee:

Nuqsana-Outcome Joint Venture (NOJV) are pleased to provide Public Services and Procurement Canada (PSPC) with the attached report on Community Engagement event held in Resolute Bay on the subject of Decommissioning and Clean-Up Plan for Environment and Climate Change Canada's Isachsen High Arctic Weather Station.

Should you have any questions or comments, please contact the undersigned at your convenience.

Yours truly,

NUQSANA-OUTCOME JOINT VENTURE

Don Plenderleith, M.Sc., P.Eng. (NU/NWT)
Environmental Division Manager

Keelan Veitch, B.Sc.
Senior Environmental Project Manager

Our File: NP2023-16

Nuqsana-Outcome

Table of Contents

Executive Summary 1

1.0 **Community Engagement Meeting Details** 2

1.1 Time, Date and Location 2

1.2 Publicizing the Event 3

1.3 Facilitators 3

1.4 Event Details 4

2.0 **Transcript of Question/Answer Session** 5

3.0 **Overall Assessment** 8

Appendices

A Notification Posters

B List of Participants

C Presentation (English)

D Presentation (Inuktitut)

E Site Figures

F Handout

G Photo Log

Executive Summary

Members from the two communities closest (Resolute Bay and Grise Fiord) to the Isachsen High Arctic Weather Station, Nunavut (the Site) were invited to a Community Engagement meeting at which the current decommissioning and clean-up plans for the Site were presented and community feedback was received. The meeting was held at the South Camp Inn in Resolute Bay, Nunavut on January 29, 2025 from 4 to 6 PM (CST). The meeting was facilitated by representatives from Environment and Climate Change Canada (ECCC), Public Services and Procurement Canada (PSPC) and consultants from Nuqsana-Outcome Joint Venture (NOJV), who have been providing environmental site assessment and remedial planning services for the project for the past three years.

The session attracted approximately 18 participants from Resolute Bay and 2 participants from Grise Fiord and included a cross-section of community representatives, from Elders through to young people. The facilitators gave a presentation which covered the history of Isachsen from its start to present day, and described its current conditions, the types of wastes present, and the current remediation plans. Also presented were the timelines, procurement plan and opportunities for Inuit involvement in the remediation of the site. Slides were presented in both English and Inuktitut (North Baffin dialect). There was much interest in the plan in the form of information given and questions received from the participants which were answered by the facilitators.

With the strong community participation at the meeting for the current decommissioning and clean-up plan for Isachsen, the federal government's consultation process for the project has been initiated and is well received.

1.0 Community Engagement Meeting Details

The Government of Canada has a Duty to Consult with Indigenous groups when it considers projects that might adversely impact Indigenous People and to make accommodations, where appropriate. In support of the federal government's Duty to Consult, Public Services and Procurement Canada (PSPC) and Environment and Climate Change Canada (ECCC), supported by consultants from Nuqsana Outcome Joint Venture (NOJV) conducted a Community Engagement session in Resolute Bay, Nunavut (NU) to present the draft Decommissioning and Clean-Up Plan (the Plan) for the Isachsen High Arctic Weather Station (the Site) and gather feedback from the community related to the Plan.

The purpose of Community Engagement session was to:

- Open a dialogue for engagement with the local communities about the project;
- Share information about the Site;
- Learn what the local residents know about the Site;
- Communicate the federal government's plans to clean up the Site;
- Provide the community with information on training and employment opportunities associated with the project; and
- Seek community input in order to finalize the Plan.

Resolute Bay was the staging location for Isachsen during its operational phase (1947 to 1978) and has been the staging location for the past three field seasons (2022, 2023 and 2024). People and businesses in Resolute Bay have been hired for the recent detailed environmental site assessment phase and there is a general awareness in the community of the project. People from Grise Fiord have had less involvement at the Site but the representatives for Grise Fiord said that they had previously worked and visited the Site on patrol with the Arctic Rangers.

1.1 Time, Date and Location

The Community Engagement session was held in a conference room at the ATCO South Camp Inn, in Resolute Bay on Wednesday, January 29, 2025 from 4 to 6 PM CST. Since it was over the dinner hour, food and refreshments were provided to the participants.

1.2 Publicizing the Event

Concerted efforts were made to publicize the Community Engagement in order to ensure that community members were aware of the event and that they had the opportunity to attend.

To reach the community in Grise Fiord, direct communication was undertaken with the Hamlet office. NOJV asked the Senior Administration Officer (SAO) to reach out to the community and try and find people interested in attending. The ASAO (Assistant Senior Administrative Officer) identified three people who were interested in attending. This required a time commitment of four days to fly from Grise Fiord to Resolute Bay on the Monday before the meeting, attend the event on the Wednesday and fly home on Thursday. The three people who expressed interest were the Mayor, a Councillor and a community resident. Later, the Mayor had to cancel and did not attend, however the Councillor and community resident did attend.

The publicity campaign in Resolute Bay started in early January with notices of the Community Engagement event in English and Inuktitut (see Notification Posters in **Appendix A**) being posted through the following lines of communication:

- Resolute Bay Swap-and-Sell Facebook site; and
- Physical copies placed in the Hamlet office, Co-Op store, Resolute Bay Airport and South Camp Inn;

Additional forms of publicity notification included:

- Direct phone calls and invitations to members of the Elder community;
- Word of mouth through NOJV's locally hired project personnel; and
- Word of mouth by NOJV personnel in town starting two days prior to the meeting (Jan 27, 2025).

1.3 Facilitators

The Community Engagement event was facilitated by a team composed of the following representatives of the government of Canada and the consulting team from NOJV.

Name	Affiliation	Role
Jordan Wilson	ECCC	Project Leader, Contaminated Sites Program
Owen Wade	ECCC	Project Officer
Michael Brownlee	PSPC	Project Manager: Site Assessment Program
Ryan Breivik	PSPC	Project Manager: Remediation Program
Dustin Martin	Dillon Consulting	Community Planner/Meeting Facilitator

Keelan Veitch	NOJV	Environmental Project Manager: Consultant
Don Plenderleith	NOJV	Environmental Division Manager: Consultant

1.4 Event Details

The doors to the venue opened at 4 PM (CST) for a 'soft start'. Rides to the event were offered and some participants took up the offer. All participants were signed in upon entry in order to gather the names and number of participants. Twenty (20) participants were signed in (see list of participants in **Appendix B**). Hardcopies of the presentation in both English and Inuktitut (North Baffin dialect) (see copies included in **Appendix C and D** respectively) and some site maps were available on the sign-in table. Figures showing the entire site with call outs were attached to the wall at two locations in the venue (see **Appendix E**). A photo loop showing hundreds of historic and recent photos of Isachsen was active on a monitor at the back of the room.

The presentation started at 4:30 PM (CST) with a four-minute video summarizing the history of Isachsen and the recent work done (available to view at https://www.youtube.com/watch?v=LNkwsXTpD1I). The MS-PowerPoint presentations in English and Inuktitut were projected via twin projectors onto the front of the room while the presenters made the verbal presentation in English. A translator had been booked but she was sick and could not attend. The presentation lasted an hour, including the questions from the participants and answers from the facilitators. A one-page handout (with English and Inuktitut) was provided to participants with contact information and additional resources regarding procurement (see **Appendix F**).

At 5:45 pm, there were draw prizes for the participants which included frozen char, tins of coffee, gift certificates at the Co-Op, and caribou jerky.

Refreshments (hot and cold) were provided by the hotel. The leftovers were given to the participants.

The event concluded at 6pm. Photos of event are included in **Appendix G**.

2.0 Transcript of Question/Answer Session

Note: the answers provided by the presenters were based on the draft plan presented and could change prior to execution.

1. Confirmation that waste will be buried on-site? As opposed to being removed from the Site?

The plan is to bury the non-hazardous waste on-site and remove the hazardous waste from the site. The new engineered waste disposal area (landfill) will look like the Transport Canada landfills located in Resolute at/near the airport once they are capped (MB). Environment Canada's continued use of the site (i.e. Automated Weather Station maintenance) will facilitate monitoring of the landfills into the foreseeable future (JW). Fuel will be incinerated this year (MB).

2. What about employment?

We would prefer to hire Inuit firms and people (MB).

3. What does ECCC consider clean? Referencing that impacts are present but risk is low.

There are published standards for 'clean' set out by the federal and/or territorial governments (JW). The clean-up standards and procedures will follow accepted practices used for all Northern sites such as DEW Line Sites (DP). The remedial plan will need approval from the Nunavut Planning Commission (NPC) prior to implementation of the decommissioning and clean up work. As well, the solution is not to walk away from the site but to manage non-hazardous waste, remove hazardous waste and continue to monitor the site (MB).

4. Will future monitoring be required? Will this be done remotely or in person?

Yes, site visits will be required in person. It will include thermistor downloads and other monitoring of the new landfill and the existing waste disposal areas (MB).

5. Acknowledgement and appreciation for the site clean up plan presented but why mention of cost to implement the program? Why was clean up not done during operation of the station? There are many old sites across the Arctic that are not cleaned up. Cost should not be the deciding factor.

This is a Government of Canada property and we intend to do it right. Since we will maintain ownership of the site, we will have a long-term monitoring plan in place. There is an unfortunate legacy of old research/mining/other sites across the Arctic that were abandoned when the owners went bankrupt (and are up to governments to clean up). In most cases, rules now stipulate that companies must put bonds or guarantees up-front before developing these sites in order to get permits. (JW)

5.b **The animals we eat are sensitive to contamination. The world is connected.**

We acknowledge and agree with you about the inter-connectedness of the ecosystem, and that's why we intend to clean up the site, to protect the ecosystem both on site and from off-site migration (DP).

6. What is the legacy of contamination? How do you know that you have checked all the sources?

The main contamination is petroleum hydrocarbons (DP).

We have completed a risk assessment that takes into account the extensive sampling of soils, sediments and surface water at the Site and there is negligible risk to human health or the environment (MB).

The Areas of Environmental Concern have been sampled via test pits and many locations have been delineated and the areas of contamination have been shown to be localized. The WDAs (on either side of the station area) have been around now for ~30 years and surface water (up, cross and down-gradient in the gullies) has shown no Contaminants of Concern. At the shoreline, our toxicity testing of the sediments showed that the growth/survival rate of benthic organisms had no statistical difference to the control group. That was interpreted via a Risk Assessment which concluded that there is a low risk to human health and the environment. Explained that for there to occur three factors are needed i) a contaminant/source ii) a pathway of exposure and iii) a receptor. Added that the gullies only have meltwater during only a portion of the year, and they are not capable of sustaining freshwater aquatic life. (KV)

7. Will new gully landfills be constructed? Where? How?

The existing Waste Disposal Areas in the gullies will be lined and capped to prevent water percolation. The proposed new landfill will be an engineered landfill (MB).

8. Are you planning on taking everything down?

Yes, everything except the Automated Weather Station (MB).

9. How about maintenance of the Automated Weather Station?

Usually that takes only one day per year with a small work crew. The crew will have survival kits if they have to stay for a longer period (JW).

10. Mould Bay comparison – is this a similar site or same project?
The Mould Bay site is a different high arctic weather station, with similar infrastructure to Isachsen; however, since Mould Bay is in the NWT and in the Inuvialuit Settlement Region, it has a very different regulatory and approval process. It is being worked on separately as a different project (JW).

11. I have a concern over history of operation/contamination and potential effects on wildlife and environment. It was in operation from 1940s to 1970s. There might be contamination that nobody mentioned so it is not known. Garbage may have been dumped.

We don't want to leave behind anything that would be a future issue; it will be brought off-site. Hazardous materials will be brought off-site, in fact some have already been removed such as PCB oil (light ballasts). As well, the clean-up plan is intended to be resilient to climate change (MB).

3.0 Overall Assessment

With the strong community participation at the meeting for the current decommissioning and clean-up plan for Isachsen, the federal government's consultation process for the project has been initiated and is well received.

Appendix A

Notification Posters

Community Engagement for

Decommissioning & Clean Up Plan

for the Isachsen Weather Station



January 29, 2025

4:00 to 6:00 p.m.	ATCO South Camp Hotel, Conference room

Meeting information will be available in English and Inuktitut.

