KUUKYOAK

NUNAVUT WATER BOARD

APPLICATION FOR A TYPE B WATER LICENCE

Remediation of the Isachsen High Arctic Weather Station, Ellef Ringnes Island, Nunavut

September 2026

KUUKYOAK

50 Ublogiahokyok Road,
Unit 106,
P.O Box 1346
Cambridge Bay,
Nunavut,
X0B 0C0
Canada

September 15, 2026

Nunavut Water Board
P.O. Box 119 Gjoa Haven,
NU X0B 1J0

Attention: Nunavut Water Board, Manager of Licensing

Reference: Application for at Type B Water Licence for
Remediation of the Isachsen Former High Arctic Weather Station
(HAWS), Ellef Ringnes Island, Nunavut

Dear Sir/Madame,

Kuukyoak Ltd. (Kuukyoak) is pleased to submit a water licence application on behalf of Environment and Climate Change Canada (ECCC) for the use of water and deposit of waste for the remediation of the Isachsen Former High Arctic Weather Station (HAWS) on Ellef Ringnes Island, approximately 500 km northwest of Resolute, Nunavut. The site is located within North Baffin region.

The undertaking has passed its conformance evaluation with the Nunavut Planning Commission (NPC) and its screening with the NIRB. ECCC is also applying to Crown-Indigenous Relations and Northen Affairs Canada (CIRNAC) Lands Administration Branch for an amendment to its Class A Land Use Permit and a new Quarry Permit.

If you have any questions regarding the enclosed application, please contact the undersigned at your convenience.

Sincerely,
Kuukyoak Ltd.

Don Plenderleith

_____

Don Plenderleith M.Sc., P.Eng.
Environmental Engineer
Email: dplenderleith@360eec.com
Phone: 613-880-3352

Executive Summary English

This document presents the application for a Type B Water Licence for the Isachsen Bundle Remediation Project. The undertaking is expected to require a Type B water licence due to potential water crossings (culverts) on access roads and possible water use over 50 m3/day for camp operations (with a capacity of up to 40 people depending on construction operations) and compaction required during construction of roads and the landfill.

Non-potable water will be extracted from the creek north of the airstrip. Potable water for the camp will be drawn from the same source and treated on site. Camp non-potable water use will be approximately (2.0 m3 per day). Grey water from washing activities will be treated and released back to the site a minimum of 30 m from any water body. Blackwater will be solidified and transported off-site for appropriate disposal.

Waste management includes construction of a new engineered landfill for the demolition waste and capping and closure of the previously used waste deposit areas.

The site is occupied by approximately 22 abandoned structures with associated infrastructure, equipment, and supplies. Other features identified at the site, include former water and sewage infrastructure, large-scale fuel storage tanks, two waste disposal areas, small day-fuel tanks, thousands of empty/partially empty drums, other abandoned equipment, and scattered debris. A summary of the wastes to be deposited on site is provided below:

- Approximately 950 m3 of crushed waste fuel drums will be deposited in the new engineered on-site landfill.
- Fifty (50) Above-Ground Storage Tanks (ASTs) will be decommissioned, cut up and deposited in the new engineered on-site landfill.
- Twenty-two (22) buildings will be abated and demolished. Non-hazardous waste will be disposed of in the new engineered landfill and the hazardous waste will be disposed of at a licenced, off-site facility.
- Approximately 760 m3 of non-hazardous waste associated with the heavy equipment will be deposited in the new engineered on-site landfill.
- Approximately 100 m3 of miscellaneous non-hazardous waste debris will be collected, consolidated and deposited in the new engineered on-site landfill.
- A new engineered landfill is designed to accommodate the anticipated range of consolidated waste volume (currently estimated at 4,500 m3 to 6,200 m3).

And

- Approximately 13,000 L of non-incinerable residual liquids will be sent off-site for disposal.

Executive Summary in Inuktitut (Nattilingmiutut)

ᑕᓐᓇ ᑎᑎᕃᑲᕃᑎᒃᓴᖅ ᐱᓇᔨᑎᒥᐅ ᖃᓄᐃᑦᑐᓂᖏᓐᓄ B ᐃᒪᖏᑦ ᓯᐃᓴᓴᔪᒥᐅ ᐊᐃᓴᓴᓐ ᑲᑎᒪᖏᓴᐅᓂᖏᑦ ᐱᓯᑕᒪᑦ. ᐱᓯᕕᓂᐅᔨᖅ ᓂᕕᐅᑭᓴᐅᔨᖅ ᐱᓴᕕᐊᖏᖏᓂᐊᖏᓂᖏᓐᓄᓂᐅ ᖃᓄᐃᑦᑐᓂᖏᓐᓄ B ᐃᒪᖏᑦ ᓯᐃᓴᓴᔪᒥᐅ ᐃᒪᖏᑦ ᐃᑲᖏᐅᑐᐃᓐᓇᕕᐊᖏᖏᓂᖏᓐᓄᓂᑦ (ᑯᓴᐃᑦ) ᐊᖏᑯᑎᑯᓂ ᐊᓯᒪ ᐃᒪᖏᑎᐅ ᐊᑐᑐᐃᓐᓇᕕᐊᖏᖏᓂᖏᓐᓄᓂᑦ 50 m3/ᐅᓪᓗᖅ ᐅᖏᓚᒃᓂᑦ ᑕᖏᒻᒥᓐᖏᑎᒃ ᐊᐅᓯᓂᕕᑦᐅᔨᓂᑦ (ᐃᓂᓐᓄᑦᓯᓗᓂᑦ 40-ᓂᑦ ᐃᓂᖏᓂᑦ ᒪᓪᑐᓗᓂ ᐱᓇᐅᐅᓪᓚᐊᔨᓂᑦ ᐊᐅᓯᓂᕕᑦᐅᓪᓚᖏᓐᓂᑦ) ᐊᓯᒪ ᔪᖏᓪᓚᑎᕕᑦᐊᖏᖏᓂᖅ ᐱᓇᑦᐅᑎᑦᓗᑎᑦ ᐊᖏᑯᑎᑦ ᐊᓯᒪ ᐃᑦᑕᖏᓐᖏᑦ.

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ᐊᓕᒐ

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1.0 Application Form for a New Water Licence

P.O. BOX 119
GJOA HAVEN, NU X0B 1J0
TEL: (867) 360-6338
FAX: (867) 360-6369

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYIT
OFFICE DES EAUX DU NUNAVUT

GENERAL WATER LICENCE APPLICATION
(APPLICATION FOR NEW WATER LICENCE)

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

LICENCE NO:
(for NWB use only)

1. APPLICANT (PROPOSED LICENSEE) CONTACT INFORMATION (name, address)

Name: Owen Wade
Company: Environment and Climate Change Canada
Address: 351 Boulevard Saint-Joseph Gatineau, QC J8Y 3Z4
Phone: 613.981.8652
e-mail: owen.wade@ec.gc.ca

2. APPLICANT REPRESENTATIVE CONTACT INFORMATION if different from Block 1 (name, address)

Name: Don Plenderleith
Company: 360 Engineering & Environmental Consulting Ltd.
Address: Unit 340, 1200-59 Avenue SE Calgary, AB T2H 2M4
Phone: 613.880.3352
e-mail: dplenderleith@360eec.com

3. NAME OF PROJECT (including the name of the project location)

Remediation of the Isacshen Former High Arctic Weather Station (HAWS), Ellef Ringnes Island, Baffin, NU

4. LOCATION OF UNDERTAKING

Project Extents

NW:	Latitude: (78°48'9.5"N)	Longitude: (103°35'9.5"W)
NE:	Latitude: (78°48'9.5"N)	Longitude: (103°28'47.8"W)
SE:	Latitude: (78°46'11.3"N)	Longitude: (103°35'9.5"W)
SW:	Latitude: (78°46'11.3"N)	Longitude: (103°28'47.8"W)

Camp Location(s)

Latitude: (78°46'40" N) Longitude: (103°31'15"W)

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

NTS Map Sheet No.: 069F13 Map Name: N/A Map Scale: 1:50,000

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

Sub-surface

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

☒ Mineral Lease from Indian and Northern Affairs Canada (INAC)
Date (expected date) of issuance: __Jan 01, 2027_ Date of expiry: ___Jan 01, 2032_____
A quarry permit application will be submitted for the development and operation of the off-site borrow pit. The dates noted above are approximate.

Surface

☒ Crown Land Use Authorization from Indian and Northern Affairs Canada (INAC)
Date (expected date) of issuance: __Jan 01, 2027_ Date of expiry: ___Jan 01, 2032_____
A Class A LUP application will be submitted to cover all anticipated activities in the project. The dates noted above are for the new LUP and are approximate.

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

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

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

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

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

Name of entity(s) holding authorizations: Environment and Climate Change Canada (ECCC)

7. NUNAVUT PLANNING COMMISSION (NPC) DETERMINATION

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

☒ North Baffin
☐ South Baffin
☐ Akunniq
☐ Keewatin
☐ Sanikiluaq
☐ West Kitikmeot

Is a land use plan conformity determination required?

☒ Yes ☐ No

If Yes, indicate date issued and attach copy _____June 3, 2026_____
If No, provide written confirmation from NPC confirming that a land use plan conformity review is not required.

8. NUNAVUT IMPACT REVIEW BOARD (NIRB) DETERMINATION

Is an Article 12 Part 4 screening determination required?

☒ Yes ☐ No

If Yes, indicate date issued and attach copy ___August 28, 2026_____
If No, provide written confirmation from NIRB confirming that a screening determination is not required.

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

The Isachsen decommissioning and remediation project is expected to require a Type B water licence due to potential water crossings (culverts) on access roads and possible water use over 50m3/day for camp operations and compaction required during construction of roads and the landfill. Waste includes construction of a new landfill for the deposit of demolition waste and closure of existing waste areas. Detailed plans and drawings are attached.

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

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. A Remedial Options Analysis (ROA) study was completed to select preferred alternatives based on remediation objectives.

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

☐ Industrial ☐ Agricultural
☐ Mining and Milling (includes exploration/drilling/exploration camps)
☐ Conservation
☐ Municipal (includes camps/lodges) ☐ Recreational
☐ Power ☒ Miscellaneous (describe below):
Site remediation.

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

Information in accordance with applicable Supplemental Information Guidelines (SIG) must be submitted with a New Water Licence Application. Indicate which SIG(s) are applicable to your application.

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

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

☒ To obtain water for camp/ municipal purposes
☒ To obtain water for industrial purposes ☐ To divert a watercourse
☒ To cross a watercourse ☐ To modify the bed or bank of a watercourse
☐ To alter the flow of, or store water ☐ Flood control
☐ Other: _____

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

Name of water source(s) (show location(s) on map): N/A (Unnamed)

Describe the quality of the water source(s) and the available capacity: Creek and/or meltwater ponds north of the airstrip will be the primary water source for earthworks/construction and domestic use. Potable water for drinking may be transported to the site during regular supply flights to supplement the on-site water source.

Provide the overall estimated quantity of water to be used: _____50-300_____ m^3/day

Provide the estimated quantity(s) of water to be used from each source: Approximate average of 50m3/day from meltwater ponds (if adequate water is available) and the remainder from the creek.

Indicate the estimated quantities to be used for each purpose (camp, drilling, etc.) Approximate average of 50m3/day for compaction during construction of roads and landfill, 25 m3/day for camp operation.

Describe the method of extraction(s): Pumped and stored in on-site storage tanks.

Estimated quantity(s) of water returned to source(s) 0m^3/day.

Describe the quality of water(s) returned to source(s): ____N/A_____.