Environment and Climate Change Canada, Public Services and Procurement Canada (proponent) and Nuqsana-Outcome JV (consultants) will be visiting Resolute Bay on **January 29, 2025** to share information on the proposed **Decommissioning and Clean-Up of the Isachsen Weather Station**.

The proponent will be hosting a community meeting to provide information on the current conditions at Isachsen and the clean-up plan that is being developed for implementation over the next 5-7 years and wants to hear the community's input on the clean-up plan.

WE LOOK FORWARD TO HEARING FROM YOU!



Food and refreshments will be served.

Everyone is welcome from Elders to youth.



There will be a draw prizes for Country Food and Co-op gift cards.

*For more information contact **Dustin Martin** at **dmartin@dillon.ca***

NUQSANA Inc. outcome CONSULTANTS DILLON CONSULTING Government of Canada Gouvernement du Canada

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ᐊᑐᕈᓐᓇᖅᑎᑕᐅᓂᖅᓯᒪᓕ ᓴᓗᒫᒪᖅᓴᖅᑕᐅᓂᖅᓯᒪᓗᓗ

Isachsen ᓱᓕᓐᓂᐊᕐᓇᖅᓗᑦ



ᓴᓇᓄᐊᑎ 29, 2025

4:00–ᒥᑦ 6:00–ᓗᑦ ᐅᓐᓄᐅᓴᓗᑦ	ᐋᑦᔨ ᓂᒋᐊᓂᑦ ᐊᐅᑦᓭᖅᓯᒪᔪᑦ ᑐᔪᕐᒥᐃᓐᓄᑦ, ᑲᑎᒪᐃᓄᑦ

ᑲᑎᒪᓭᓗᑦ ᑐᑭᓯᒋᐊᕈᑎᑦ ᐊᑐᐃᓐᓇᐅᓂᐊᕐᓇᖅᑐᑦ ᖃᓭᓗᓈᑎᑐᑦ ᐃᓄᐅᑎᑐᓭᓗ.

ᐊᕿᑎᓕᓚᐅᐅᔨᔪᑦ ᐊᓯᒪᒪ ᓯᓚᐅᑦ ᐊᓯᔾᔨᖅᓴᓕᓭᐊᓂᖅᓱᓄᑦ ᑲᓇᑕᒥ, ᓴᕿᒪᐅᔨᔪᑦ ᐱᔨᑎᑎᕐᓂᖅᑎᖏᑦ ᐊᓯᒪ ᓂᐅᕐᓇᖅᑐᑐᓚᓚᐅᔨᑦ ᑲᓇᑕᒥ (ᐱᓇᐅᑐᖅ) ᐊᓯᒪ ᓄᖅᑲᓇᓕᔾᔪᖅᓴᓕᓭᐊᓂᖅ JV (ᖃᐅᔨᔪᑲᐃᔨᑦ) ᖃᐅᔨᓯᐃᑦᑐᓕᐊᓕᓴᖅᑐᑦ ᓴᓇᓄᐊᑎ 29, 2025–ᒥ ᑐᑭᓯᑎᑎᕐᔾᖅᑐᓕᑎᑐᑦ ᑐᓴᓯᕐᐅᑕᐅᔨᓯᒪᔪᓄᑦ ᐊᑐᕈᓐᓇᖅᑎᑕᐅᓂᖅᓯᒪᔪᓄᑦ ᑲᓇᑕᒥ ᐊᑐᐃᓐᓇᖅᑎᑕᐅᓂᖅᓯᒪᓗᓗ Isachsen ᓱᓕᓐᓂᐊᕐᓇᖅᓗᒥ.

ᑖᓐᓇ ᐱᓇᔨᓴᓯᒪᔪᖅ ᑲᔨᓯᑎᑎᕐᓂᐊᓕᕐᓂᖅ ᓄᓇᓕᓐᓂᑐᑦ ᑲᑎᒪᑎᑎᕐᓂᐊᓕᕐᒥᐅᑦ ᐱᑎᑎᕐᓂᐊᓕᕐᒥᐅᑦ ᐃᓕᓐᓂᐊᖅᑐᑦ ᑲᓇᑕᒥ, Isachsen–ᒥ ᓴᓗᒫᒪᖅᓴᖅᐃᓕᓴᕐᓗᓂᓗ ᐱᓇᓱᐊᕐᓂᖅᑕᐅᓯᒪᔪᒥᒥᑦ ᐊᐃᑦᑭᔨᓴᖅᑕᐅᓯᒪᔪᑦᑐᑦ ᐊᑐᓕᖅᑎᑎᕐᓂᐊᓕᕐᓂᖅ 5-7–ᓄᑦ ᐊᓯᖏᔨᓄᑦ ᑐᑭᓯᒪᓕᒫᓂᓗ ᓄᓇᓕᓐᓂᒋᐅᑦ ᐅᖃᐅᔨᓴᖅᑭᑐᓄᖅ ᓴᓗᒫᒪᖅᓴᖅᐃᓕᓴᕐᓗᒥᑦ ᐱᓇᓱᐊᕐᓂᖅᑕᐅᓯᒪᔪᒥᑦ.

ᓂᓚᐅᔭᓗᑦ ᐃᓕᓐᓄᑦ ᑐᓴᕐᓯᒥᑦ ᑐᓴᖅᓯᐅᑉᓭᓚᐅᔭᓴᖅ!



ᓂᖅᑭᑦ ᑕᒧᓗᓚᐅᔭᓕᓗᑦ.

ᑭᐅᔨᑐᐃᓐᓇᑕᒪᐊᑦ ᑐ ᑐᖓᓚᐅᔭᐅᑦ ᐱᓇᖅᑐᑦ ᐃᓕᐅᑐᓂᓗ.



ᐊᒧᐅᔨᔪᖃᓭᖅᑐᑦ ᓂᖅᑭᓕᑕᑦᑕᓄᑦ ᐊᑎᒪ ᔨᐊᐸᐅᔨᓄᑦ ᓂᐅᕐᓇᖅᑐᐅᑎᓄᑦ.

ᑐᔨᔪᑎᐅᔪᓂᕈᒪᔨᓐᓇᑦ ᖃᐅᔨᓕᑎᒋᓐᓇᖅᑐᓗᒍ ᑕᕐᑎᓂ ᐃᒪᓐ ᐅᓂᒃ dmartin@dillon.ca

NUQSANA Inc. outcome CONSULTANTS DILLON CONSULTING Government of Canada Gouvernement du Canada

Appendix B

List of Participants

Resolute Bay and Grise Fiord Community Engagement for Isachsen Weather Station Decommissioning and Clean Up Plan

ᖁᐅᓯᐃᓕᑐᖅ ᐊᓗᒪ ᐊᐅᓯᐃᓕᑐᖅ ᓄᓇᓕᖅᓂ ᐃᓕᐅᑎᑎᓂᖅ Isachsen ᓯᓚᖅᓂᐊᖅᐳᑦ ᐊᑐᑭᖅᓂᖅᑎᑕᐅᓂᖏᓐ ᐊᓗᒪ ᓴᓗᒪᖁᓴᓂᒃᓴᑦ ᕿᖏᐅᑕᖅ

#	Name of Attendee ᐅᕐᔪᐊᓘᓵᑦ ᐊᑎᖏᓐ	Ticket #
1	TONY HANIK	507156
2	Jimmy Qaapik	507157
3	Lucy NUNGAQ	507158
4	Matthew Nungaq	507159
5	Aasta Idlout	507160
6	DEBBIE IQALUK	507161
7	PADDY AQIATUSUK	162
8	MELANIE HOWELL	507163
9	Susan Salluk	507164
10	Louisa Gillespie	507165
11	Halle AmaRRualik	507166
12	olivia ᐅᓪᑐᐃᐅ ᐅ	507167
13	Angelina	507168

Resolute Bay and Grise Fiord Community Engagement for Isachsen Weather Station Decommissioning and Clean Up Plan

ᖁᐅᓯᐃᓪᑐᖅ ᐊᒻᒪ ᐊᐅᓯᐃᓪᑐᖅ ᓄᓇᓕᖅᓂᓂᓂᖅ Isachsen ᓯᓚᖅᓂᐊᕐᕕᐊᓂ ᐊᑐᑭᖅᓂᖅᑎᑕᐅᓂᖅᓱᒃ ᐊᒻᒪ ᓴᓗᒻᒪᖅᓴᐃᓂᖅᓯᒪᔪᓂ ᕿᓂᖅᓱᐃᓂᕐᒥᒃ

#	Name of Attendee ᐅᐸᑐᙵᕆᐸ ᐊᑎᖅᓱᒃ	Ticket #
14	Chris Coventry	
15	John O'Connell	
16	Joadamee Amagoalik	507169
17	Brad Marcinkow	
18	Angel Koonoo	507170
19	Tracy Kalluk	507171
20	Rosalie Ogallak	507172
21		
22		
23		
24		
25		
26		

Appendix C

Presentation (English)

ISACHSEN HIGH ARCTIC WEATHER STATION (HAWS)

Decommissioning & Clean up Plan

Resolute Bay January 29, 2025



Environment and Climate Change Canada
Environnement et Changement climatique Canada
Canada

Introductions

- Environment & Climate Change Canada (ECCC) - Owner
  - Jordan Wilson: Director, Greening and Environmental Programs Division
  - Owen Wade: Contaminated Sites Officer
- Public Services and Procurement Canada (PSPC)
  - Michael Brownlee: Project Manager - Assessment
  - Ryan Breivik: Project Manager - Remediation
- Nuqsana-Outcome Joint Venture (NOJV) - Consultant
  - Don Plenderleith: Environmental Division Manager
  - Keelan Veitch: Environmental Project Manager
- Dillon Consulting Limited
  - Dustin Martin: Community Planner

- Special thanks to our translator: Ragilee Attagootak



Purpose

- Discuss the clean-up of the Isachsen weather station.
- Seek community input and knowledge, and open communication for future opportunities with the clean up efforts.
- To manage the environmental and physical hazards present at the site.
- Funding as a part of the Government of Canada's Federal Contaminated Sites Action Plan (FCSAP)
- Aim to clean-up contaminated sites for which the federal government is responsible for.

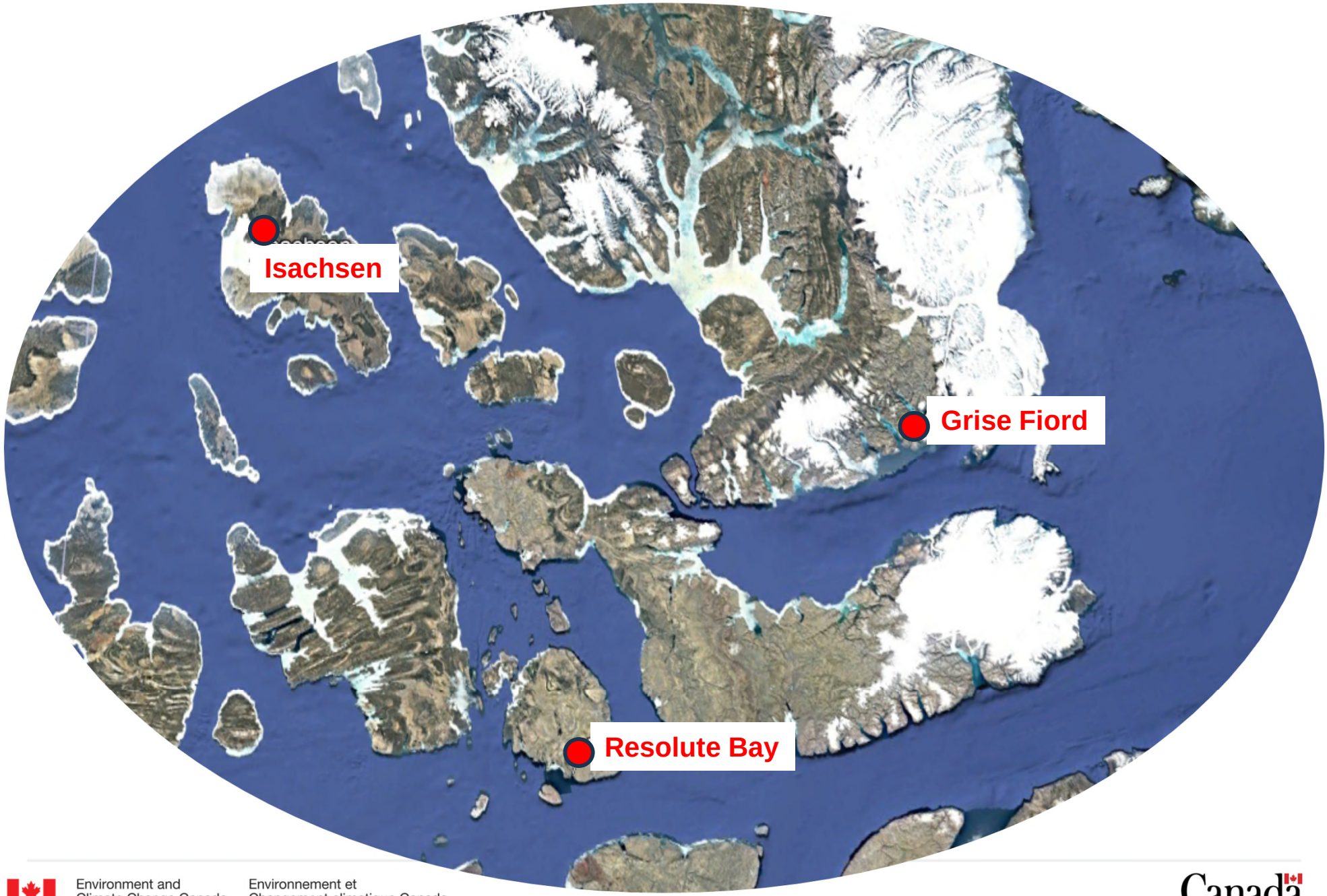


Outline

- History of Isachsen
- Current Site Conditions
- Options for Site Clean-up
- Timelines
- Procurement and Economic Opportunities
- Community Input



Site Location



History of Isachsen: Site Operations

- Former High Arctic Weather Station
- Established in partnership with the U.S.
- Operated as a staffed weather station 1947 and 1978
- Now and will continue to operate as an automatic weather station.
- Legacy of contamination



History of Site Investigations and Remediation

- 1996 - Cleanup Phase I
- 2000 to 2003 - Inspections and Repairs
- 2003 to 2019 - Environmental Investigations and Remedial Planning



Connections with Resolute Bay

- Resolute was a staging point for shipments and a source of labour to/for Isachsen.
- In 1996 a local company with workers from Resolute did the first stage of remediation: incineration of fuel, crushing of drums, removing the dam and burying some vehicles.



Recent Site Investigation and Remediation Activities



- Field investigations in 2022, 2023 and 2024
- Soil and groundwater sampling
- Risk Assessment
- Waste Inventories
- Archaeological survey
- Recent remedial activities: light ballast removals, incineration test burns, instrumentation for climate change monitoring of permafrost





Constraints Driving Remedial Options





Many remedial options were screened out due to:

- Sealift not viable
- Aircraft transportation severely impacted by variable weather – unsafe for high frequency of flights
- Construction equipment size limitations (that fit in a C-130 Herc)

Remedial Options Evaluation Criteria





- Reduction of Short-term and Long-term Risk
- Value to Public
- Ease of Carrying Out
- Acceptance by Regulators / Input from Stakeholders
- Climate Change

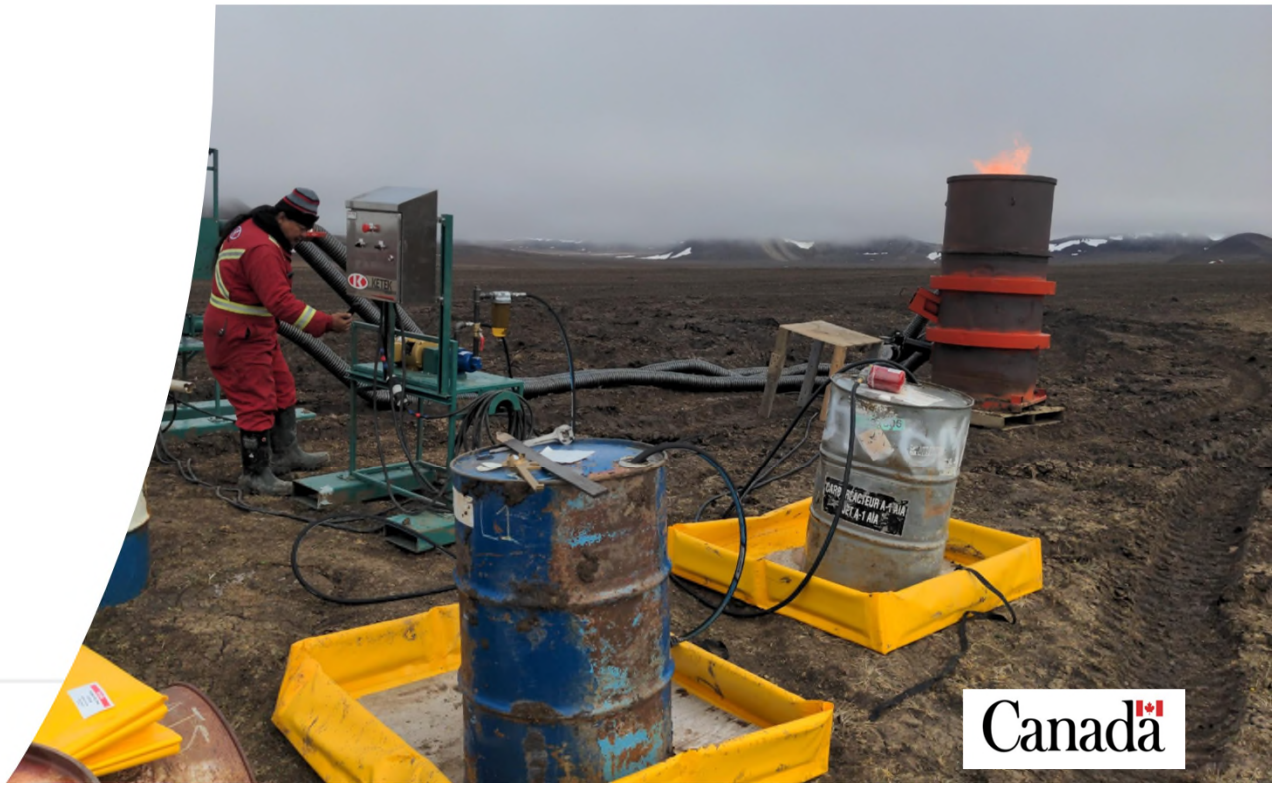
Note: The remedial options presented within this presentation are current as of today but could change or evolve prior to execution

Liquid Waste

Approximately 76,000 L of product (diesel, jet, gas, kerosene, oily water) in tanks and drums at the Site

- Preferred option:
  - **On-site incineration**

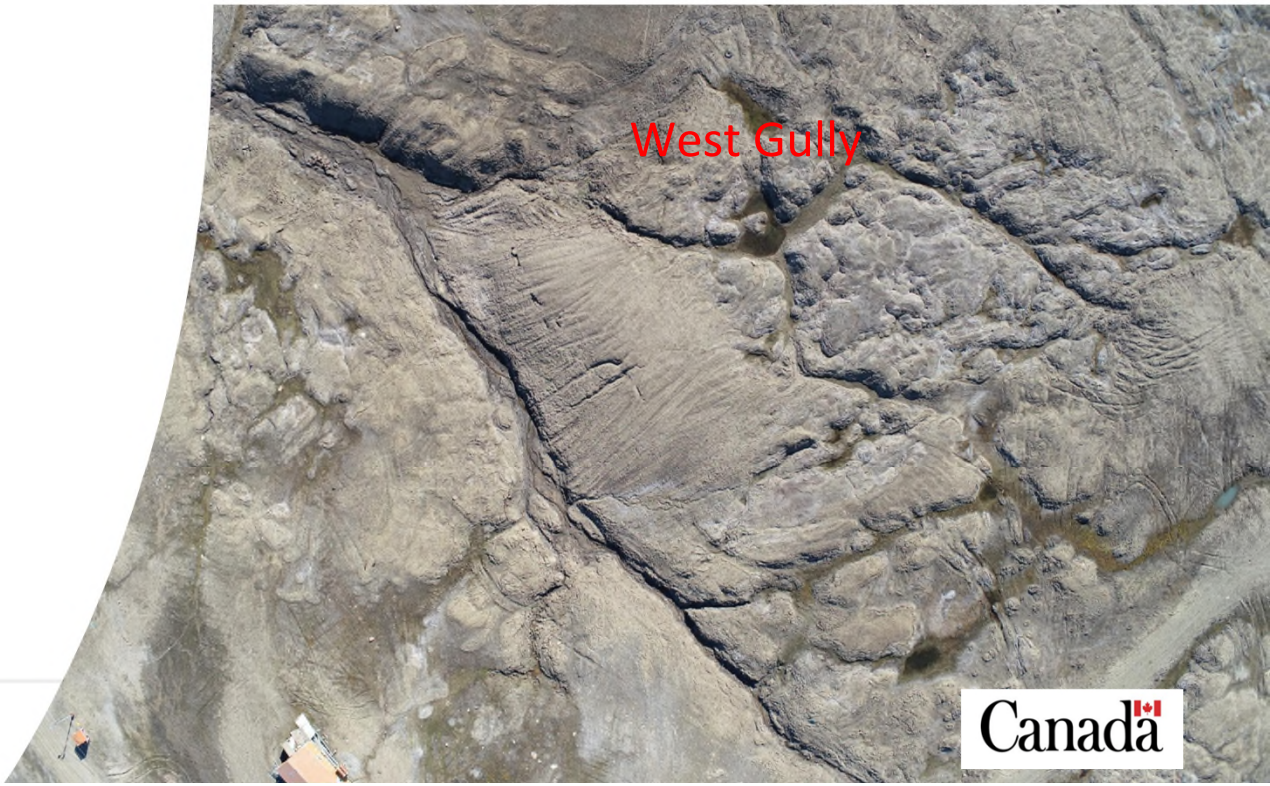




Waste Disposal Areas (WDAs)

- East/West Gully: Soil cover with no environmental risk as per Risk Assessment, however, erosion & exposed material have been noted.
- Preferred option:
  - **Add coarse gravel cover over the area with grading for management of erosion and surface water**
  - **Instrumentation to monitor performance**





Metal Debris (Drums, Tanks, Equipment)

Approximately 3,900 drums yet to be crushed (thousands already crushed), 50 tanks, several non-operational vehicles and equipment.