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

- ☐ Sewage
- ☒ Solid Waste
- ☐ Hazardous
- ☒ Bulky Items/Scrap Metal
- ☐ Animal Waste
- ☐ Waste oil
- ☒ Greywater
- ☐ Sludges
- ☐ Contaminated soil and/or water
- ☐ Other (describe): _____

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

Type of Waste	Composition	Quantity Generated	Treatment Method	Disposal Method
Scrap Metal	ASTs, drums, equipment	~1,000 m3	Clean, crush/cut and consolidate	On-site engineered landfill
Waste Oil / Sludges	Drums, ASTs	13,000 L	N/A	Removal for off-site disposal
Hazardous	Coolant, fuel	10m3	N/A	Removal for off-site disposal
Solid Waste	Building materials, scrap metal, etc.	5,000 m3	Double bag	On-site engineered landfill
Sewage	Blackwater	20 people	Solidifed	Off-site disposal
Greywater	Greywater	20 people	Filtration/treatment	On-site > 100m from a waterbody

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

Authorization: __Land Use Permit / Quarry Permit _

Administering Agency: __CIRNAC / _____

Project Activity: Remediation of the Isacshen Former HAWS, Ellef Ringnes Island, Baffin, NU

(expected date) of issuance: Jan 01, 2027 Date of expiry: Jan 01, 2032

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

An Environmental Impact Assessment (EIA) was completed for the Project and submitted as part of the NIRB screening. Upon review of the EIA, the NIRB provided the following feedback: "the NIRB is of the view that the project proposal is not likely to cause significant public concerns, and it is unlikely to result in significant adverse environmental and social impacts."

18. WATER RIGHTS OF EXISTING AND OTHER USERS OF WATER

Provide the names, addresses and nature of use for any known persons or properties that may be adversely affected by the proposed undertaking, including those that hold licences for water use in precedent to the application, domestic users, in-stream users, authorized waste depositors, owners of property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders, and holders of other rights of a similar nature.

Advise the Board if compensation has been paid and/or agreement(s) for compensation have been reached with any existing or other users.
N/A

19. INUIT WATER RIGHTS

Advise the Board of any substantial affect of the quality, quantity or flow of waters flowing through Inuit Owned Land (IOL), and advise the Board if negotiations have commenced or an agreement to pay compensation for any loss or damage has been reached with one or more Designated Inuit Organization (DIO).
N/A

20. CONSULTATION – Provide a summary of any consultation meetings including when the meetings were held, where and with whom. Include a list of concerns expressed and measures to address concerns.

During January 2026 a Community Engagement meeting was held at the South Camp Inn in Resolute Bay, Nunavut with members from the two communities closest (Resolute Bay and Grise Fiord) to the site to present and receive feedback on the current decommissioning and clean-up plans for the site.

21. SECURITY INFORMATION

Provide an estimate of the total financial security for final reclamation equal to the total outstanding reclamation liability for land and water combined sufficient to cover the highest liability over the life of the undertaking. Estimates of reclamation costs must be based on the cost of having the necessary reclamation work done by a third party contractor if the operator defaults. The estimate must also include contingency factors appropriate to the particular work to be undertaken.

Where applicable, the financial security assessment should be prepared in a manner consistent with the principals respecting mine site reclamation and implementation found in the *Mine Site Reclamation Policy for Nunavut,* Indian and Northern Affairs Canada, 2002.

22. FINANCIAL INFORMATION **N/A**

Provide a statement of financial responsibility. If the applicant is a business entity, provide a list of the officers of the company. If the applicant is a business entity attach a copy of the Certificate of Incorporation or evidence of registration of the company name.

Not applicable. Proponent is a Federal Deparment.

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

Summary of Remedial Action Plan (RAP) Isachsen High Arctic Weather Station (HAWS), (Kuukyoak, 2026)
Environmental Impact Assessment (Dillon Consulting & Outcome Consultants, 2026)
Emergency Response Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut (Kuukyoak, 2026)
Erosion and Sediment Control Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut (Kuukyoak, 2026)
Spill Prevention Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut (Kuukyoak, 2026)
Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut (Kuukyoak, 2026)

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

Construction
Proposed Start Date: April 15, 2027 (month/year) Proposed Completion Date: May 29, 2031 (month/year)

Operation
Proposed Start Date: _____N/A_____ (month/year) Proposed Completion Date: _____N/A_____ (month/year)

Closure
Proposed Start Date: _____N/A_____ (month/year) Proposed Completion Date: _____N/A_____ (month/year)

Post - Closure
Proposed Start Date: _____N/A_____ (month/year) Proposed Completion Date: _____N/A_____ (month/year)

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

Construction
☐ Winter ☐ Spring ☐ Summer ☐ Fall ☒ All season

Operation
☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

Closure
☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

Post - Closure
☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

25. PROPOSED TERM OF LICENCE

Number of years (maximum of 25 years): _____5_____ years

Requested Date of Issuance: __Dec 15, 2026__ (month/year) Requested Expiry Date: ___Dec 15, 2031__ (month/year)

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

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

The project will use NWB's Standardized Form for Annual Reporting.

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

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

☒ Yes ☐ No If no, date expected _____

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

☒ Yes ☐ No If no, date expected _____

Completed General Water Licence Application form.

☒ Yes ☐ No If no, date expected _____

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

☒ Yes ☐ No If no, date expected _____

English Summary of Application.

☒ Yes ☐ No If no, date expected _____

Inuktitut and/or Inuinnaqtun Summary of Application.

☒ Yes ☐ No If no, date expected _____

Application Fee of $30.00 CDN (Payee Receiver General for Canada).

☒ Yes ☐ No If no, date expected _____

Water Use Fee Deposit of $30.00 CDN (Payee Receiver General for Canada). The actual water use fee will be calculated by the NWB based upon the amount of water authorized for use in accordance with the Regulations at the time of issuance of the licence.

☒ Yes ☐ No If no, date expected _____

28. **SIGNATURE**

Owen Wade	Contaminated Sites Officer	Wade, Owen	Digitally signed by: Wade, Owen DN: CN = Wade, Owen C = CA O = GC OU = EC-EC Date: 2026.09.18 10:35:10 -04'00'
Name (Print)	**Title (Print)**	**Signature**	**Date**

2.0 Checklist and Tabular Information in support of Application

2.0 Minimum Application Requirements (Application Checklist)

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	NWB Concordance Assessment
Minimum Application Requirements	1	General Water Licence Application Form (see the NWB's *Guide 4: Completing and Submitting a Water Licence Application for a New Licence*) or Application for Water Licence Amendment Form, if appropriate (see NWB's *Guide 7: Licensee Requirements Following the Issuance of a Water Licence*).	**Y**		**General Water Licence Application Owen Wade (ECCC) Sept 2026**		**Application Form**	
	2	Information required to satisfy the requirements of the SIG including plans, reports and designs.	Y		**General Water Licence Application Owen Wade (ECCC) Sept 2026**		Section 1 and Appendix A and C of Application Package	
	3	Executive summary in english.	Y		Executive Summary in Water Licence Application package. Don Plenderleith, Sept 2026		Page 3 of Application Package	
	4	Translated executive summary in appropriate language and dialect.	Y		Executive Summary Translsted into Inuktitut and included in Water Licence Application package. Don Plenderleith, Sept 2026		Page 4 and 5 of Application Package	
	5	Application fee.	N/A	This application is being made on behalf of the Government of Canada.	N/A		N/A	
	6	Water use fee.	N/A	This application is being made on behalf of the Government of Canada.	N/A		N/A	
	7	A table indicating concordance of the application and supporting documents to the Guidelines. These generic Guidelines are provided in excel as a tool for applicants to provide the necessary concordance table.	Y		**General Water Licence Application Owen Wade (ECCC) Sept 2026**		Section 1 of Application Package	

Qualifications:

1 Applications that do not include all of the items listed above will be returned to the applicant as incomplete with a request for the deficient information.
2 If more than one licensable activity or facility is proposed that requires a water licence (eg. multiple water sources, waste deposits, structures, crossings, etc.) the required information must be provided for each activity or facility.
3 Information between all documents that make up the application package must be consistent and must be accurately cross referenced.
4 The application must distinguish between recommendations or options and actual commitments to chosen alternatives.
5 For additional guidance regarding the submission of electronic documentation, see the NWB's *Guide 6: Electronic Documentation: Submissions and Registry* .
6 The applicant, where practical, may combine components of the information requested in the SIG into more concise plans to provide clarity and eliminate duplication. If this practice is considered, then the applicant must clearly outline, through proper referencing and clearly detailed statements, how the NWB should consider the documents that have combined elements of information. Information management is the responsibility of the applicant.
7 The applicant must submit a concise executive summary of the application package. In addition, the Applicant shall submit an executive summary for each separate supporting document, report or study. All executive summaries shall be provided in English, Inuktitut and/or Inuinnaqtun (where applicable).

The applicant must complete the yellow columns of the worksheet(s). Blue columns are for NWB use only.

3.0 General Water Licence Application

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Applicant	**1**	Provide the full name of the applicant and contact person including contact information (position, phone number, address, fax number and email address).	Y				General Water Licence Application Section 1		
Applicant Representative	**2**	Provide the name and contact information of any party submitting the application on behalf of the applicant (including position, phone number, address, fax number and email address).	Y				General Water Licence Application Section 2		
	3	Provide a signed letter authorizing a party to be the applicant's representative in the licensing process.	N/A	This application is being made on behalf of the Government of Canada.					
Name of Project	**4**	Provide the name of the project.	Y				General Water Licence Application Section 3		
Location of Undertaking	**5**	Provide coordinates of the project extents.	Y				General Water Licence Application Section 4		
	a	Provide location by Latitude and Longitude (degrees, minutes and seconds).	Y				General Water Licence Application Section 4		
	b	Provide location by UTM coordinates, if available.	Y				General Water Licence Application Section 4 Degrees, Minutes, Seconds		
	c	Provide the distances to the nearest communities.	Y		Environmental Impact Assessment (EIA): Section 3.1, Nunavut (DOJV, 2025)		Application Package, Appendix B, first report		
	6	Indicate whether the drainage basin, in which the project is located, is shared with any other jurisdiction. If applicable, indicate which jurisdiction.	N/A	The project is not shared with any other jurisdiction.					
Map	**7**	Provide a map at a 1:50,000 scale based on the National Topographic Series indicating the location of the undertaking, watercourses and the location of waste deposits. Additional maps at various scales may be provided if those maps will provide additional information or clarification. All additional maps must indicate the scale, map sheet number, and location of north.	Y				Application Package Appendix A - NTS Map Sheet and additional maps and plans		
Nature of Interest in the Land	**8**	Provide the nature of the interest in the land associated with the proposed undertaking, including:	Y				General Water Licence Application Section 6		
	a	Sub-surface leases from Nunavut Tunngavik Incorporated (NTI) and/or Indian and Northern Affairs Canada (INAC) as well as surface authorizations from INAC for crown land use, a Designated Inuit Organization (DIO) for Inuit Owned Land (IOL) use, or the Government of Nunavut for Commissioner's land use. Provide the permit or licence numbers.	N/A	Not applicable to this project.					
	b	The date or expected date of issuance of any authorization and the date of expiry.	Y				General Water Licence Application Section 6		
	9	Indicate whether the applicant is the name of the entity holding the authorization for the interest in the land and if not, provide the name of the entity holding the authorization.	Y				General Water Licence Application Section 6		
NPC Determination	**10**	Provide written confirmation from the NPC confirming that NPC's requirements under the NLCA regarding land use plan conformity (Article 11 of the NLCA) have been addressed.	Y		NPC Conformity Determination letter received June 3, 2026		Application Package Appendix B		
NIRB Determination	**11**	Provide written confirmation from the NIRB confirming that NIRB's requirements under the NLCA regarding development impact assessment (Article 12 of the NLCA) have been or are in the process of being addressed. Documentation may include:	Y		NIRB Screening Decision letter received Aug 28, 2026		Application Package Appendix B		
	a	Written confirmation from NIRB that the project proposal does not require screening;	Y		NIRB Screening Decision letter received Aug 28, 2026		Application Package Appendix B		