- Preferred option:
  - **Lead paint removal (as needed), consolidate, and disposal in new on-site engineered waste disposal area.**







Building Demolition Waste

Hazardous Building Material Assessment and waste volume inventories completed for the 22 buildings/structures

- Preferred option:
  - **Off-site disposal of hazardous waste with on-site burial of non-hazardous waste at new on-site engineered waste disposal area.**

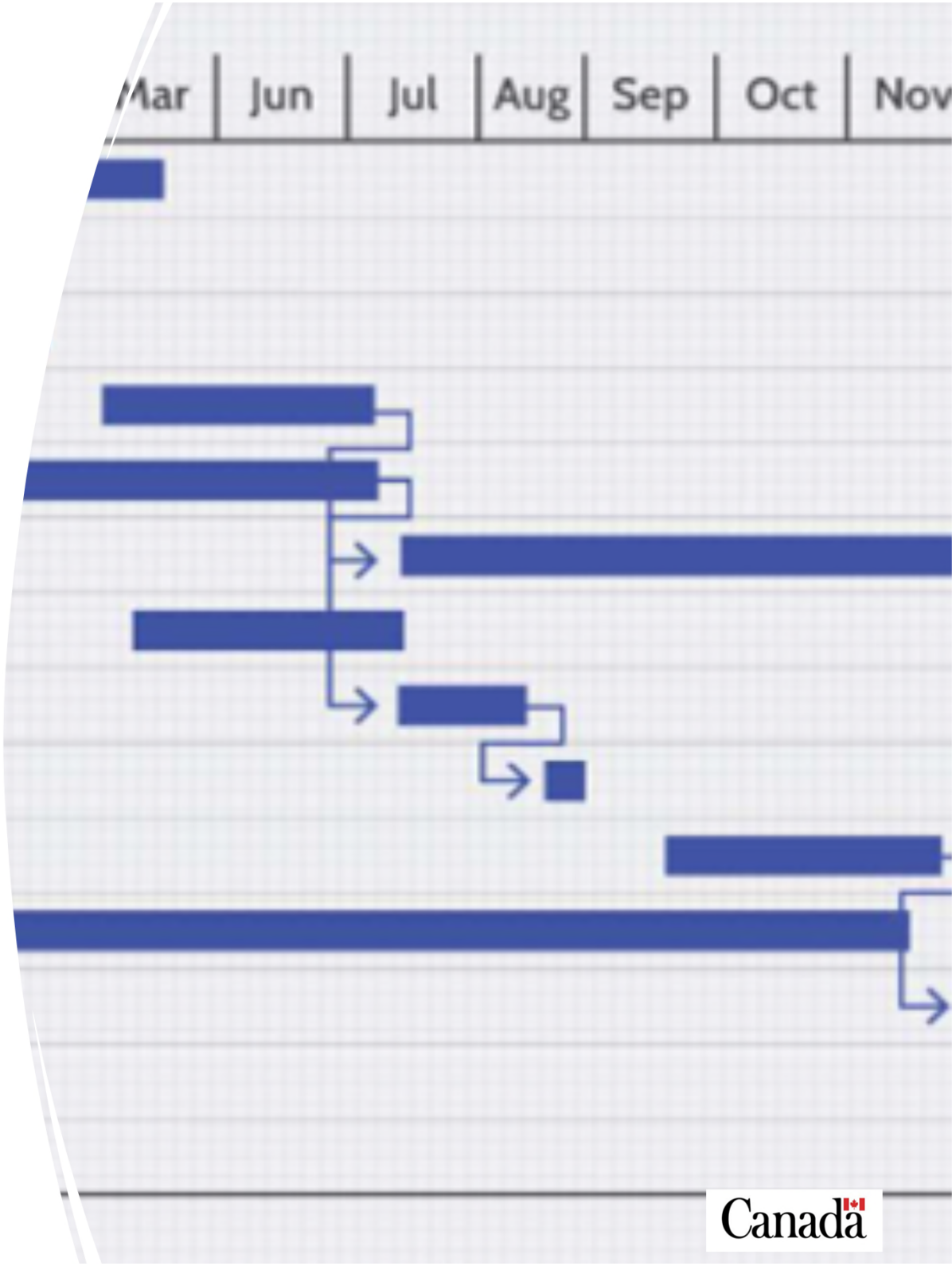






Remedial Timelines

- Planning and Design into 2025 and 2026
- Fuel Incineration in 2025
- FCSAP Phase V



Procurement



- **Request for Proposal – Inuit Benefits Plan (IBP)**
  - Maximizes bidder commitments towards Inuit businesses and citizens through bid criteria
    - Office presence, labour, subcontracting and training
    - Consult the Inuit Firm Registry (at least 51% of the company's voting shares owned by Inuit)

Procurement

- **Potential Local Hiring by Successful Contractor**
  - Labourer
  - Heavy Equipment Operators
  - Wildlife Monitors
  - Camp Operations
  - Other opportunities
- **Potential Training Opportunities**
  - First Aid Certification
  - Firearms Safety Training Courses
  - Occupational Health and Safety
  - Hazardous Materials Management







Comments? / Questions?

- Thank you for attending and participating today!



Isachsen Remediation
Contact Information

Owen Wade: Contaminated Sites Officer: Isachsen (ECCC)
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Michael Brownlee: Project Manager - Assessment (PSPC)
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Email: michael.brownlee@tpsgc-pwgsc.gc.ca

Ryan Breivik Project Manager - Remediation (PSPC)
Telephone: (905) 691-1574
Email: ryan.breivik@tpsgc-pwgsc.gc.ca

Appendix D

Presentation (Inuktitut)

ISACHSEN ᖃᓂᑎᒃᑐᒥ ᓄᓇᓕᖕᓂᐊᖅᓯᒃ (HAWS)

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ᖃᐅᔨᓴᕐᑐᖅ ᒪᓂᐊᓕᒃ 29, 2025

Environment and Climate Change Canada
Environnement et Changement climatique Canada

Canada

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- ᐊᓂᑎᓕᓱᑲᔪᓂᓂ ᐊᒻᒪ ᓯᓚᐅᐸ ᐊᓯᓴᖅᐸᑦᓕᐊᓂᖏᓐᓄᓕᓂ ᑲᓇᑕᒥ (ECCC) - ᓇᖏᒥᓂᓕᐳ
  - ᔨᐊᑕᓐ ᐅᐃᐅᑦᓴᓐ: ᑐᑭᒧᐊᖅᑎᑎᕐᒪᕆ, ᓯᑕᖅᑎᓇᓂᑦᓕᐊᓂᕐᒧᑦ ᐊᓂᑎᓕᓇᓂᕐᒧᑦᓕᑦᓗ ᐱᓕᓇᐊᓄᑦ ᐱᓕᓇᖏᖅᑲᖅ
  - ᐅᓂᓐ ᐅᐊᐃᑦ: ᓯᑕᖅᓯᒪᔨᓄᑦ ᓄᓇᓄᑦ ᐱᓕᓇᓕᕆ
- ᑲᓂᒪᑲᔪᑦ ᐃᖅᑲᓇᐃᓴᕐᔪᖓᑦ ᓂᐅᔭᖅᑎᑦᓗᓗ ᑲᓇᑕᒥ (PSPC)
  - ᒪᐃᔪᓗ ᐳᕆᐅᓐᓕ: ᐱᓕᓇᐊᑲᓴᓄᑦ ᐊᐅᓪᓕᑦᑎᓕᕆ - ᖃᐅᔨᓴᕐᓂᕐᒧᑦ
  - ᕿᐃᓴᓐ ᐳᓇᖅᑲᖅ: ᐱᓕᓇᐊᑲᓴᓄᑦ ᐊᐅᓪᓕᑦᑎᓕᕆ - ᐊᑦᑭᑭᐊᕈᑎᓄᑦ
- ᓄᖅᓴᓇᓕᓴᕐᑐᖅ ᑲᑐᔨᔪᖃᑎᒋᑲᓂᓗ ᓇᖏᒥᓂᖃᕐᓂᖅ (NOJV) - ᖃᐅᔨᑲᑲᐃᓕᓕ
  - ᑕᓐ ᐱᓐᑐᓪᓕᑦ: ᐊᓂᑎᓕᓇᓂᕐᒧᑦ ᐊᐅᓪᓕᑦᑎᓕᕆ
  - ᑲᐃᓪᓐ ᖁᑦᓴ: ᐊᓂᑎᓕᓇᓂᕐᒧᑦ ᐱᓕᓇᐊᓄᑦ ᐊᐅᓪᓕᑦᑎᓕᕆ
- ᑎᓪᓐ ᖃᐅᔨᒪᔨᑕᑦ ᓕᒥᑎᑦ
  - ᑕᓴᑎᓐ ᐃᒪᑎᓐ: ᓄᓇᓕᖏᓂ ᕿᖃᑲᑐᓕᓕᕆᔨ

- ᖃᐃᓐᓇᒋᑎᑎᐊᓇᓂᖅᓂ ᑐᓴᔨᓂᖅᓂ: ᕿᐃᒥᓕ ᐊᑕᔪᑦᑕᒃ



ᐱᔨᔪᑎ

- ᐅᖃᐅᓯᕆᓕᕐᔪ ᓴᓪᓚᒪᖃᖅᑕᐅᓂᖏᓐᓄ Isachsen ᓯᓚᐢᓂᐊᖅᓴᖅ.
- ᖃᓄᖅᓂᖅᑎᑦ ᓄᓇᓕᐢᓂᓕᑦ ᑐᐴᖃᖅᑕᐅᔨᓂᑦ ᖃᐅᔨᒪᓂᖃᖅᓂᖅᑎᑦᓗᓐᓗ, ᒪᑐᐃᖏᓐᓴᕐᓗᓐᓗ ᑐᐴᐅᒪᖃᖅᑦᑕᐅᑎᓂᖅᑎᑦ ᓯᕗᓂᑦᓴᖅᑎᑦ ᐱᙵᖃᖅᓂᐅᔨᓂᑦ ᓴᓪᓚᒪᖃᖅᓴᐃᓕᓯᐊᖅᓂᖅᓗᑦ.
- ᐊᐅᓚᐢᓂᐊᖅᓗᔪ ᐊᓂᒍᑎᖏᓐᓄ ᑎᒥᒧᑦᓗᓐᓗ ᐅᓗᓕᐊᓇᖅᑐᑦ ᐱᑕᖃᖅᑐᑦ ᐃᓂᖏᓐᓄᓂ.
- ᐸᓇᐅᓴᖅᑐᑎᑕᐅᓂᖅ ᐃᓚᒋᔭᐅᔨᖅ ᑲᓇᑕᐅᑦ (FCSAP)
- ᑐᖏᓐᖅᓴᓗᑎᓴ ᓴᓪᓚᒪᖃᖅᐃᓂᖅᑎᑦ ᓯᑭᖅᓯᒪᔨᓂᖅ ᐃᓂᓂᓴ ᓴᙵᒪᑐᖅᓴᓂᖅᑐᑦ ᐅᒪᒋᔭᖅᓂᓂᓴ.