3.0 General Water Licence Application

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
	b	NIRB's screening determination;	Y		NIRB Screening Decision letter received Aug 28, 2026		Application Package Appendix B		
	c	If a review is required, NIRB's recommendation to the Minister regarding the type of review;	NA						
	d	If a review is required, the Minister's written decision regarding the review of the development proposal;	NA						
	e	If a review is required, NIRB's project certificate;	NA						
	12	List of activities requested for exception in accordance with NLCA s. 12.10.2;	N/A	Activity is not requested for exception.					
	13	Indicate whether any Type B water licence application is for an activity to be considered for interim, short term approval in accordance with NLCA s. 13.5.5.	N/A	No activities in interim.					
Description of Undertaking	14	See section 4 of this SIG for specific requirements.							
Other Applicable Supplemental Information Guidelines	15	Indicate whether any other Supplemental Information Guidelines apply to the undertaking including the following:	Y		Tourist or Remote Camp		General Water Licence Application Section 11 and Tables 6, 7 and 8 herein		
	a	Hydrostatic testing	N/A	Not within Project Scope.					
	b	Tannery	N/A	Not within Project Scope.					
	c	Tourist / remote camp	Y				General Water Licence Application Section 11		
	d	Landfarm and on-site storage of hydrocarbon contaminated soil	N/A	Not within Project Scope.					
	e	Onshore oil and gas exploration drilling	N/A	Not within Project Scope.					
	f	Mineral exploration/ remote camp	N/A	Not within Project Scope.					
	g	Advanced exploration	N/A	Not within Project Scope.					
	h	Mine development	N/A	Not within Project Scope.					
	i	Municipal	N/A	Not within Project Scope.					
	j	General Water Works	N/A	Not within Project Scope.					
	l	Power	N/A	Not within Project Scope.					
Options (Alternatives)	16	Provide a brief explanation of the alternative methods or locations that were considered to carry out the project.	N/A	No alternatives possible.					
Water Use	17	See section 6 of this SIG for specific requirements							
Water Use: Quality and Quantity	18	See section 6 of this SIG for specific requirements							
Waste Disposal	19	See section 7 of this SIG for specific requirements							
Waste Disposal: Quality and Quantity	20	See section 7 of this SIG for specific requirements							
Other Authorizations	21	Provide a list of any authorizations required in relation to the project in addition to the water licence. For each additional authorization required for the project, provide the name of the authorization, the administering agency, the project activity requiring the authorization, the date or expected date of issuance and the date of expiry. Provide a description of how those authorizations may affect the NWB's water licensing process.	Y				General Water Licence Application Section 16		
	22	Provide formal applications to the Navigable Waters Protection Program (NWPP) for any works if applicable.	N/A	Not within Project Scope.					
	23	Provide a timetable for filing the appropriate plans and procedures required by government parties.	Y				General Water Licence Application Section 16		
	24	Indicate whether the applicant/ licensee holds any existing water licences. If applicable, provide the licence number and expiry date of any existing water licences.	N						

3.0 General Water Licence Application

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Predicted Environmental Effect and Proposed mitigation measures	**25**	Identify the potential effect of water use and waste disposal on the following components:	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.6.3.4 - Effects and Mitigation on Hydrology and Hydrogeology		
	a	Groundwater and Surface Water including:	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.6.3.4 - Effects and Mitigation on Hydrology and Hydrogeology		
		changes in flow (including seasonal rate of flow)	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.6.3.4 - Effects and Mitigation on Hydrology and Hydrogeology		
		quantity	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.6.3.4 - Effects and Mitigation on Hydrology and Hydrogeology		
		quality	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.6.3.4 - Effects and Mitigation on Hydrology and Hydrogeology		
	b	Land including:	Y		Environmental Impact Assessment (DOJV, 2026)		General Water Licence Application Section 17		
		geologic structure change	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.6.3.3 - Effects and Mitigation on Geomorphology		
		soil contamination	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.6.3.5 - Effects and Mitigation on Soils		
		compaction, settling and erosion	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.6.3.3 - Effects and Mitigation on Geomorphology		
		alteration of the permafrost regime	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.3.3.2 - Site Remediation		
		riparian zone loss	N/A	No anticipated riparian zone loss.	Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.6.3.3 - Effects and Mitigation on Geomorphology		
	c	Vegetation including:	Y		Environmental Impact Assessment (DOJV, 2026)		General Water Licence Application Section 17		
		species composition and abundance	N/A	Working in previously disturbed area with no vegetation					
		non-native species introduction	N/A	Working in previously disturbed area with no vegetation					
		accumulation of toxins and heavy metals (in relation to remediation objectives for closure)	N/A	Working in previously disturbed area with no vegetation					
	d	Aquatic Ecosystems including:	Y		Environmental Impact Assessment (DOJV, 2026)		General Water Licence Application Section 17		
		fish	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.5.3.2 - Fish and Fish Habitat		
		benthic invertebrates	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.2.4 - Human Health and Ecological Risk Assessment		
		plankton	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.5.3.2 - Fish and Fish Habitat		

3.0 General Water Licence Application

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
	26	See sections 5, 6, 7 and 8 of this SIG for additional information requirements							
Existing and Other User Water Rights	**27**	Provide the names, addresses, and nature of use for any known persons or properties that may be adversely affected by the proposed undertaking, including those that that hold licences for water use in precedent to the application, domestic users, in-stream users, authorized waste depositors, owners of property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders, and holders of other rights of a similar nature.	NA	No persons or properties identified.	None		General Water Licence Application Section 18 to 20		
	28	Provide a description of any potential effects of the project on the persons or properties identified in item 27 of this section.	N/A	No persons or properties identified.			Appendix C, EIA Report, Section 3.6.3.4 - Effects and Mitigation on Hydrology and Hydrogeology		
	29	Provide a description of the measures incorporated into the project design to mitigate effects of the project on the persons or properties identified in item 27 of this section.	N/A	No persons or properties identified.			Appendix C, EIA Report, Section 3.6.3.4 - Effects and Mitigation on Hydrology and Hydrogeology		
	30	Indicate whether compensation has been paid and/or agreement(s) for compensation have been reached with any existing or other users.	N/A	No persons or properties identified.			Appendix C, EIA Report, Section 3.6.3.4 - Effects and Mitigation on Hydrology and Hydrogeology		
Inuit Water Rights	**31**	Provide a description of any potential effects of the project on the quality, quantity, or flow of waters flowing through Inuit Owned Land (IOL).	N/A	No waters flowing through IOL identified.					
	32	Provide a description of the measures incorporated into the project design to mitigate effects of the project on the quality, quantity, or flow of waters flowing through IOL.	N/A	No waters flowing through IOL identified.					
	33	Indicate wheter an agreement to pay compensation for any loss or damage has been reached with one or more Designated Inuit Organization (DIO); or if the parties have	N/A	Not within Project Scope.					
Consultation	**34**	Provide a summary of any consultation meetings including when the meetings were held, where and with whom.	Y				General Water Licence Application Section 20		
	35	Provide a summary of the results of consultation meetings including a list of concerns expressed and measures proposed to address concerns.	Y				General Water Licence Application Section 20		
Security	**36**	Provide a financial security assessment that includes the following:	N/A	This application is being made on behalf of the Government of Canada.					
	a	An estimate of the total financial security for final reclamation equal to the total outstanding reclamation liability for land and water combined sufficient to cover the highest liability over the life of the undertaking;	N/A	This application is being made on behalf of the Government of Canada.					
	b	The cost of having the necessary reclamation work done by a third-party contractor if the operator defaults;	N/A	This application is being made on behalf of the Government of Canada.					
	c	Contingency factors appropriate to the particular work to be undertaken.	N/A	This application is being made on behalf of the Government of Canada.					
Abandonment and Restoration	**37**	Provide plans for the abandonment and restoration of facilities.	N/A	Not within Project Scope.					
	38	Provide a list and description of any existing abandoned or restored site facilities.	N/A	Not within Project Scope.					
Financial Information	**39**	Provide a statement of financial responsibility.	N/A	This application is being made on behalf of the Government of Canada.					
	40	If the applicant is an entity for which audited financial statements are issued, a copy of the most recent audited financial statements must be attached to the statement of financial responsibility.	N/A	This application is being made on behalf of the Government of Canada.					
	41	Provide the name of the corporation, limited company or other business entity, with a list of the officers of the company and a copy of the Certificate of Incorporation or evidence of registration of the company name.	N/A	This application is being made on behalf of the Government of Canada.					

3.0 General Water Licence Application

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Studies and Designs	**42**	Provide a list of studies, reports and plans relevant to the application that have been undertaken to date.	Y				General Water Licence Application Section 23		
Proposed Time Schedule	**43**	Provide the proposed start and completion dates for each phase of development (construction, operation, closure) and any anticipated periods of seasonal shut down.	Y				General Water Licence Application Section 24		
Proposed Term of Licence	**44**	Provide a proposed term of licence including the expected date of licence issuance and the expected date of licence expiry.	Y				General Water Licence Application Section 25		
Annual Reporting	**45**	Provide detailed information regarding the content of annual reports and a proposed outline or template of the annual report. The annual report should include the following:	Y				General Water Licence Application Section 26		
	a	Water related monitoring results;	Y				General Water Licence Application Section 26		
	b	A description of how the conditions in any NIRB screening decision related to the NWB mandate have been implemented;	Y	NIRB requires an Annual Activity Report as specified in their Decision Report			Appendix B NIRB Screening Decision Report, page 15		
	c	Any actions taken in response to direction provided by the Inspector.	Y	Standard Annual Report to NWB			General Water Licence Application Section 26		
Renewals and Amendments	**46**	If the application is for a renewal or amendment of an existing licence provide the water licence number and the date of water licence expiry.	N/A	The application is not for a renewal or amendment of an existing license.			General Water Licence Application Section 27		
	47	If the application is for a renewal or amendment of an existing licence, provide a compliance assessment/status report. This report must document the status of compliance for each condition of the existing water licence taking into consideration inspector dialogues and inspector directions, responses to inspector dialogues and inspector directions, spills that may have occurred, and any reporting requirements. The report must indicate when facilities were inspected by regulatory agencies and list any spills that may have occured including a description, location shown on a map, and the action taken to address the affected area.	N/A	The application is not for a renewal or amendment of an existing license.			General Water Licence Application Section 27		

4.0 Project Description

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Description of Undertaking	**1**	Provide a complete description of the undertaking with detailed site plan(s) of all infrastructure. Include maps and/or aerial photos with scales that allow the determination of distances between the objects depicted. Differentiate any temporary components from permanent components. Consider the following in providing the description:	Y		Remedial Action Plan (RAP) Summary and Figures (Kuukyoak, 2026)		RAP Summary - Appendix C, Figures - Appendix A		
	a	Camp site;	Y		Remedial Action Plan (RAP) Summary and Figures (Kuukyoak, 2026)		RAP Summary - Appendix C. Figure 11 Appendix A		
	b	Raw water intake;	Y		General Water Licence Application Section 13		General Water Licence Application Section 13		
	c	Water storage and treatment facilities;	Y		General Water Licence Application Section 13		General Water Licence Application Section 13	Preliminary information provided with application. To be defined by Remediation Contractor in their Waste Management Plan following contract award	
	d	Wastewater collection, disposal, treatment, and discharge facilities;	Y		General Water Licence Application Section 15		General Water Licence Application Section 15	Preliminary information provided with application. To be defined by Remediation Contractor in their Waste Management Plan following contract award	
	e	Existing water bodies/courses and any changes to these water bodies/courses that may have or may occur as a result of water use or waste disposal facilities.	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report, Section 3.6.3.4 - Effects and Mitigation on Hydrology and Hydrogeology		
	f	Location of any receiving water bodies and drainage pathways;	Y				Appendix B - NTS Map Sheet		
	g	Solid waste disposal facilities;	Y		General Water Licence Application Section 15, RAP Summary Report		RAP Summary - Appendix C. Figures Appendix A		
	h	Hazardous waste disposal facilities (including waste oil);	Y		General Water Licence Application Section 15 and RAP Summary Repport		RAP Summary - Appendix C.	Preliminary information provided with application.Hazardous waste to be disposed off-site. Hazardous waste disposal facility (off-site) to be defined by Remediation Contractor in Waste Management Plan	
	i	Fuel and chemical storage facilites (including empty barrels);	Y		RAP Summary Report and Spill Prevention Plan (Kuukyoak, 2026)		Both in Appendix C	Preliminary information provided with application.Fuel and chemical storage facilities to be defined by Remediation Contractor in Spill Prevention Plan	
	j	Traditional water use and land use areas that may be impacted by the project;	N/A	No traditional water use in the project area					
	k	Transportation access routes and details of water course crossings;	Y		Figure 11		Figure 11 - Appendix A	Preliminary information provided with application. Access routes and details of water course crossings to be defined by Remediation Contractor in Access Development Plan	
	l	Locations of environmental monitoring sites;	N/A	Not applicable to the Project.					
	m	Abandoned and/or restored facilities;	Y		22 Abandoned Buildings, none to be restores: RAP Summary Report (Kuukyoak, 2026)		RAP Summary - Appendix C.		
	n	Existing on site infrastructure;	Y		22 Abandoned Buildings, none to be restores: RAP Summary Report (Kuukyoak, 2026)		RAP Summary - Appendix C Figures Appendix A.		
	o	Others: (describe)	N/A	Not applicable to the Project.					
Camp	**2**	Provide a description of the purpose of the camp. Indicate whether the camp will be used for any of the following purposes:	Y				General Water Licence Application		
	a	North warning site	N						
	b	Military training	N						
	c	Site remediation	Y		Temporary/Seasonal Camp for up to 40 persons		Genderal Water Licence Application, Camp location on Figure 11, Appendix A	Preliminary information provided with application. Size of workforce be defined by Remediation Contractor	
	d	Mineral exploration (see the NWB's SIG for Mineral Exploration / Remote Camp (MM1))	N/A	Not within Project scope.					
	e	Research	N/A	Not within Project scope.					
	f	Tourism	N/A	Not within Project scope.					
	g	Other: (describe)	N/A	Not within Project scope.					