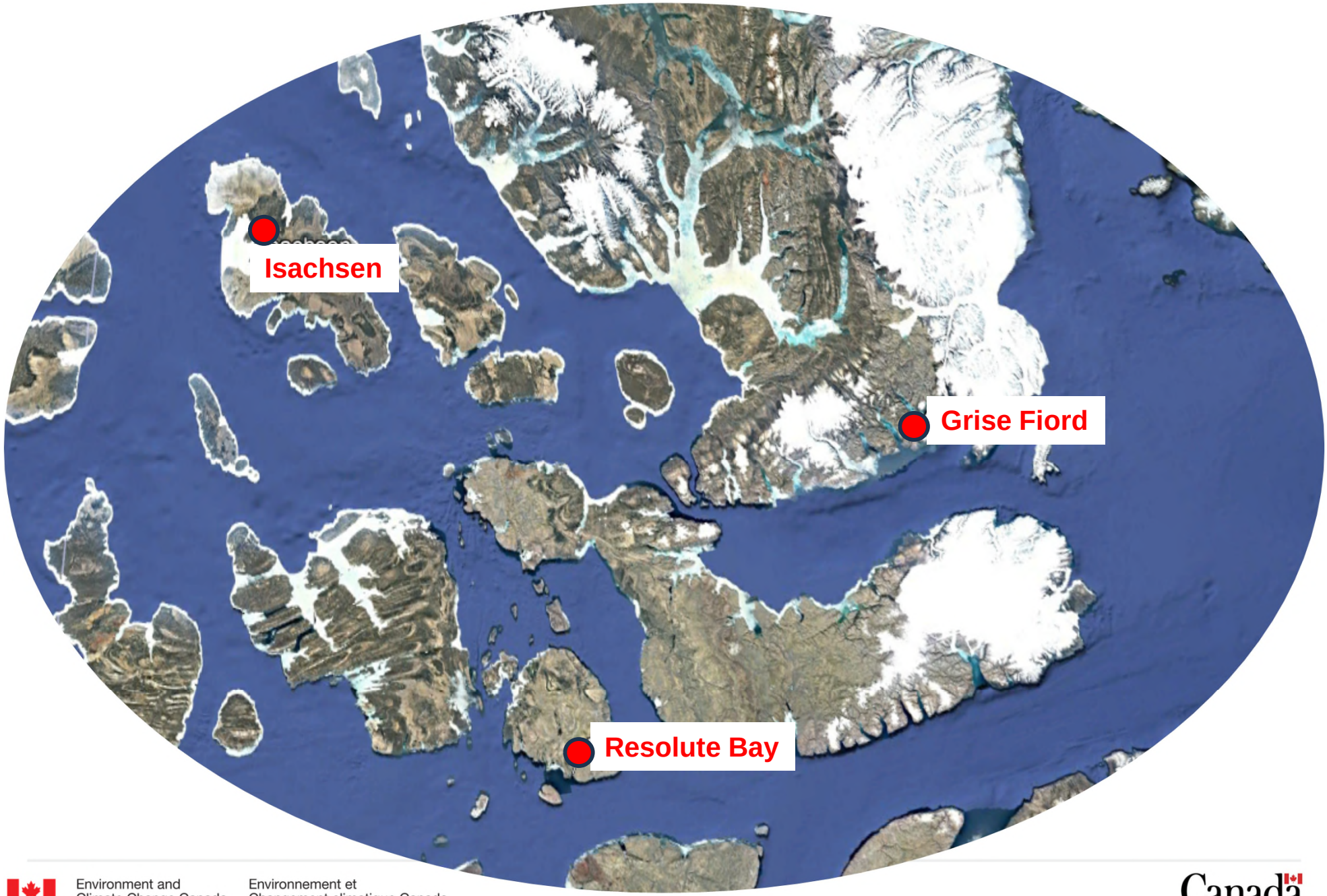


ᓇᓗᓇᐃᔨᐅᑎᑦ

- ᐱᐅᓯᓗᔨᐅᓭᓪᓚᐅᖅᑐᑦ Isachsen-ᒥ
- ᐃᓐᓇ ᓇᔪᖅᑕᐅᔪᖅ ᖃᓄᐃᓕᓴᖏᓐᖓ
- ᐃᓂᒋᔨᐅᔪᒥᑦ ᓴᓗᓪᒪᖅᓴᐃᓂᕆᒥᑦ ᐊᑐᖅᑕᐅᓴᐃᑭᓐᓇᖅᑐᑦ
- ᐱᔨᓱᖅᓯᒪᕐᐃᑲᖏᑦ
- ᓂᐅᐃᖅᑕᖏᓂᖅ ᐊᓪᒪᒃᑭᐅᕆᐊᖃᕐᓂᒃᓴᑦ ᐱᓕᐅᔨᓕᐅᕆᓯᐊᖃᕐᓂᖅᓴᑦ ᐱᓕᑎᐊᖓᔪᓇᓇᖅᑐᑦ
- ᓄᓇᓕᓴᓂ ᑐᓴᖅᑕᐅᔪᑦ



ᐃᓂᒋᔭᐅᓪᓚᒃ ᐃᓂᓐᓇᒃ



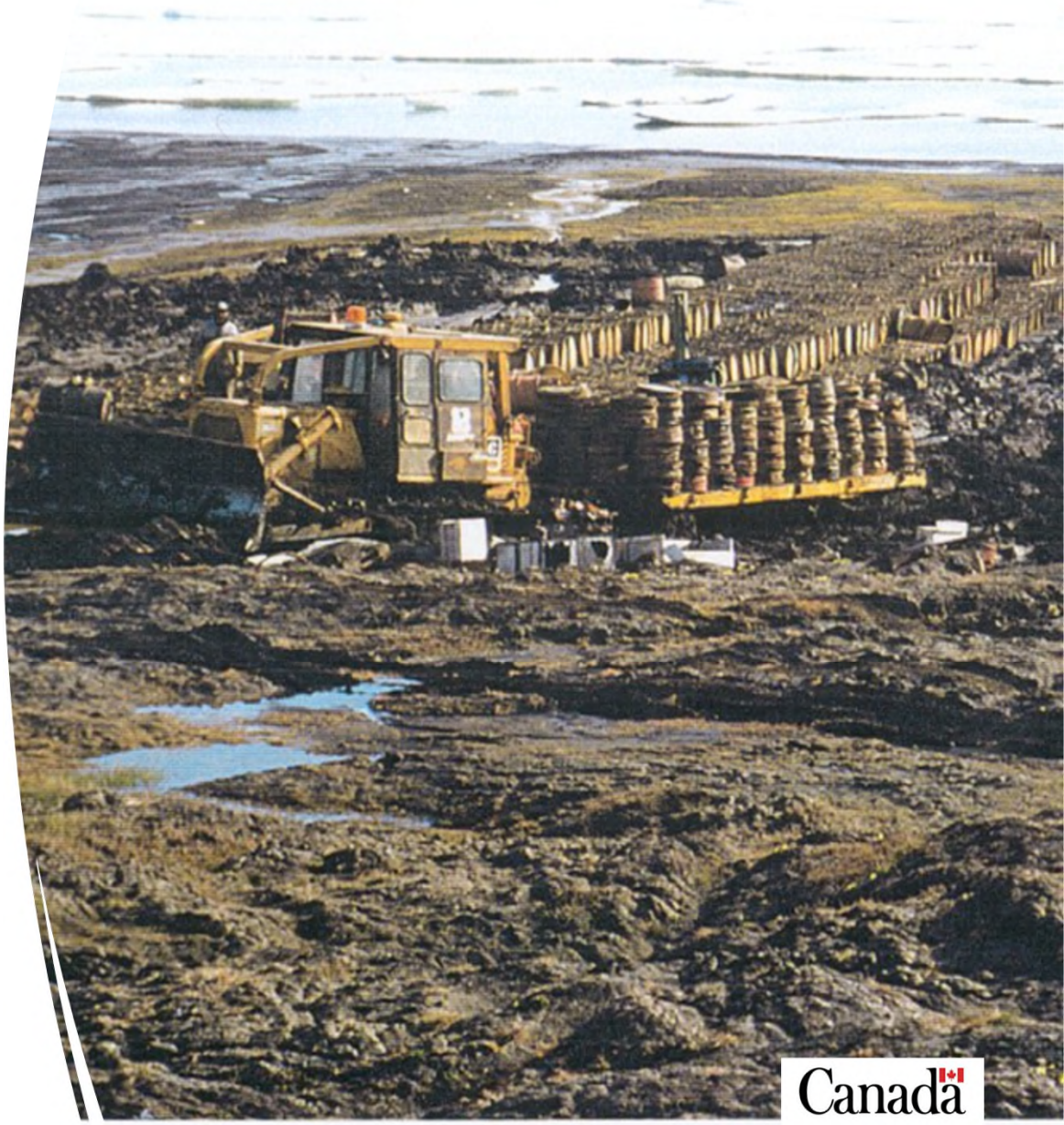
ᐱᐅᓯᓗᕆᐅᓂᓪᓗᑦ Isachsen-Γ: ᐃᓂΓᖏ ᐊᐅᓪᑎᐟᕃᖏᓂᒃ

- ᖃᓪᑎᖅᑐΓᑦ ᓯᓪᓂᓂᐊᕐᕕᖅ
- ᐊᑲᑭᖅᑕᐅᓪᓗᖅᓯᒪᔨᖅ ᐱᓪᓗᖏᑎᑲᖅᓴᓗᑎᖅ ᐊΓᐊᓪᓚᖅᕎᐅᑦ.
- ᐊᐅᓪᑕᐅᑦᓗᓂ ᓯᓪᓂᓂᐊᖏᑎᖅᑯᓂᓂ 1947 ᐊᓕᒪ 1978
- İᓂᓐ ᐊᐅᓪᑎᑲᓂᓐᓂᐊᓪᓚᖅᓴᓗᑎᖅᓗ ᓯᓪᓂᓂᐊᕐᕕᐅᓗᓂ.
- ᓯᑭᕐᓐᓄᖏᕐᕕᖏᓐᓄᑦ



ᖃᓄᐃᓕᐅᖅᑕᐅᔪᓕᐅᖅᑐᑦ ᐃᓂᒥᖅ ᖃᐅᔨᓴᖅᓯᓂᑦ ᓴᓗᒻᒪᖅᓴᐃᓂᕐᓗ

- 1996 - ᓴᓗᒻᒪᖅᓴᐃᓂᖅ I
- 2000-ᒥᑦ 2003-ᒧᑦ - ᖃᐅᔨᓴᖅᑕᐅᓂᑦ ᐊᒪᓗ ᓴᓇᔭᐅᔪᑦ
- 2003–ᒥᑦ 2019–ᒧᑦ – ᐊᔪᑎᒥᒃ ᖃᐅᔨᓴᖅᓯᓂᖅ ᐊᒻᒪ ᐊᑲᑭᑎᐊᖅᓯᓂᖅ



ᑲᓯᖅᓯᒪᓂᖅᓗᑦ ᖃᐅᓯᐃᓪᑐᖅᑎᑦ

- ᖃᐅᓯᐃᓪᑐᖅ ᑎᑭᕐᕕᐅᖃᑦᑕᓪᓚᐅᖅᓴᖅ ᐊᐅᓪᓪᓚᖅᑎᑕᐅᔨᓄᑦ ᐊᒻᒪ ᐱᓇᓴᐅᕐᕕᐅᓪᓚᓂᓄᑦ ᐃᓱᐱᓱᕐᒧᑦ.
- 1996-ᖁᔭᓪᓚᔪᑐ ᓄᓇᓕᕐᓂ ᑲᒪᓂᓂᐅᔨᖅ ᐃᖅᑲᓇᐃᓴᖅᑎᖃᖅᑐᑦ ᖃᐅᓯᐃᓪᑐᑐᒥᑦ ᓴᓚᒪᖅᓴᐃᓂᖃᐅᖅᑐᑦ: ᐃᑯᐊᓪᓕᑎᓪᓕᓪᓚᑎᑐᒃ ᐅᖅᓯᐊᓚᒪᒥᑦ, ᓯᕐᑯᓪᓚᐃᓂᖃᒥᑦ ᖃᑦᑕᐅᔭᓂᑦ, ᐋᔭᐃᓪᓚᑎᑐᒃ ᓯᒥᑦᑕᐅᑎᒥᑦ ᐊᒻᒪᓗ ᐋᔭᐃᓪᓚᑎᑐᒃ ᓄᓇᓯᐅᑎᓂᑦ.



ᖃᓄᐊᑎᐅᑦᑕᕆᓂᖅ ᐃᓕᒥᐅᓂᖅ ᖃᐅᔨᓴᖃᓕᓂᖅ ᓴᓇᓗᒪᖃᓴᐃᓕᓂᑲᓪᓚᑲ ᐱᓕᕆᔨᖏᑦᑐᖅ



- ᖃᐅᔨᓴᖃᑦᑕᐃᓕᓂᑦ 2022, 2023–ᒥᑦ 2024–ᒥᓪᓚ
- ᐃᓱᒪᖏᑦᑎᑲ ᐊᓗᒪ ᓄᓇᐅᑉ ᐃᑭᐊᖓᓂ ᐃᒪᖏᑎᑲ ᖃᐅᔨᓴᓚᖅᓴᓂᑦ
- ᐊᑦᑕᕐᓇᖅᑐᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ
- ᐊᖅᑕᑯᓂᑦ ᓇᐃᓴᐃᓂᖅ
- ᐃᑦᑕᕐᓂᓴᐃᓕᓂᕐᓂᖅ ᖃᐅᔨᓴᕐᓂᖅ
- ᖃᖓᓕᑦᑎᐊᑦᑕᓴᑦ: ᐊᑲᖅᑭᑦᑐᖅᑑᑦᑎᒍᑦ: ᖃᐅᔨᒪᖓᔪᑎᑦ ᐱᓴᖅᑕᐅᔪᑦ ᐃᑯᐊᓕᑎᑦᑎᓴᐅᑎᓄᑦ ᖃᐅᔨᓴᖅᑎᑦ ᐅᑕᖅᑐᑦ, ᐱᓕᕆᔨᒃᑯᑎᑦ ᑯᓕᐃᓐᓇᖅᑐᑦ ᐊᑲᓴᖅᓯᒋᑦᑕᐊᔪᑦ ᖃᐅᔨᓴᖅᑎᑦ ᓄᓇᐅᑉ ᐃᑭᐊᖓᓂ ᖁᑯᐊᖓᐃᓐᓇᐅᓴᖅᑐᒪᑉ





ᑐᓴᖅᑕᕆᔨᑦ ᐊᖏᓪᓗᓂᓄ ᐃᖅᑭᒋᐊᕆᔨᖅᓴᓕᑦ





ᐊᒥᓱᑦ ᐃᖅᑭᒋᐊᕆᔨᓴᓕᑦ ᖃᐅᔨᓴᖅᑕᐅᓪᓚᐅᖅᑐᑦ ᐱᐟᔪᑎᑎᓪᓗᒍ:

- ᐅᒥᐊᖏᔪᐊᕐᓯᖅᑐᓴᓕᑦ ᐊᔪᖅᑐᑦ
- ᖃᖓᑕᓱᑦ ᓄᑦᑕᖅᑎᑕᐅᓂᖏᑦ ᐊᓄᑐᖅᑕᐅᖏᔪᐊᖅᑐᑦ ᓱᓚᓵᓄᓪᓗᒍ – ᐊᑦᑕᖏᓐᓄᓱᓵᓂᓄ ᖃᖓᑕᒃᓴᕐᔪᐊᖃᑦᑕᖏᓂᕐᓂᓄᓪ
- ᓴᓇᓂᓕᒍ ᐱᖏᑎᑦ ᐊᖓᓂᓂᕐᓂᑦ (ᐃᓚᒪᓵᓂ C-130 Herc–ᒥᑦ)

Environment and Climate Change Canada
Environnement et Changement climatique Canada

Canada

ᐃᓱᖅᑭᑐᐊᕐᑎᑕᖅᑎᓪᓗᑎᑦ ᐊᑐᖅᑕᐅᓯᒪᔪᓐᓇ ᖃᑦᑐᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᖏᓪᓗᑎᑦ ᒪᓕᒐᕐᐊᓱᑦ





Environment and Climate Change Canada
Environnement et Changement climatique Canada

- ᒥᐅᓂᐅᐊᖅᑎᑦᑎᓂᖅ ᐊᑯᓂᐅᖕᖏᑦᑐᑐᒃᑯᑦ ᐊᑯᓂᐅᔨᐅᑦᑐᓗ ᐊᑦᑕᕐᓇᖅᑐᒥᐅ
- ᐱᒪᒪᓕᐅᓂᖓ ᑭᐅᑯᑐᐃᓐᓇᕐᓂᒃ
- ᐱᓕᕆᑲᑦᑕᓗᐊᕐᓂᖅ
- ᐊᖏᕐᖅᑕᐅᓗᑎᒃ ᐊᐅᓪᓕᑎᐅᓂᒃ/ ᐅᖅᐅᓯᐅᓯᒪᔪᑦ ᓇᖏᒥᓂᖅᖅᑕᐅᔨᓂᒃ
- ᓯᓪᓗᐅᑦ ᐊᓯᐅᖅᐸᑦᓪᓕᐊᓂᖏᓐᓄ

ᖅᐅᐅᒪᒋᑦ: ᐃᖅᑭᒋᐊᕐᑎᑕᖅᑎᑦ ᓴᖅᑭᑕᐅᔨᑦ ᑕᕐᓂᓂ ᐅᓂᒃᑲᐅᓯᐅᔨᒋᐊᕐ ᐃᓪᓓᒪᑦ ᑎᑭᐅᓗᔪ ᑭᓯᐊᓂ ᐊᓯᐅᐸᑦᓇᖅᓄᒃ ᐅᕐᓂᓚᓪᓂᑦ ᐊᓯᐅᐸᑦᓇᖅᓄᒃ ᐊᑐᓕᖅᑎᑕᐅᓪᓕᐅᖅᓂᖅᓂᒃ

Canada

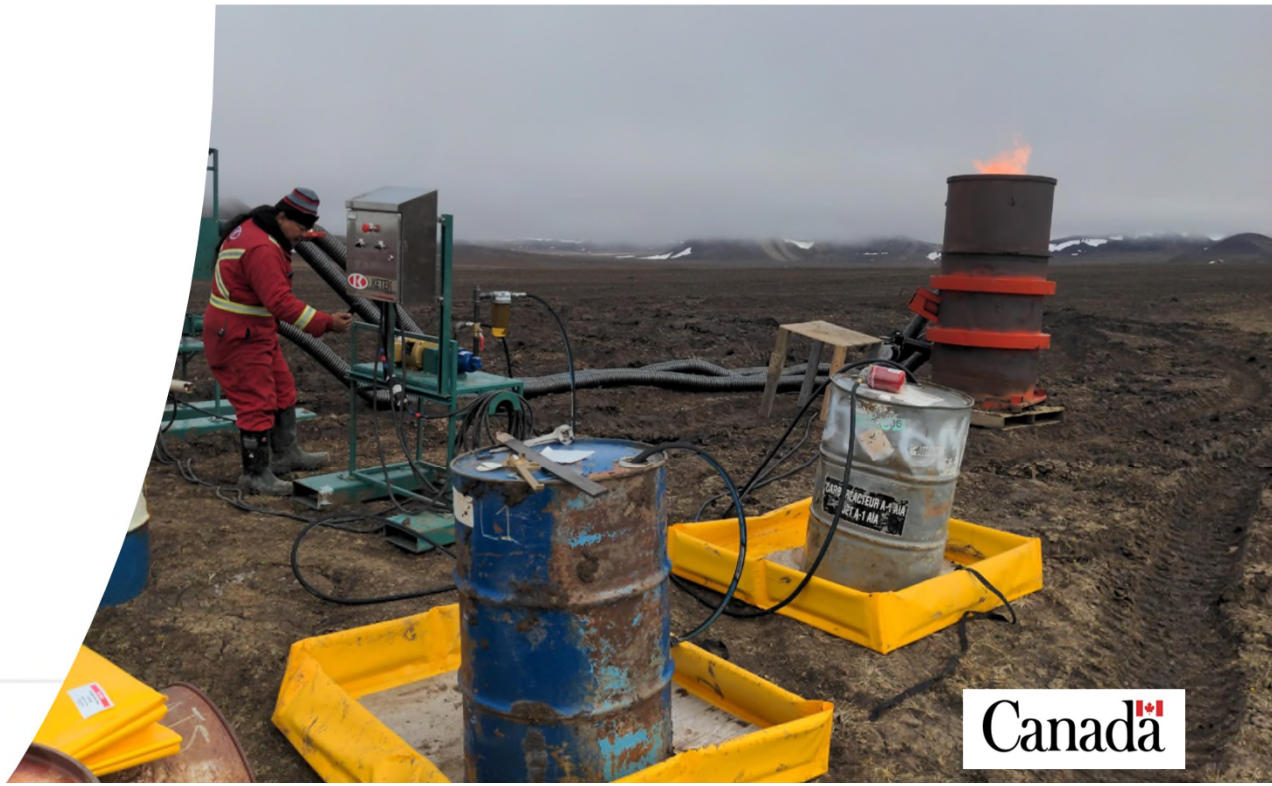
ᐃᒪᓐᓕ ᐊᖏᑕᑯᓕ

76,000 ᓀᓕᑦᓴᓗᐃᑦ (ᐅᖅᓯᐊᓗᖅ, ᓯᖏᒃᔪᕐᔪᐊᖅ, ᐅᖅᓯᖅ, ᑭᐊᓕᓯᖅ, ᑭᓂᖅᑐᖅ ᐃᒪᖅ) ᖃᖏᑦᑕᓗᓂᓂᑦ ᖃᖏᑦᑕᐅᔨᕐᔪᐊᓂᒃᓗ ᐃᓂᒋᔨᐅᔪᒥᑦ

ᐊᑐᖅᑕᐅᔪᒪᓇᔨᖅᑐᖅ:

- ᐃᑯᐊᓕᑎᑦᑎᓂᖅ



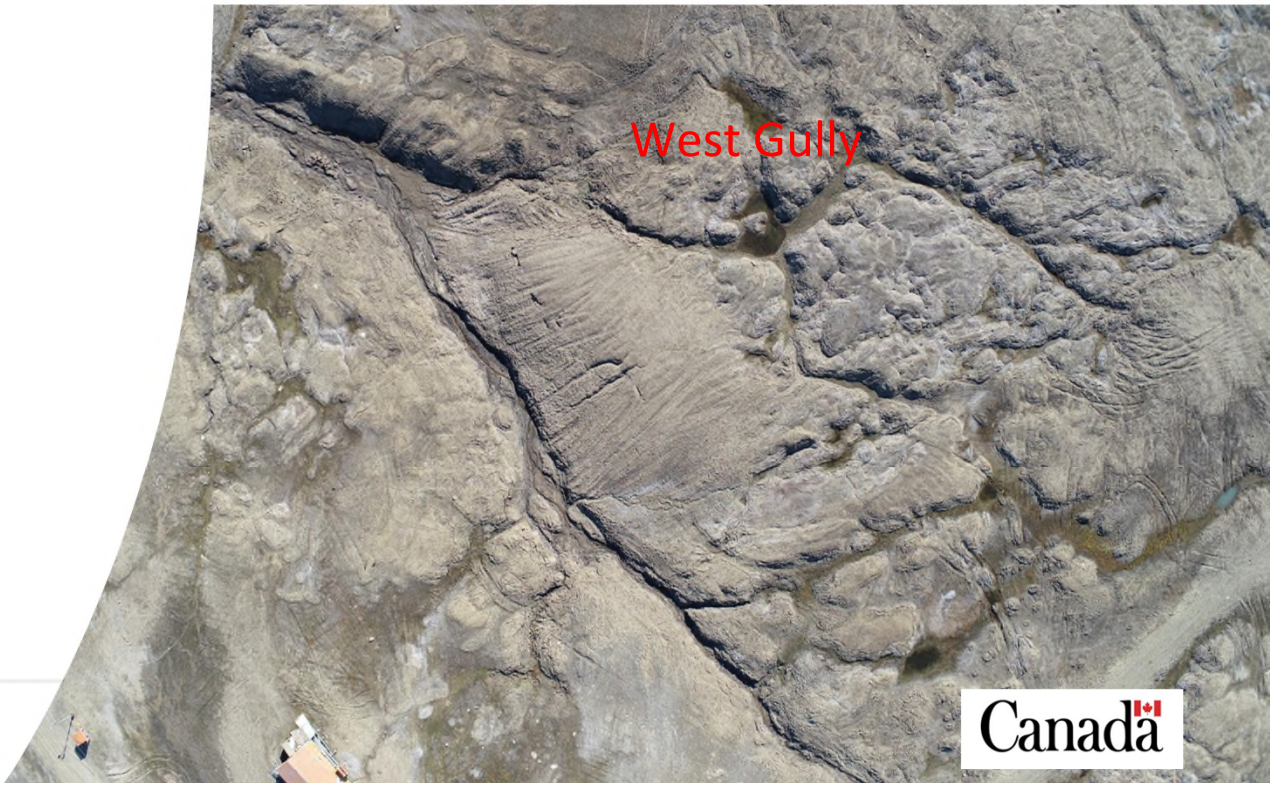


ᐊᖅᑕᖁᕕᐊᓗᐃᑦ (WDAs)

- ᑲᓇᖏᓇᖅ/ᐱᖓᓂᓇᖅᐸᓯᖏᓐ: ᐃᓱᐊᖅ ᐊᐢᕈᑎᒍᑦ ᐊᑦᑕᖁᓇᖁᓂᖅᖰᑭᑦᑐᖅ ᒪᓕᒐᓗᒍ ᐊᑦᑕᖁᓇᖅᑐᓄᑦ ᖃᐅᔨᓴᖁᓂᖅ, ᑭᓯᐊᓂ, ᓄᖕᔪᐸᑦᓕᐊᐸᖅ ᐊᓚᒪ ᓴᖅᑭᑦᑐᖅ ᐱᖁᑎᖅ ᐱᓕᕆᓄᓄᑦ ᐊᐃᑐᖅᑕᐅᐊᐸᖅ.