3	Classify the camp as one of following:	Y				General Water Licence Application		
a	Mobile (self propelled)	N						
b	Temporary	Y				General Water Licence Application		
c	Seasonally occupied (provide months occupied)	Y				General Water Licence Application	Work season will be 4 to 6 months per year. To be defined by Remediation Contractor in their Schedule, included with their Technical Proposal.	
d	Permanent	N						
e	Other: (describe)	N						
4	Provide the design, maximum and average populations of the camp	Y		Average population 20, maximum 40		General Water Licence Application	To be defined by Remediation Contractor in their Schedule, included with their Technical Proposal.	
5	Provide a description of how the location of the camp was selected. Indicate whether assistance from the Regional Inuit Association Land Manager was obtained in selecting the site.	Y		Central to the work areas and airstrip at the site		Figure 11, Appendix A	Based on 5 years of experience at the site	

5.0 Baseline Information

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Environmental Setting	**1**	Provide a description of the site using maps and/or aerial photos with scales that allow the determination of distances between the objects depicted.	Y		Remedial Action Plan (RAP) Summary and Figures (Kuukyoak, 2026)		RAP Summary Appendix C, Figures Appendix B		
	2	Provide a description of the site history if it has been used in the past.	Y		RAP Summary,) Kuukyoak, 2026)		Appendix C - Environmental Studies and Reports		
	3	Indicate whether any baseline information has or will be collected as part of this project.	Y		Environmental Impact Assessment (DOJV, 2025)		Appendix C - Environmental Studies and Reports		
	a	Physical environment	Y		Environmental Impact Assessment (DOJV, 2025)		Appendix C - Environmental Studies and Reports		
	b	Biological environment	Y		Environmental Impact Assessment (DOJV, 2025)		Appendix C - Environmental Studies and Reports		
	c	Socio-economic environment	Y		Environmental Impact Assessment (DOJV, 2025)		Appendix C - Environmental Studies and Reports		
	d	Other	N/A	Not within Project scope.					
	4	Provide a description of the results of any consultation with Elders regarding the collection of baseline data.	Y		Community Engagement Event Report (NOJV, 2026)		Provided for NIRB Review		
	5	Provide a description of the historical uses of the waters affected by the project.	Y	No historic use of water affected by the project.					
	6	Provide a description of any traditional uses of water in the project area.	N/A	No traditional uses of water in project area.					
Fisheries	**7**	If applicable, provide baseline data and an evaluation of baseline data describing fish and fish habitat in the project area. The applicant is advised to consult with DFO regarding fish and fish habitat related issues and to visit DFO's website at http://www.dfo-mpo.gc.ca/habitat/habitat-eng.htm. Indicate whether the applicant has consulted with DFO and provide the results of any consultation.	Y		Environmental Impact Assessment (DOJV, 2025)		Section 3.5.3.2 - Fish and Fish Habitat		

6.0 Water Use: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Water Use	**1**	Provide a detailed description of all types of water uses including: (See the NWB definition of "use" in the NWB Guide 2: Terminology and Definitions). Categorize water consumption use(s) as either industrial use and/or domestic use.	Y				General Water Licence Application Sections 12 & 13		
	a	Obtain water for domestic purposes	Y				General Water Licence Application Section 13		
	b	Obtain water for industrial purposes	Y		For compaction of engineered fills		General Water Licence Application Section 13		
	c	To cross a water course	Y		Improvements potentially required of culvert stream crossings		Figure 11: Appendix A		
	d	To alter the flow of water, or store water	N/A	Not applicable to the Project.					
	e	Flood control	N/A	Not applicable to the Project.					
	f	To divert a watercourse	N/A	Not applicable to the Project.					
	g	To modify the bed or bank of a watercourse	N/A	Not applicable to the Project.					
	h	Others:	N/A	Not applicable to the Project.					
	2	If any of the sub categories c through g of item 1 of this section apply to the project, please refer to the NWB's SIG for Water Works (M1).	N/A	Not within Project scope.					
Water Use: Quality and Quantity *Water Intake* ***Identify uses as either domestic or industrial***	**3**	Provide the name of the primary water source as well as the name of any alternative water source(s).	Y		Meltwater ponds and un-named river to north of airstrip		Figure 1, Appendix A		
	4	Provide a description of the source of water and the location of the water source as shown on a map.	Y		Meltwater ponds and un-named river to north of airstrip		Figure 1, Appendix A		
	5	Indicate the type of water source(s) as lake, river, well, or other type.	Y		Meltwater ponds and un-named river to north of airstrip				
	6	Provide a description of the quality of the water from the source for each season (summer, fall, winter, spring).	Y		Water quality in un-named river was tested for metals conpared to Canadian Drinking Water Standards and found acceptable.				
	7	Provide the capacity of the water source.	Y		River to the north of the camp is abundantly capable of supplying the quantity of water for all purposes				
	8	Provide the acquisition rate in cubic metres per day and cubic metres per year.	Y		Between 50 and 300 cubic metres per day		General Water Licence Application Section 12		
	9	Provide a description of the water intake method including the intake facility, the operating capacity of the pump used, the details of any screening to exclude fish, and the distance the pump will be placed from the ordinary high water mark of the watercourse.	Y		Expected pumping into a water truck with a hose screened to prevent fish uptake			Information to be defined by Remediation Contractor in their Environmental Protection Plan. Screening of intake hoses to prevent uptake of fish will be required in the specifications.	
	10	Provide a description of the general condition of any existing water intake facility. Rate the condition of the facility as satisfactory or unsatisfactory and explain the rating.	N/A	No existing water intanke facility.					

	11	Indicate whether water is drawn from the source intermittently or continuously and if intermittently indicate during what months it is drawn and for what period it is drawn (days/weeks/months).	Y		Likely intermittantly			Information to be defined by Remediation Contractor in their Environmental Protection Plan	
	12	Indicate the amount of water to be returned to the source.	N/A	No water to be returned to the source.					
	13	Provide a description of the methods to ensure water returned to source is of an acceptable quality.	N/A	No water to be returned to the source.					
	14	Provide a description of any measures to reduce water consumption.	N/A						
Predicted Environmental Effects and Proposed mitigation measures	**15**	Provide a description of the effects of water usage on the source from which water will be drawn, including the potential for drawdown.	Y	The river to the north has significant base flow year round and water drawn for the camp will not have a significant impact on it. It was used during Station's operational phase.					
Fisheries	**16**	If applicable, provide a description of any potential impacts to fish and/or fish habitat. (Indirect effects may include project effects, water quality, or aquatic organisms. Direct effects may include degradation or alteration of fish habitat). The applicant is advised to consult with DFO regarding fish and fish habitat related issues and to visit DFO's website at http://www.dfo-mpo.gc.ca/habitat/habitat-eng.htm.	Y		Environmental Impact Assessment (DOJV, 2026)		Appendix C, EIA Report Section 3.5.3.2 - Fish and Fish Habitat		

7.0 Waste Disposal: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Waste Disposal	**1**	Provide a detailed description of all types of waste and all forms of waste disposal including: (see the NWB definition of Waste in the NWB *Guide 2: Terminology and Definitions*)	Y				General Water Licence Application Section 14 and 15 Appendix C - Environmental Studies and Reports		
	a	Sewage (Blackwater)	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)		General Water Licence Application Section 14 and 15 Appendix C - Environmental Reports and Management Plans		
	b	Grey water	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)		General Water Licence Application Section 14 and 15 Appendix C - Environmental Reports and Management Plans		
	c	Solid waste	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)		General Water Licence Application Section 14 and 15 Appendix C - Environmental Reports and Management Plans		
	d	Bulky items/ scap metal	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)		General Water Licence Application Section 14 and 15 Appendix C - Environmental Reports and Management Plans		
	e	Hazardous waste including waste oil	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)		General Water Licence Application Section 14 and 15 Appendix C - Environmental Reports and Management Plans		
	f	Empty barrels of fuel	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)		General Water Licence Application Section 14 and 15 Appendix C - Environmental Reports and Management Plans		
	g	Other:(describe)	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)		General Water Licence Application Section 14 and 15 Appendix C - Environmental Reports and Management Plans		
Waste Disposal: Quality and Quantity	**2**	For each type of waste, provide the composition and quantity generated. Also provide the location, rate, timing, frequency and duration of the deposit.	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)		General Water Licence Application Section 14 and 15 Appendix C - Environmental Reports and Management Plans	Information for legacy waste included with RAP Summary. Information on location, rate, timing, frequency and duration of deposit of contractor generated waste to be defined by chosen Remediation Contractor in their Waste Management Plan	
	3	For each type of waste, provide the proposed methods and processes for collecting, storing, treating and discharging the waste. Indicate the capacity of these facilities.	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)		General Water Licence Application Section 14 and 15 Appendix C - Environmental Reports and Management Plans	Information for legacy waste included with RAP Summary. Information on location, rate, timing, frequency and duration of deposit of contractor generated waste to be defined by chosen Remediation Contractor in their Waste Management Plan	
	4	If an incineration system is proposed, provide a description of the system and the types of wastes that will be incinerated.	Y		Incineration of domestic waste is an option in Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)			Preliminary information included with Waste Management Plan (Kuukyoak, 2026). Description of incineration system and types of waste to be incinerated to be defined by Remediation Contractor in their Waste Management Plan.	
	5	Provide a description of how non-combustible wastes will be disposed. If disposal at a municipality in Nunavut is proposed, indicate whether authorization has been granted.	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)		Appendix C - Environmental Reports and Management Plans		
	6	If sumps are proposed, provide a description of their location relative to water bodies and camp facilities, dimensions, volume, and freeboard.	Y					Sumps are expected for erosion and sediment control, but not for containment of camp greywater. Information regarding the location, dimension, volume and freeboard of sumps to be included with the Remediation Contractor's Erosion and Sediment Control Plan.	
	7	Provide a description of any measures to minimize the production of wastes.	N/A	Waste generated from camp operations will be disposed of off-site, including incinerated waste. Volume of waste designated for on-site disposal should not change.					

Proposed Waste Facilities	**8**	For each proposed waste facility provide design plans. The designs shall consider the following:	Y						
	a	Site photos, site map, or air photos of the site.	Y				Figures - Appendix A		
	b	Description of the existing condition of the site (see Section 5).	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)				
	c	A description of the types of waste entering the facility.	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)				
	d	Distance of the facility from watercourses and fish bearing waters.	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)				
	e	Existing and proposed drainage modifications.	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)				
	f	Details of retaining structures.	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)			Description of retaining structures to be defined by Remediation Contractor in their Waste Management Plan.	
	g	Level of treatment (primary, secondary or tertiary).	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)			Preliminary information included with Waste Management Plan (Kuukyoak, 2026). Description of level of treatment to be defined by Remediation Contractor in their Waste Management Plan.	
	h	By products of treatment which may require further treatment, characterization, handling and disposal.	Y		Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)			Preliminary information included with Waste Management Plan (Kuukyoak, 2026). Description of treatment by-products to be defined by Remediation Contractor in their Waste Management Plan.	
	i	Capacity and retention time of the facility;	Y					To be defined by Remediation Contractor in their Waste Management Plan.	
	j	Identification of final discharge point (last point of control).	Y					To be defined by Remediation Contractor in their Waste Management Plan.	
	k	Method and type of discharge (seasonal, annual, continuous).	Y					To be defined by Remediation Contractor in their Waste Management Plan.	
	l	Estimated rates for discharge.	Y					To be defined by Remediation Contractor in their Waste Management Plan.	
	m	Restrictions on discharge.	Y					To be defined by Remediation Contractor in their Waste Management Plan.	

n	Discharge effluent criteria proposed;	Y	Blackwater/Biosolids to be collected seperately from Greywater and disposed off-site or incinerated. Greywater from camp facilities to undergo primary treatment to remove solids, followed by a land application method at least 100m from waterbody.	Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)		Waste Management Plan: Appendix C		
o	Receiving water quality objectives.	N/A		Waste water will not reach receiving waters				
p	Details regarding direction and path of wastewater flow from the area or infrastructure.	N/A		Waste water will not reach receiving waters			To be defined by Remediation Contractor in their Waste Management Plan.	
q	Design drawings in plan and profile, drawn to scale, including all relevant dimensions.	Y		Figures included in Appendix A		Appendix A	Conceptual design drawings included in Appendix A Final design drawings to be included with Tender Package.	
r	Details of design parameters including seismic design if applicable.	NA						
s	Start and completion dates for construction.	Y		Section 24 of Application Form and Conceptual Schedule included in RAP Summary Report		Section 24 of Application Form RAP Summary Report - Appendix C	Actual start and completion dates for construction to be defined by Remediation Contractor in their Basline Construction Schedule	
t	Construction schedule and sequence taking into account any timing restrictions.	Y		Conceptual Schedule included in RAP Summary Report), (Kuukyoak, 2026)		RAP Summary Report - Appendix C	Preliminary schedule included with RAP. Actual start and completion dates for construction to be defined by Remediation Contractor in their Basline Construction Schedule	
u	Construction methods.	Y		RAP Summary Report: Isachsen High Arctic Weather Station (HAWS), (Kuukyoak, 2026)		RAP Summary Report - Appendix C	Preliminary information included with RAP. Actual construction methods to be confirmed by Remediation Contractor as part of their Technical Submission.	
v	Equipment to be used.	Y		Assumed equipment list provided in LUP Application. Actual equipmment to be confirmed by contractor.			Actual equipment to be confirmed by Remediation Contractor as part of their Technical Submission.	
w	A description of the source, type, and composition of the material to be used in construction.	Y		Provided in Quarry Application		Provided in Quarry Application		
x	Construction monitoring plans.	Y					To be defined by Remediation Contractor in their Quality Management Plan	
y	Construction quality assurance and quality control measures.	Y					To be defined by Remediation Contractor in their Quality Management Plan	
z	Operation and maintenance plans	Y					To be defined by Remediation Contractor in their Technical Proposal	
aa	Contingency plans	Y					To be defined by Remediation Contractor in their Technical Proposal	

	bb	Abandonment and restoration plans (see items 37-38 of Section 3).	N/A	Abandonment/restoration of facilities not in scope					
	9	Final plans and drawings for construction must be stamped by a Professional Engineer licensed to practice in Nunavut. (See Section 7 of the NWB's *Guide 4: Completing and Submitting a Water Licence Application* for more information regarding design drawings).	N/A	Will be included in project Tender Package				Plans and drawings for construction are currently at a conceptual stage, included in Appendix A. Finals plans and drawings to be included with Tender Package.	
Predicted Environmental Effects and Proposed mitigation measures	**10**	Provide detailed treatment plans for discharges from any waste treatment facility. Waste treatment plans should include estimates of treatment efficiency for each parameter of concern.	Y					To be defined by Remediation Contractor in their Waste Management Plan.	
	11	Clearly outline proposed discharge criteria, how the criteria were developed, standards to be applied, and how these criteria will be used to prevent ecological effects in the receiving environment.	N/A	Greywater from camp facilities to undergo primary treatment to remove solids, followed by a land application method at least 100m from waterbody.					
Operations and Maintenance	**12**	Indicate whether the water supply and waste treatment and disposal methods have been used and proven in cold climates.	Y		Suitability for cold climates is a requirement for the Contractor to meet.			To be defined by Remediation Contractor in their Waste Management Plan.	
	13	Provide a description of any potential operational and maintenance problems that may occur.	Y		Emergency Response Plan (Kuukyoak, 2026) and Spill Prevention Plan (Kuukyoak, 2026)		Appendix C Emergency Response Plan.		
Hazardous Materials	**14**	Provide a description of the type and quantities of drilling additives, petroleum products, chemicals and/or hazardous materials on site (MSDS sheets are **not** required to be submitted as part of the water licence application).	Y		Spill Prevention Plan (Kuukyoak, 2026)		Appendix C Spill Prevention Plan		
	15	Provide details regarding the handling and storage of hazardous or potentially hazardous materials.	Y		Hazardous materials will be removed from the site for disposal. Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut, (Kuukyoak, 2026)		Appendix C Waste Management Plan	Hazardous materials will be removed from the site for disposal.	
Emergency Response and Spill Contingency	**16**	Provide an Emergency Response and Spill Contingency Plan (ERSCP) that includes mechanisms and processes for addressing potential or actual failure of structures, response equipment and material storage, and programs for providing appropriate training to workers. The plan shall address all licensed facilities.	Y		Emergency Response Plan (Kuukyoak, 2026) and Spill Prevention Plan (Kuukyoak, 2026)		Appendix C Emergency Response Plan.		

8.0 Monitoring

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	Insert Section of document where information is provided	If information is not available at the time of application, indicate when the information will be made available	NWB Concordance Assessment
Monitoring	**1**	Provide a Monitoring Plan including a description of the methods, procedures, standards, and schedules proposed. Monitoring may be required for water use; effluent; surface and/or groundwater water quality, quantity, or flow; ground temperature; ground settlement; etc.	Y					Information to be defined in Remediation Contractors site-specific Quality Management Plan following contract award	
	2	Indicate who is responsible for sampling including that person's position, contact information and level of training.	Y					Information to be defined in Remediation Contractors site-specific Quality Management Plan following contract award	
	3	Indicate the name and contact information of the certified laboratory performing the analysis of samples.	Y					Information to be defined in Remediation Contractors site-specific Quality Management Plan following contract award	
	4	Provide an Inspection Plan including a description of the methods, procedures, standards, and schedules proposed. Inspections may be required for engineered facilities related to the management of water and waste as well as spills.	Y					Information to be defined in Remediation Contractors site-specific Quality Management Plan following contract award	
	5	Provide a Quality Assurance/ Quality Control (QA/QC) Plan that addresses both field sampling and laboratory analyses.	Y					Information to be defined in Remediation Contractors site-specific Quality Management Plan following contract award	
	6	Provide a summary table that details the monitoring plan. The table should include stations numbers, location, parameter(s) and frequency. Provide a map detailing the location of monitoring sites.	Y					Information to be defined in Remediation Contractors site-specific Quality Management Plan following contract award	

3.0 Closing Remarks

This application was completed by Kuukyoak on behalf of Environment and Climate Change Canada, following Nunavut Water Board Guidelines 3,4 and 5 and accurately conveys the currently planned remediation plan for the Isachsen High Arctic Weather Station.

We trust that this information is satisfactory for your requirements.

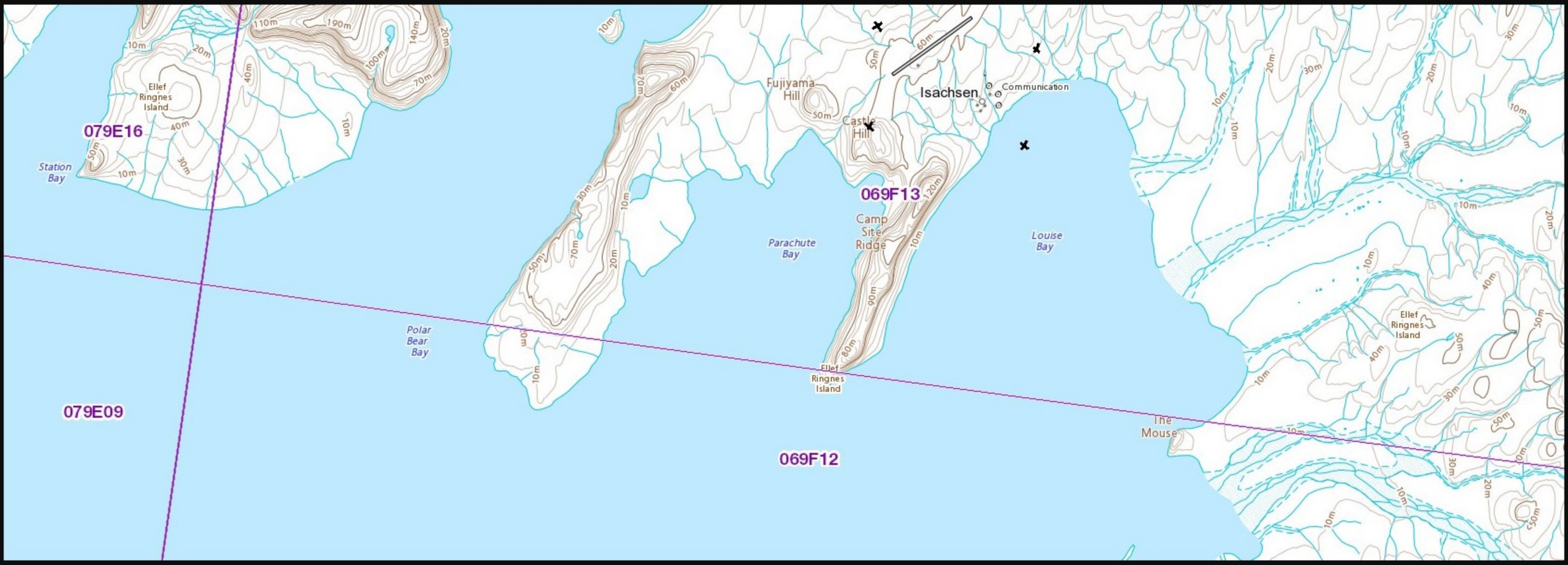
Sincerely,
Kuukyoak Ltd.