- ᐊᑐᖅᑕᐅᔪᒪᓇᔭᖅᑐᖅ:
  - ᑐᐊᐸᑲ ᐃᓕᓗᒍ ᑐᐊᐸᑲ ᖃᖓᓐᓂᑦ ᖃᖓᓐᓂᑦ ᓄᓇᐅᐸ ᖃᖓᓐᓂᑦ ᖃᓕᖅᓯᒪᑦᓗᓂ ᐊᐅᓕᑦᑎᓂᐊᖏᓗᓂ ᓄᖕᔪᐸᑦᓕᐊᔪᒥᑦ ᖃᖓᓐᓂᑦᓗ ᐃᒪᖏᒥᑦ
  - ᐱᓕᕆᔨᔪᑦ ᖃᐅᔨᓴᖁᓂᐊᖏᓗᓂ ᐱᓕᕆᐊᖏᑭᓐᓂᖅ





ᓴᐃᕐᕆᓪ ᓴᓂᓪ (ᖃᓪᓕᐅᔨᓪ, ᖃᓪᓕᐅᔨᖏᑐᓪ, ᐱᖏᑎᕐ)

3,900-ᕿᓗᐃᓪ ᖃᓪᓕᐅᔨᖏᑦᑐᓪ ᓯᓚ ᓯᖏᓪᑎᖅᑕᐅᔨᓗᓂᓪ (ᑕᐅᓴᖅᑭᓂᓂᓪᑐ ᓯᖏᓂᓗᖅᑕᐅᕆᓂᕐᒥᓪᓯᒪᔪᓪ), 50 ᖃᓪᓕᐅᔨᖏᑦᑐᓪ, ᖃᓴᓯᖃᓂᒋᓪ ᐊᐅᓪᒋᐊᑎᓪ ᐊᓐᒪ ᐱᖏᑎᓪ.



ᐊᑐᖅᑕᐅᔪᒪᓇᔨᖅᑐᖅ:
ᑯᓯᖅᓯᐊᖅ ᒥᖏᔭᑎᑎᒃ ᐋᔨᐃᓂᖅ (ᐱᔨᓗᐊᖅᖃᕐᓂ), ᑲᑎᑎᓕᑎᓂᓪ, ᐃᒋᓕᑎᓕᓕᓗ ᓄᑦᓪ ᐃᓂᒥ ᐱᓇᓯᒪᔪᓪ ᐊᒃᑕᑯᓄᓪ ᐃᒋᓪᑎᐢᓴᒃ.





ᐃᒍᖅᑎᖅᑕᐅᓗᓂᑎᒃ ᐊᒃᑕᑯᓪ

ᖃᐅᐊᖅᓴᖅᓇᖅᑐᑦ ᐃᒡᓗᖅᓯᐊᒥ ᐱᖅᐹᑎᑭᒃᐅᓯᑦ
ᖃᐅᔨᓴᖅᑕᐅᓂᖅᑭᑦ ᐊᒃᑕᖅᑕᐅᓯᒪᓗ ᖃᐅᓂᖅ
ᐊᖅᑭᑎᑎᓂᖅᑭᓂᓂᒃ ᐅᓴᖅᑕᐅᔪᒪᓯᑦ
ᐱᕼᖅᑕᐅᔪᒪᓕᖅᓴᑦ 22-ᓂᑦ
ᐃᒡᓗᖅᓯᐊᓂᑦ/ᓇᐸᐸᖅᑎᖅᑕᐅᔪᒪᓯᓂᑦ

ᐊᑐᖅᑕᐅᓯᒪᓇᕼᖅᑐᖅ:
ᐃᓂᑭᕼᐅᖅᑕᑐᒥ ᐃᑭᑦᑎᓂᖅ ᖃᐅᐊᖅᓴᖅᓇᖅᑐᓂᒃ ᐊᑐᒐᒃᕼᐊᐅᓯᓐᓄᖅᑐᖅᑐᓂᒃ ᐃᓂᒥ ᕼᐅᔪᓗᑎᒃ ᖃᐅᐊᖅᓴᖅᓇᖅᑐᓂᒃ ᐊᑐᒐᒃᕼᐊᐅᓯᓐᓄᖅᑐᖅᑐᓂᒃ ᓄᑦᒥ ᐃᓂᒥ ᕼᓇᕼᐅᔪᒪᓯᐅᓂᑦ ᐊᑐᒐᒃᕼᐊᐅᓯᓐᓄᖅᑐᓂᑦ ᐃᓂᒥ.

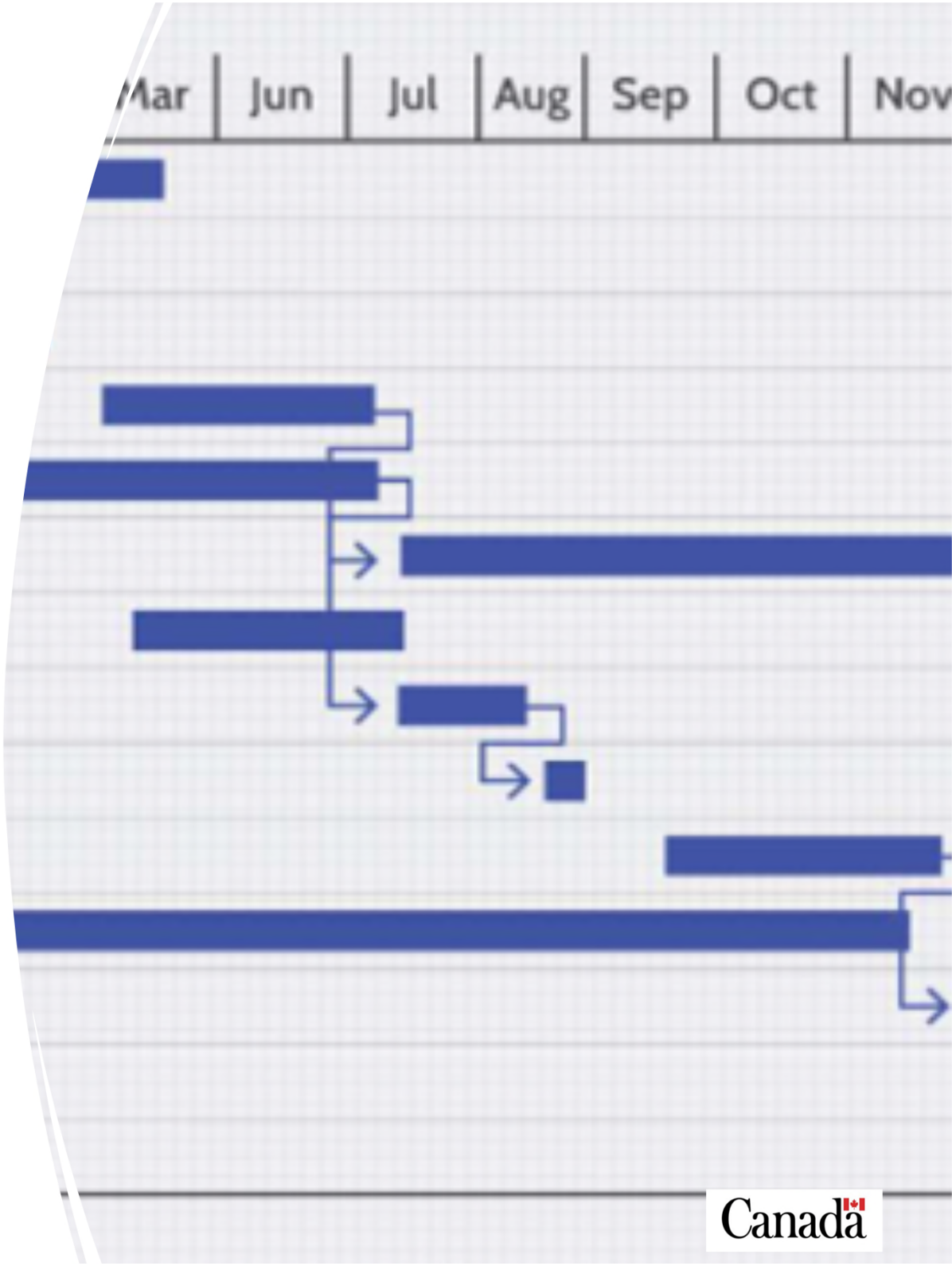






ᐊᖏᑦᑭᓱᓕᕆᓂᖅ ᐱᐅᖃᖅᖢᓂᒃ

- ᓴᖅᓪᓗᖅ ᑕᐅᑦᑐᓕᖅᑕᐅᓂᖏᓐᓄ 2025–ᒧᑦ 2026–ᒧᑦ
- ᐅᖃᓕᑲᓐᓂᒧᑦ ᐃᓕᐊᓪᓚᑎᑦᑎᓂᖅ 2025–ᒥ
- FCSAP–ᒧᑦ ᐱᓪᓗᐊᖏᓂᖏᓐᓄ V



ᓂᐅᕕᖏᑦᑕᕐᓂᖅ



- **ᑐᑦᓯᖏᐅᓯᐅᕐᐊᔪᓂᖅ – ᐃᓄᐃᑦ ᐃᑲᔪᓯᐊᖏᑐᓄᑦ ᕿᕐᓇᐅᑎᑦ (IBP)**

  - ᐊᖏᑦᓭᓱᖏᑎᑦᑎᓴᑲᓴᖅ ᐊᑭᑦᑐᖏᐅᑎᔨᓂᖅ ᐱᓕᕆᐊᖏᓪᓕᕆᔨᓂᖅ ᐃᓄᐃᑦ ᓇᖕᒥᖏᑕᐅᓄᑦᓗ ᐊᑭᑦᑐᖏᑎᓂᖅᓯᑦ ᐊᑐᖅᑕᐅᓴᑲᑐᑐᒍᑦ
    - ᐊᑦᓭᕐᓇᖅᓂᖅ, ᐃᖅᑲᓇᐃᔪᖅᑎᑦ, ᑲᓪᑐᑦᖅᑕᐅᔨᑦ ᐱᓕᒪᑦᓴᐃᓂᓪᓗ
    - ᐅᖅᖅᑎᑭᓕᑦ ᐃᓄᐃᑦ ᓇᖕᒥᓂᔪᑎᖏᑦ ᐊᑎᓕᐅᖅᑕᐅᕐᓇᖅ (51%–ᕿᓗᐃᑦ ᑲᒪᕿᓂᕆᔪᐅᔨᑦ ᓂᕈᐊᖅᑎᑦᑎᓂᓂᒪᑦ ᓇᖕᒥᓂᔪᖏᓐᓄᑦ ᐃᓄᖕᓂᑦ)

ᓂᐅᕕᖏᑦᑕᕐᓂᖅ

- **ᓄᓇᓕᖅᓂ ᐃᖃᓗᐃᔨᖅᑎᑦᑐᐃᓐᓇᕆᔨᓕᑦ ᑲᓐᑐᒥᑎᑎᒧᒍᑦ**
  - ᓴᓇᔨ
  - ᐅᕐᔪᒪᐃᑦᑐᕐᓂᐅᑎᓕᕆᔨᑦ
  - ᐅᒪᔨᓂᒃ ᖃᐅᔨᓴᖅᑎᑦ
  - ᓄᓇᓕᕋᓭᖃᖅᖏᓐᓂ ᐊᐅᓪᓕᐊᑎᑦ
  - ᐊᔪᖏᑦ ᐱᖏᕐᓴᐃᑦ
- **ᐱᓕᒪᓴᕐᖏᐅᔨᓐᓇᖅᑐᑦ**
  - ᐊᒻᓂᖅᑐᓕᕆᓂᕐᒧᑦ ᐃᓕᓴᕆᔨᐅᑎᒥᖅᑕᖅᑭᒪᓗᓂ
  - ᕐᔪᐊᖅᑐᑎᓂᒃ ᐊᑦᑕᕐᓇᖅᑕᐃᓕᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᖅᑕᐅᔨᓴᕐᓗ
  - ᐃᖃᓗᐃᔨᖅᖏᑦᑐᒥ ᖃᓄᐃᖅᑕᐅᓂᐊᕆᔨᓂᖅ ᐊᑦᑕᕐᓇᕐᑕᐃᓕᓂᕐᓗ
  - ᐊᑦᑕᕐᓇᖅᑐᓂᒃ ᐱᕐᔪᑎᓂᒃ ᐊᐅᓚᓕᖅᑐᖅ







ᐅᖃᐅᓯᖏᓚᐃᓕᑦ? / ᐊᐱᖃᓄᑦ?