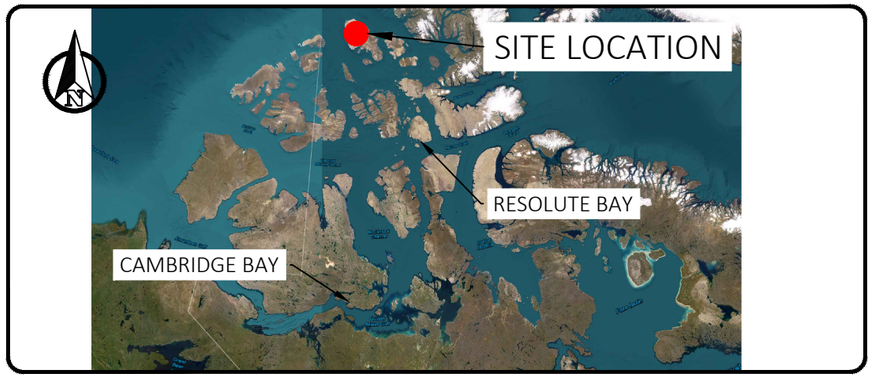


Michael Billowits, M.Sc.(Eng.), P.Eng.
Senior Project Director

Appendix A

NTS Map Sheet and Supporting Figures


079E16
079E09
069F13
069F12
Ellef Ringnes Island
Station Bay
Fujiyama Hill
Castle Hill
Isachsen
Communication
Camp Site Ridge
Parachute Bay
Louise Bay
Polar Bear Bay
Ellef Ringnes Island
The Mouse
Ellef Ringnes Island







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

KUUKYOAK

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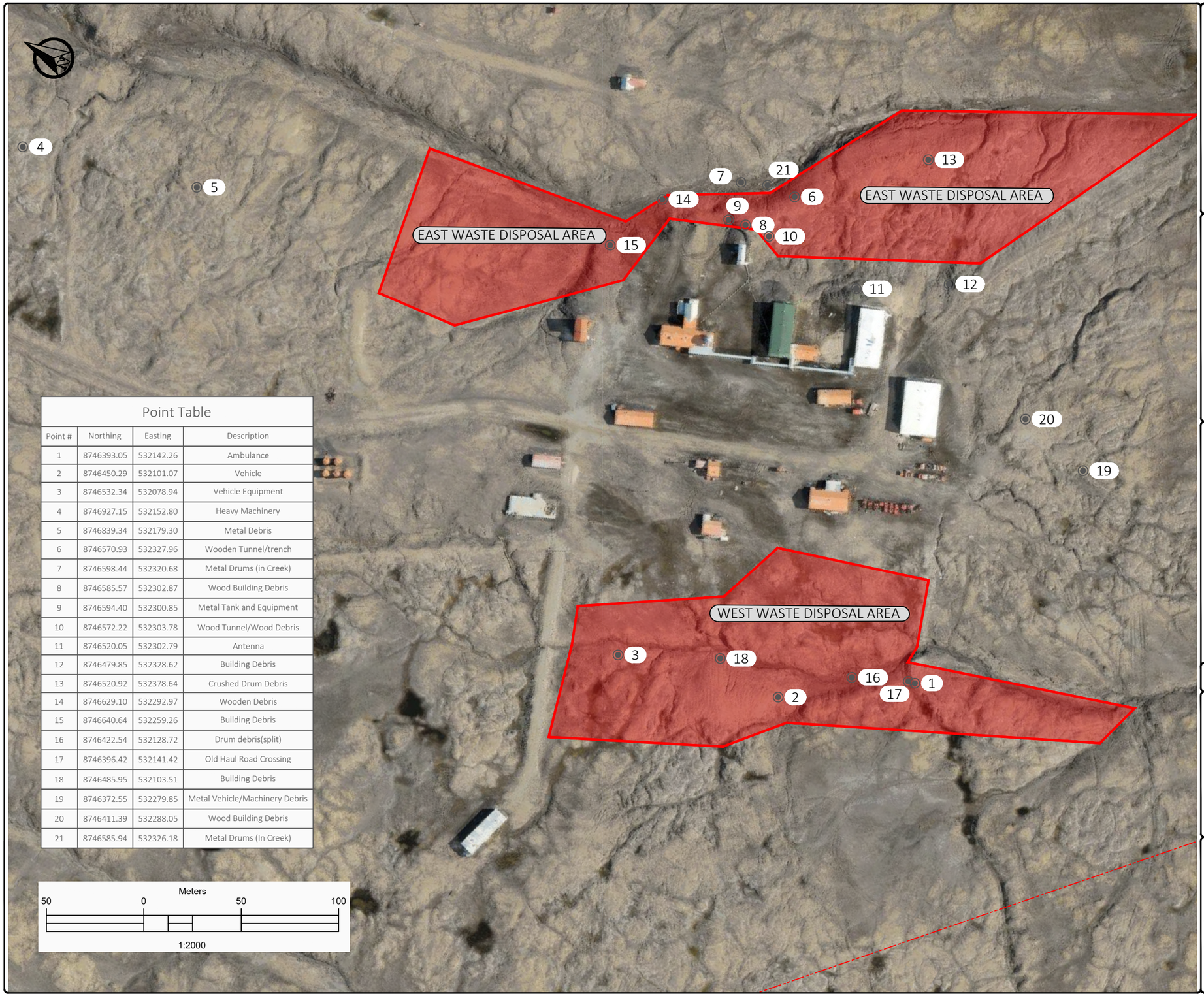
ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN - FIGURE 1

SITE LOCATION

KUUKYOAK 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

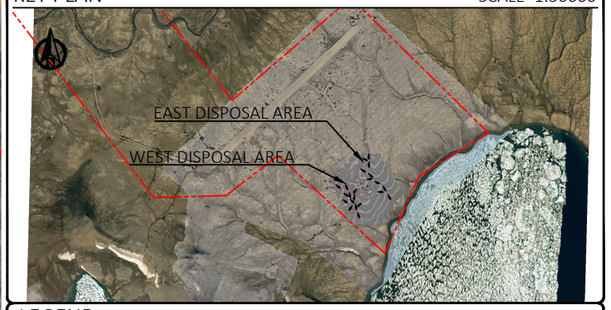


Point Table

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)

KEY PLAN

SCALE=1:50000



LEGEND

23	BUILDING LOCATION AND ID
	WASTE DISPOSAL AREAS
	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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KUUKYOAK

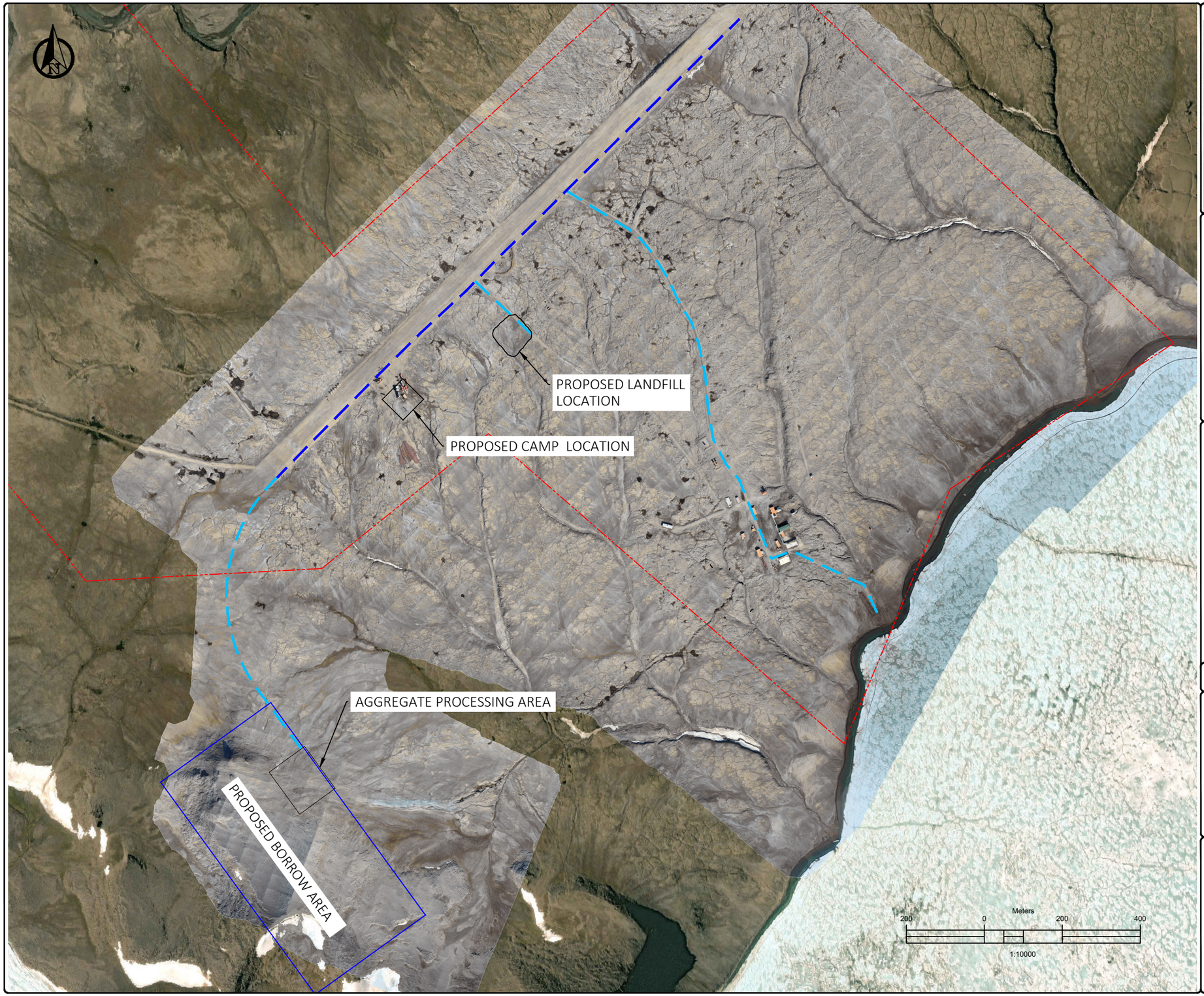
ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

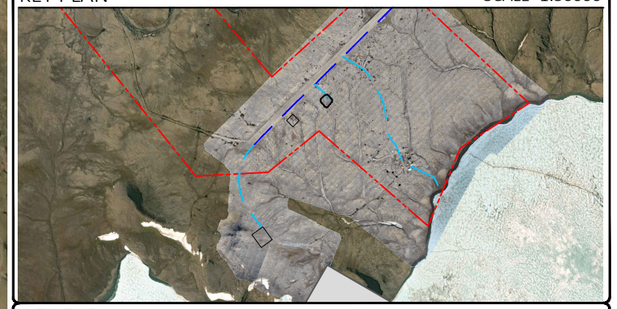
REMEDIAL ACTION PLAN- FIGURE 8

EXISTING CONDITIONS- SCATTERED WASTE DEBRIS LOCATIONS

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



KEY PLAN SCALE=1:50000



LEGEND

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

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ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN- FIGURE 11

PROPOSED TEMPORARY ROAD NETWORK

KUUKYOAK 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

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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

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48.00
47.00
50.00
49.00

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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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

Appendix B

NPC and NIRB Records of Decision

June 3, 2026
NPC File No. 151218

Calvin Ehaloak
A/Manager, Public Registry
Nunavut Impact Review Board (NIRB)
Cambridge Bay, Nunavut
By email: cehaloak@nirb.ca; info@nirb.ca; kgillard@nirb.ca

Richard Dwyer
Manager, Licensing
Nunavut Water Board (NWB)
Gjoa Haven, Nunavut
By email: richard.dwyer@nwb-oen.ca; licensing@nwb-oen.ca

Tracey McCaie
Manager, Land Administration
Crown Indigenous Relations and Northern Affairs Canada (CIRNAC)
Iqaluit, Nunavut
By email: tracey.mccaie@canada.ca; aadnc.landsmining.aandc@canada.ca; isa.qamaniq-mason@canada.ca; spencer.dewar@canada.ca; jeff.hart@canada.ca; richard.bingley2@rcaanc-cirnac.gc.ca

Jared Ottenhof
Director, Qikiqtani Nunalirijikkut (Lands and Resource Management)
Qikiqtani Inuit Association (QIA)
Iqaluit, Nunavut
By email: jottenhof@qia.ca; jnakoolak@qia.ca; JSimic@qia.ca

Owen Wade
Environment and Climate Change Canada (ECCC)
Gatineau, Quebec
By email: owen.wade@ec.gc.ca

Dear Calvin Ehaloak, Richard Dwyer, Tracey McCaie, Jared Ottenhof, and Owen Wade:

RE: **NPC File # 151218 [Remediation of the Former Isachsen High Arctic Weather Station (HAWS)]**

The following works and activities have been proposed in the above-noted project proposal:

1. **Primary Land Use:** Remediation
2. **Project summary description**: Contituation of the decommissioning and environmental remediation of the former Isachsen High Arctic Weather Station (HAWS), located on Ellef Ringnes Island, Nunavut. The site, which has been inactive since 1978, contains approximately 22 abandoned structures, fuel storage systems, waste disposal areas, and scattered debris across a 4.5 km². The purpose of the project is to address historical contamination and site hazards through the removal, treatment, and disposal of hazardous and non-hazardous materials.
3. **Summary of modifications:** The proponent is planning a full-scale remediation of the site. The project also includes the development of supporting infrastructure, such as a borrow pit for aggregate production, temporary work camps, and transportation logistics. Existing waste disposal areas will be capped and stabilized to prevent environmental impacts.

4. **Associated NPC File Nos**.: 148587, 148718, 149785, 150017, and 150699; **Associated NIRB File No**.: 25UN029
5. **Location:** Qikiqtani Region; [Isachsen High Arctic Weather Station]

A complete description of the project proposal reviewed by the NPC can be accessed online using the link below.

The Nunavut Planning Commission (NPC) has completed its review of the above noted project proposal. The NPC previously reviewed works and activities associated with the proposal, including fuel incineration (conformity determination issued April 11, 2025). This conformity determination still applies. In addition, associated activities were previously screened by the Nunavut Impact Review Board (NIRB FILE NO.: 25UN029).

The NPC has determined that the above-noted project proposal is a significant modification to the project because of the inclusion full scale decommission and remediation activities as well as the addition of a quarry development component. It conforms to the North Baffin Regional Land Use Plan (NBRLUP). The proponent has undertaken to comply with the applicable conformity requirements of Appendix C, H, and I of the NBRLUP.

The above-noted project proposal requires screening by the NIRB under section 12.4.3 of the *Nunavut Agreement* as amended because it is for a component or activity that was not part of the original or previously amended proposal, and its inclusion is a significant modification of the project.

By way of this letter, the NPC is forwarding the project proposal with this determination to the NIRB for screening. Project materials, including the applicable conformity requirements, are available at the following address: https://lupit.nunavut.ca/portal/registry/registry.aspx?appid=151218

The regulatory authorities to which this letter is addressed are responsible under the *Nunavut Planning and Project Assessment Act* (*NuPPAA*) to implement any of the applicable requirements by incorporating the requirements directly, or otherwise ensuring that they must be met, in the terms and conditions of any authorizations issued.

This conformity determination applies only to the above noted project proposal as submitted. Proponents may not carry out projects and regulatory authorities may not issue licenses, permits and other authorizations in respect of projects if a review by the NPC is required. Regulatory authorities may consult with the NPC to obtain recommendations on their duties to implement the existing land use plans prior to issuing licenses, permits and other authorizations under subsection 69(6) of the *NuPPAA*.

My office would be pleased to discuss how best to implement the applicable requirements and to review any draft authorizations that regulatory authorities wish to provide for that purpose. If you have any questions, please do not hesitate to contact me at (867) 979-3444.

Sincerely,

Goump Djalogue, MCIP, RPP
Manager of Planning and Implementation,

Jurisdictional Note:

This conformity determination applies only to the components of the proposed project located within the Nunavut Settlement Area and under the Nunavut Planning Commission's statutory jurisdiction as defined in the Nunavut Agreement and the Nunavut Planning and Project Assessment Act (NuPPAA). Activities outside the NPC's jurisdiction remain subject to the review and regulatory processes of the relevant authorities. Proponents are responsible for identifying, contacting, and obtaining all required approvals from the appropriate regulators in every applicable jurisdiction to ensure compliance with all legislation, policies, and licensing requirements.

NIRB File No.: 25UN029
NIRB Public Registry link: www.nirb/ca/project/126476
NPC File No.: 151218
Related to NPC File No.: 150699

August 28, 2026

To: The Honourable Rebecca Chartrand
Minister of Northern and Arctic Affairs
House of Commons
Ottawa, ON K1A 0A6

Sent via email: Rebecca.chartrand@parl.gc.ca

Re: Screening Decision for Environment and Climate Change Canada's "Remediation of the Former Isachsen High Arctic Weather Station (HAWS)" Project Proposal, Qikiqtani (North Baffin) Region

---

Dear Honourable Minister:

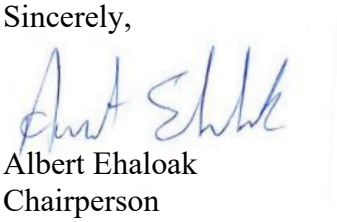
On June 3, 2026, the Nunavut Impact Review Board (NIRB or Board) received a referral pursuant to the Nunavut Agreement and *NuPPAA* to conduct a screening[1] of Environment and Climate Change Canada's (ECCC) "Remediation of the Former Isachsen High Arctic Weather Station (HAWS)" project proposal and after completing the required process, the NIRB determined[2] that **a review of the project is not required** and recommended specific terms and conditions[3].

The attached Screening Decision Report provides the regulatory framework, scope of proposal and Board's assessment process, public engagement, factors relevant for the determining significance of impacts, and recommended project-specific terms and conditions. Additional information on the project can be viewed on the NIRB's public registry at the link at the top of this letter.

The NIRB look forward to receiving a response from the Minister, and any questions on the Board's assessment process or the Screening Decision Report can be directed to the NIRB's Director, Operations, Tara Arko at 1-866-233-3033 EXT. 500 or tarko@nirb.ca.

1 Pursuant to Article 12, Sections 12.4.1 and 12.4.4 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada* (*Nunavut Agreement*) and section 87 of the *Nunavut Planning and Project Assessment Act* (*NuPPAA*)
2 Pursuant to s. 92(1)(a) of the *NuPPAA*
3 Pursuant to s. 92(2)(a) of the *NuPPAA*

Sincerely,



Albert Ehaloak
Chairperson
Nunavut Impact Review Board

Enclosure (1): Screening Decision Report, NIRB File No.: 25UN029 (August 28, 2026)

cc: Regulators
Lootie Toomasie, Chairperson of Nunavut Water Board
Olayuk Akeesuk, President of Qikiqtani Inuit Association
Richard Dwyer, Nunavut Water Board
Jared Ottenhof, Qikiqtani Inuit Association
Chris Spencer, Qikiqtani Inuit Association
Conor Goddard, Qikiqtani Inuit Association
Assol Kubesinova, Qikiqtani Inuit Association
Tracey McCaie, Crown – Indigenous Relations and Northern Affairs Canada
Marcus Bermann, Crown – Indigenous Relations and Northern Affairs Canada
Owen Wade, Proponent
Distribution List

SCREENING DECISION REPORT
NIRB FILE No.: 25UN029

NPC File No.: 151218
Related to NPC File No.: 150699

August 28, 2026

Following the Nunavut Impact Review Board's (NIRB or Board) assessment of all materials provided, the NIRB is recommending that a review of Environment and Climate Change Canada's (ECCC) "Remediation of the Former Isachsen High Arctic Weather Station (HAWS)" is not required pursuant to Article 12, Section 12.4.4(a) of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada* (*Nunavut Agreement*) and s. 92(1)(a) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*).

Subject to the Proponent's compliance with the terms and conditions as set out in below, issued in accordance with s. 92(2)(a) of *NuPPAA*, the NIRB is of the view that the project proposal is not likely to cause significant public concerns, and it is unlikely to result in significant adverse environmental and social impacts. The NIRB therefore recommends that the responsible Minister accepts this Screening Decision Report.

OUTLINE OF SCREENING DECISION REPORT

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ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF *NUPPAA* 6

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REGULATORY FRAMEWORK

The primary objectives of the NIRB are set out in Article 12, Section 12.2.5 of the *Nunavut Agreement* and are confirmed by s. 23 of the *NuPPAA*. The purpose of screening is provided for under Article 12, Section 12.4.1 of the *Nunavut Agreement* and s. 88 of the *NuPPAA*.

As set out under Article 12, Section 12.4.4 of the *Nunavut Agreement* and s. 92(1) of the *NuPPAA*, upon conclusion of the screening process, the Board must provide its written report the Minister indicating one of three options:

(a) a review of the project is not required;

(b) a review of the project is required; or

(c) the project should be modified or abandoned.

PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

On June 3, 2026, the NIRB received a referral to screen Environment and Climate Change Canada's (ECCC) "Remediation of the Former Isachsen High Arctic Weather Station (HAWS)" project proposal from the Nunavut Planning Commission (Commission), with an accompanying positive conformity determination with the North Baffin Regional Land Use Plan. All documents received and pertaining to this project proposal can be accessed from the NIRB's Public Registry by using any of the following search criteria or www.nirb/ca/project/126476.

- Project Name: Remediation of the Former Isachsen High Arctic Weather Station (HAWS)
- NIRB File No.: 25UN029
- NIRB Application No.: 126476

Table 1: NIRB's Assessment Process

Date	Stage
June 3, 2026	Receipt of project proposal and positive conformity determination (North Baffin Regional Land Use Plan) from the Commission
Jue 8, 2026	Pursuant to s. 144(1) of the *NuPPAA* the NIRB requested the Proponent complete an online application to address information required for Screening
July 8, 2026	Receipt of online application from Proponent
July 14 & 15, 2026	Request(s) to Proponent for additional information in order to carry out screening pursuant to s. s. 144(1) of the *NuPPAA*
July 16, 2026	Proponent responded to information request(s) and provided additional information
July 16, 2026	Scoping pursuant to s. 86(1) of the *NuPPAA*
July 20, 2026	Public engagement and comment request (which included draft terms and conditions) was issued in English with translations provided once available
August 10, 2026	Receipt of public comments
August 11, 2026	Proponent provided with an opportunity to address comments/concerns raised by public

Date	Stage
August 24, 2026	Proponent responded to comments/concerns raised by public
August 28, 2026	Issuance of Screening Decision Report

1. Project Scope

Location	Qikiqtani (North Baffin) Region, approximately 500 kilometres northwest of the communities of Resolute Bay and Grise Fiord
Objective	The Proponent intends to conduct a full-scale remediation of the former Isachsen High Arctic Weather Station (HAWS).
Timeline	November 2026 to October 2031

As required under s. 86(1) of the *NuPPAA*, the Board accepted the scope of the project as set out by ECCC in the proposal. The scope of the project proposal includes the following undertakings, works, or activities:

- Mobilization of heavy equipment, camp, and supplies to site by sealift to Resolute Bay, followed by aircraft mobilization from Resolute Bay to Isachsen HAWS.
- Use of heavy equipment for remediation, demolition activities, aggregate production, waste handling, hauling, grading, and site-restoration activities;
- Abatement and demolition of twenty-two (22) buildings and structures containing Asbestos, Mercury and Ozone-Depleting Substances. Non-hazardous waste would be disposed of in the new on-site landfill; hazardous waste would be transported to an approved off-site licensed facility.
- Decommissioning of fifty (50) Above-Ground Storage Tanks by a qualified petroleum technician, followed by processing and disposal in the new on-site landfill.
- Decommissioning of fourteen (14) pieces of non-operational heavy equipment and six (6) pieces of operational equipment prior to disposal. Approximately 760m^3 of non-hazardous waste associated with the heavy equipment would be disposed of in new on-site landfill.
- Cleaning, crushing, and consolidation of approximately 3,800 waste-fuel drums, generating approximately 950 m^3 of crushed material for disposal in the new on-site landfill; Collection and consolidation of approximately 100m^3 of miscellaneous non-hazardous waste debris, including metal and wood, for disposal in the new on-site landfill.
- Removal of approximately 13,000 L of remaining waste fuel and oily-water mixture for transportation to an approved off-site disposal facility;
- Construction and operation of a borrow pit to produce up to an estimated 100,000m^3 of aggregate for airstrip upgrades and road upgrades, construction of a new engineered on-site landfill, capping of the existing Waste Disposal Areas (WDAs), construction of a camp pad and temporary waste storage area and general site grading.
- Placement of approximately 36,000 m^2 of coarse aggregate cover over the existing Waste Disposal Areas, including contouring to promote drainage and reduce erosion and installation of natural or geosynthetic liner material where required; Construction and use of a new engineered landfill consisting of an approximately 50 m x 50 m lined cell with an aggregate cover, designed to accommodate approximately 4,500 m^3 to 6,200 m^3 of consolidated non-hazardous inert waste; Establishment and operation of temporary camp

facilities and associated water, sewage, greywater, power-generation, and waste-management activities;
- Use and storage of up to 10,000L of aviation fuel, 12,000L of gasoline fuel, 5,000L of propane and 630,000L of diesel to support aircraft, camp and equipment operations;
- Demobilization of temporary equipment and infrastructure, final grading and stabilization of disturbed areas, and post-remediation monitoring;
- The camp pad will be decommissioned and removed, the roads decommissioned by grading to match the adjacent ground surface, and the airstrip will be left in place; and
- The new on-site landfill will be capped, and it will be subject to a long-term monitoring program.