- ᖃᓄᖅᓭᓗᒃ ᐅᑦᓂᔪᒥ ᐃᓕᐅᕐᓭᓗᖃᖅᑐᑎᒍᓐᓇ ᐃᓕᐅᕐᓭᓗᕆᔨᓂ!



ᐃᓱᓱᓄ ᐊᑲᑭᑐᐊᑭᑎᓂᓄᑦ
ᖃᐅᔨᑦᐊᕐᕕᖏᓱᖃᖅ

ᐅᐊᓂ ᐅᐊᐃᑦ:ᓱᑭᖅᓯᒪᔨᓄᑦ ᐃᓂᓄᑦ ᐱᓕᕆᔨ: Isachsen (ECCC)
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Appendix E

Site Figures



Crushed Drums and Other Metal Debris

Former Automated Weather Station

Runway ASTs

Air Strip

Upper Pump House

Kenn Borek Cat Train

See Inset A - Left

Airstrip Hanger Building

Main Station Area

See Main Station Map for Building Details

Former Tank Farms

East Waste Disposal Area

Shoreline Drum Cache

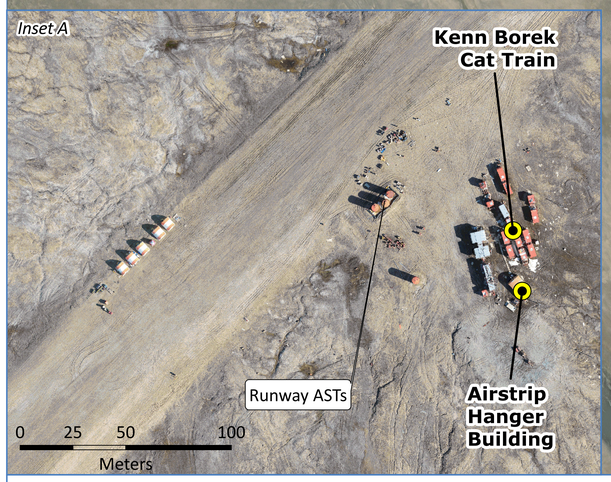
Runway Drum Cache

West Waste Disposal Area

Louise Bay

Borrow Area

Inset-A



Government of Canada / Gouvernement du Canada

Isachsen High Arctic Weather Station

Site Overview

LEGEND

- Site Boundary (DFRP)
- Building Location

NORTH

0 75 150 300

Meters

NUQSANA

outcome CONSULTANTS

DILLON CONSULTING

MAP DRAWING INFORMATION/DATA PROVIDED BY ATLAS, DFRP, DILLON CONSULTING LTD, OUTCOME CONSULTANTS INC. Service Layer Credits: World Topographic Map: Esri Canada, Esri, TomTom, Garmin, FAO, NOAA, USGS, NRCan, Parks Canada
Basemap Credits: Esri Community Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
World Hillshade: Esri, USGS

MAP CREATED BY: LK
MAP CHECKED BY: DM
MAP PROJECTION: NAD 1983 UTM Zone 13N
PROJECT: 19-1184
STATUS: DRAFT
DATE: 2025-05-17

Former Tank Farm
Hydrogen Building
Loop Shack
Remote Transmitter Building
Carpentry Shop
Operations Building
Equipment Dock
Cold Vault Storage
Sewage Pump House
Heavy Equipment Garage
Old Barracks
New Barracks
Antenna Shack
Plumbing Building
Power House
Maintenance Garage
New Garage
Old Garage
Metal Workshop
Shoreline Drum Cache
Louise Bay



Government of Canada
Gouvernement du Canada

Isachsen High Arctic Weather Station

Main Station Area

LEGEND

- Site Boundary (DFRP)
- Building Location
- Waste Disposal Area (may not represent entire extent)

NORTH

0 12.5 25 50
Meters

NUQSANA
outcome CONSULTANTS
DILLON CONSULTING

MAP DRAWING INFORMATION/DATA PROVIDED BY ATLAS, DFRP, DILLON CONSULTING LTD, OUTCOME CONSULTANTS INC. Service Layer Credits: World Topographic Map: Esri Canada, Esri, TomTom, Garmin, METI/NASA, USGS, NRCan, Parks Canada
World Hillshade: Esri, USGS

MAP CREATED BY: LK
MAP CHECKED BY: DM
MAP PROJECTION: NAD 1983 UTM Zone 17N
PROJECT: 19-1164
STATUS: DRAFT
DATE: 2020-05-17

Appendix F

Handout

Isachsen Decommissioning & Clean up Plan

ᐊᑐᑭᓐᓂᖅᑎᑕᐅᓂᖏᓐᓄᑦ ᓴᓗᒪᖅᓴᖅᑕᐅᓂᖏᓐᓄᓗᓐ

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Additional Resources

Inuit Firm Registry: Helps to maintain a list of Inuit firms, support Inuit business development, and assist with economic rights and benefits

Website: https://Inuitfirm.tunngavik.com

Procurement Assistance Canada: Find the resources and services available to support your business, including a procurement-related event calendar, workshops, seminars and other resources for businesses interested in selling goods and services to government

Website: https://www.canada.ca/en/public-services-procurement/services/acquisitions/support-for-businesses.html

Environment and Climate Change Canada | Environnement et Changement climatique Canada

ᖃᑉᐳᓗᒃᑖᖅᓯᐅᓂᖏᓐᓄᑦ:

ᐅᕙᓪ ᐅᐊᐃᑦ:ᓱᑕᖅᓯᒪᔨᓐᓂ ᐃᓕᓐᓂ ᐱᓕᕆᔨ: Isachsen (ECCC)

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ᐃᑲᔪᑎᒃᓴᒃᑲᓐᓂᖅ

ᐃᓄᐃᑦ ᓇᖓᒥᓂᔪᐊᑎᖓᓂᑦ ᐊᑎᓕᐅᖅᑕᐅᔪᒃ: ᐃᑲᔪᓱᖅ ᐃᓄᐃᑦ ᓇᖓᒥᓂᔪᐊᑎᖓᓂᓐᓂᒃ, ᐃᓄᐃᑦ ᓇᖓᒥᓂᔪᐊᑎᖓᓂᓐᓂᒃ ᐱᓕᕆᓂᐊᑎᖓᓂᖅᓯᓂᑕᒃ, ᐃᑲᔪᖅᓂᑎᓗ ᐱᓕᕆᓂᐊᓕᖓᔪᖅ ᐃᑲᔪᑎᑎᓗᓐ

ᐃᑭᐊᖅᑭᔪᒃ: https://Inuitfirm.tunngavik.com

ᓂᐅᔪᖅᑕᑦᓂᖓᔪᑦ ᐃᑲᔪᖅᑕᐅᓂᖓᔪᑦ Canada: ᓇᓂᓱᓂᑎᑦ ᐃᑲᔪᑭᑎᕐᓴᓂ ᐊᓚᒪᓗ ᐱᓵᑎᕋᐅᑎᓂ ᐊᑐᐃᓐᓇᐅᔪᓂ ᐃᑲᔪᖅᓂᓗᒍ ᓇᒪᒥᓂᔪᐊᑎᖓᓂᕐᒪᐃᑦ, ᐱᖅᓱᐅᑎᓂᑦᓂ ᓂᐅᔪᖅᑕᑦᓂᖓᔪᑦ-ᐊᑐᐊᓂᓕᓐᓄᑦ ᖃᓄᐃᓕᓕᐅᕋᓂᐅᔪᖅᓯᔪᑦ ᐅᓪᓗᖅᓱᐅᑎ, ᐃᓕᓐᓂᐊᕆᐃᓐᓇᖅᓯᓂᖅ, ᑲᑎᒪᑦᑎᐊᓂᑦ ᐊᓚᒪᓗ ᐊᓱᖏᑦ ᐃᑲᔪᑎᖅᓴᐃᑦ ᓇᒪᒥᓂᔪᐊᑎᖓᓂᓐᓄᑦ ᓂᐅᔪᖅᑐᖅᑭᒪᔨᓄᑦ ᐱᔪᐊᑎᓂᑦ ᐊᓚᒪᓗ ᐱᓵᑎᕋᐅᑎᓂᑦ ᒪᓕᒪᓄᓐᓄᑦ

ᐃᑭᐊᖅᑭᔪᒃ: https://www.canada.ca/en/public-services-procurement/services/acquisitions/support-for-businesses.html

Canada

Appendix G

Photo Log

Isachsen HAWS: Community Engagement Photo Log



Photo 1: Conference room setup at the ATCO South Camp Resolute Bay, NU prior to the meeting (January 29, 2025).



Photo 2: Sign-in and pre-meeting food and refreshments (January 29, 2025).



Photo 3: Sign-in and pre-meeting food and refreshments (January 29, 2025).

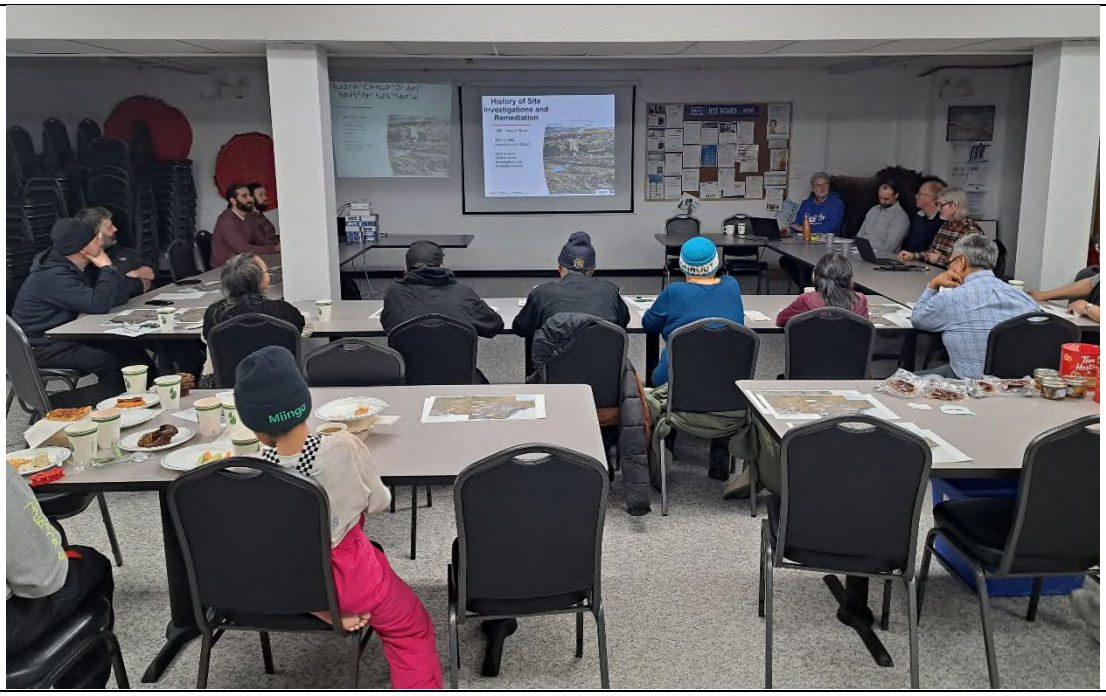


Photo 4: Presentation in progress (January 29, 2025).



Photo 5 Presentation in progress (January 29, 2025).



Photo 6: Presentation in progress (January 29, 2025).



Photo 7: Presentation in progress (January 29, 2025).



Photo 8: Collection of draw prizes (January 29, 2025).



Photo 9: Draw Prizes: Maple candy (Arctic Char) and Caribou jerky (January 29, 2025).



Photo 10: Draw Prizes: Pickled Narwhal (January 29, 2025).



Photo 11: Draw Prizes: Frozen Arctic Char bites (January 29, 2025).