2. Inclusion or Exclusion to Scoping List

The NIRB has identified that waste-fuel incineration activities associated with the previously screened "Isachsen High Arctic Weather Station Waste Fuel Reduction Program" project proposal (25UN029), for which a Screening Decision Report was issued on June 19, 2025, were previously assessed. These incineration activities will not be reconsidered in detail as part of the current assessment, except where relevant to cumulative effects, changed circumstances, or ongoing project activities. The current screening will otherwise proceed based on the amended project scope identified above.

3. Public Comments and Concerns

As outlined in Table 1 above, notices regarding the NIRB's screening of this project proposal were distributed to community organizations as well as to relevant federal and territorial government agencies, Inuit organizations and other parties with a request for interested parties to provide the Board with any comments or concerns regarding:

- Whether the project proposal is likely to arouse significant public concern; and if so, why;
- Whether the project proposal is likely to cause significant adverse eco-systemic or socio-economic effects; and if so, why;
- Whether the project proposal is likely to cause significant adverse impacts on wildlife habitat or Inuit harvest activities; and if so, why;
- Whether the project proposal is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (and providing any recommended mitigation measures); and
- Any matter of importance to the Party related to the project proposal.

On or before August 10, 2026, the NIRB received comments from the following interested parties:

Table 2: Comments Received

Commenting Party	NIRB Doc ID No.
Government of Nunavut (GN)	362696
Crown – Indigenous Relations and Northern Affairs Canada (CIRNAC)	362577
Transport Canada	362426

a. Summary of Comments and Concerns Received

The following provides a summary of the comments and concerns received by the NIRB in relation to the "Remediation of the Former Isachsen High Arctic Weather Station" project proposal:

Government of Nunavut (GN)

- Requests that the Proponent:
  - Clarify how contaminations listed on the Federal Contaminated Sites Inventory are going to be managed.
  - Clarify if the soil will be removed during this phase or another phase in the future.
  - State the methods of disposal and containment that will be employed by ECCC regarding contaminated soils.

Crown – Indigenous Relations and Northern Affairs Canada (CIRNAC)

- Has no comments at this time.

Transport Canada (TC)

- As the Proponent has identified in their application, the transport of hazardous wastes from the site for off-site disposal must be done in accordance with the Transportation of Dangerous Goods Regulations. This includes that the shipper preparing the dangerous goods shipment for air transportation must have International Civil Aviation Organization (ICAO) training for dangerous goods. The shipper must meet the requirements set out in Part 12 of the Transportation of Dangerous Goods Regulations, which includes the ICAO training requirements.

4. *b.* Comments and Concerns with respect to Inuit Qaujimaningit, Indigenous and Community Knowledge

No concerns or comments were received with respect to Inuit Qaujimaningit or Indigenous and Community knowledge in relation to the proposed project. However, Inuit Qaujimaningit and Indigenous and community knowledge is incorporated into the terms and conditions recommended below based on information collected from prior and similar projects, data collected and mapped by the Commission, and other available sources.

5. Proponent's Response to Public Comments and Concerns

Due to the comments, and questions received from parties, the NIRB provided an opportunity for the Proponent to respond. The following is a summary of the Proponent's response to concerns:

In response to the concerns raised by the Government of Nunavut, the Proponent provided information to clarify the use of the Federal Contaminated Sites Inventory (FCSI) database and the Federal Contaminated Sites Action Plan (FCSAP) which guides all work to address contamination on Federal Sites.

The Decision-Making Framework is based on A Federal Approach to Contaminated Sites which describes a 10-step process used to characterize, classify and prioritize contaminated sites and to ensure remediation occurs in a cost-effective manner. Each step was designed to stand alone and to outline key components for investigating, managing and remediating contaminated sites.

The 10 steps are:

1. Identify Suspect Sites
2. Historical Review
3. Phase 1 and Phase 2 Environmental Site Assessment
4. Classify Contaminated Site Using the Canadian Council of Ministers of the Environment (CCME) National Classification System for Contaminated Sites (NCSCS)
5. Phase 3 Environmental Site Assessment
6. Reclassify the Site Using the CCME NCSCS
7. Develop a Remediation/Risk Management Strategy - Human Health and Ecological Risk Assessment (HHERA), and Develop Remedial Action Plan (RAP)
8. Implement Remediation/Risk Management (R/RM) Strategy
9. Confirmatory Sampling and Final Reporting (if required)
10. Long Term Monitoring (if required)

According to FCSI, the Isachsen HAWS site has completed step 7 and states that "a Remedial Action Plan was completed, and Remediation/Risk Management is underway". A risk assessment approach was adopted for the site. The findings of the HHERA indicated that there were no unacceptable risks to Human Health or Ecological receptors from the identified contamination and that soil remediation was not necessary. As such, no soil is planned for removal, and no disposal or containment of contaminated soil is required.

The Proponent is currently at Step 8 of the FCSAP DMF which involves implementation the R/RM strategy selected in Step 7, including completing the actions required to undertake the decommissioning activities described in the Remedial Action Plan.

ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF *NUPPAA*

In determining whether a review of the project is required, the Board considered whether the project proposal had potential to result in significant ecosystemic or socio-economic impacts. Table 3. The Board took particular care to consider Inuit Qaujimaningit, Indigenous and Community Knowledge in carrying out its assessment and determination of the significance of impacts.

Table 3: Summary of the Board's Assessment of Factors s. 90 *NuPPAA*

Factor	Comment
The size of the geographic area, including the size of wildlife habitats, likely to be affected by the impacts.	▪ The physical footprint of the proposed project is within the former Isachsen High Arctic Weather Station on Ellef Ringnes Island. ▪ The proposed project would take place within habitats of far-ranging wildlife species such as migratory and non-migratory birds, Arctic fox, Arctic hare and Species at Risk such as Polar Bears.
The ecosystemic sensitivity of that area.	▪ No specific areas of ecosystemic sensitivity have been identified by the Proponent within the physical footprint of the proposed project.

Factor	Comment
The historical, cultural and archaeological significance of that area.	▪ No specific areas of historical, cultural and archaeological significance have been identified by the Proponent within the physical footprint of the proposed project.
The size of the human and the animal populations likely to be affected by the impacts.	▪ The proposed project is unlikely to result in significant population-level effects on local human and animal populations.
The nature, magnitude and complexity of the impacts; the probability of the impacts occurring; the frequency and duration of the impacts; and the reversibility or irreversibility of the impacts.	▪ A zone of influence of up to 20 km from the most potentially disruptive project activities was selected for the NIRB's assessment. ▪ With adherence to the relevant regulatory requirements and application of the mitigation measures recommended by the NIRB, no significant residual effects are expected to occur.
The cumulative impacts that could result from the impacts of the project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out.	▪ The NIRB has not identified any past, present, and reasonably foreseeable projects at this time; however, the Board has recommended terms and conditions along with mitigation measures designed with consideration for the potential for cumulative effects in the Board Views section.
Any other factor that the Board considers relevant to the assessment of the significance of impacts.	▪ Notes that the clean-up activities would contribute to restoring the previously disturbed areas and remove sources of possible contamination.

Regulatory Requirements

The Proponent is also advised that the following legislation may apply to the Project:

Acts and Regulations

1. The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (http://laws-lois.justice.gc.ca/eng/acts/n-28.8/).
2. The *Migratory Birds Convention Act* (http://laws-lois.justice.gc.ca/eng/acts/M-7.01/), the *Migratory Birds Regulations* (https://laws-lois.justice.gc.ca/eng/regulations/C.R.C.,_c._1035/index.html) and the *Migratory Bird Sanctuary Regulations* (https://laws-lois.justice.gc.ca/eng/regulations/C.R.C.,_c._1036/index.html).
3. The *Species at Risk Act* (https://laws-lois.justice.gc.ca/eng/acts/s-15.3/.). Attached in **Appendix A** is a list of Species at Risk in Nunavut.
4. The *Wildlife Act (Nunavut)* and its corresponding regulations (http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html).
5. The *Nunavut Act* (http://laws-lois.justice.gc.ca/eng/acts/N-28.6/). The Proponent must comply with the proposed terms and conditions listed in the attached **Appendix B**.

6. The *Transportation of Dangerous Goods Act* (http://laws-lois.justice.gc.ca/eng/acts/t-19.01/) and the *Transportation of Dangerous Goods Regulations* (http://www.tc.gc.ca/eng/tdg/clear-tofc-211.htm).
7. The *Canadian Environmental Protection Act* (http://laws-lois.justice.gc.ca/eng/acts/C-15.31/)

Other Applicable Guidelines

8. Environmental Guidelines for the Management of Contaminated Sites, Department of the Environment, Government of Nunavut, Revised December 2014 (https://www.gov.nu.ca/sites/default/files/contaminated_sites_remediation_2014.pdf).
9. Environmental Guidelines for the Management of Hazardous Waste, Government of Nunavut, Revised October 2010 (https://www.gov.nu.ca/sites/default/files/Guideline%20-%20General%20Management%20of%20Hazardous%20Waste%20%28revised%20Oct%202010%29_0.pdf).

VIEWS OF THE BOARD

In considering the above factors, the Board has identified the following and respectfully provides its views regarding whether or not the proposed project has the potential to result in significant impacts. The NIRB has also proposed terms and conditions that would mitigate the potential adverse impacts identified.

Ecosystem, wildlife habitat and Inuit harvesting activities:

Valued Component	Terrestrial Wildlife and Wildlife Habitat (including migratory and non-migratory birds, Arctic fox, Arctic hare, and Species at Risk such as polar bears)
Potential effects:	Project activities including various aircraft use, truck and ATV travel, temporary camp operations, construction activities, and full-scale remediation and decommissioning activities may result in temporary noise and visual disturbance to terrestrial wildlife and wildlife habitat.
Nature of Impacts:	The potential for impacts is considered to be limited due to remediation and stabilization of the disturbed areas activities.
Mitigating Factors:	Proponent proposes to ensure temporary camp is established with minimal impact to wildlife. The Board notes that the clean-up activities would contribute to restoring the previously disturbed areas to a natural state and remove sources of possible contamination.
Proposed Terms and Conditions:	Waste Management – 10 Wildlife General – 21 through 23 Migratory Birds and Raptor Disturbance – 24 and 25

Valued Component	Land, terrestrial vegetation, and ground stability

Potential effects:	Potential adverse impacts to the ground stability, vegetation quality, and terrain due to remediation operations, storage and use of fuel, moving of equipment and personnel and the construction and use of a temporary camp and associated facilities.
Nature of Impacts:	The potential for impacts is considered to be limited if regulations and best practices for remediation operations are followed. The potential for disturbance due to other activities is considered to be minimal due to the localized and temporary nature of the activities.
Mitigating Factors:	The Proponent noted that waste generated by the project would be appropriately managed and disposed of. The Board notes that the clean-up activities would assist in restoring the previously disturbed areas as much as possible and remove sources of possible contamination, noting that these are major remediation activities and it is unlikely that the land will be fully restored.
Proposed Terms and Conditions:	Water courses/Water bodies (including fresh and marine waters) – 6 through 9 Waste Management – 10 Fuel and Chemical Storage – 11 through 19 Noise – 20 Aircraft Flight Restrictions – 26 through 30 Road and Ground Disturbance – 31 Aggregate Removal within Existing and New Quarries – 33 through 36 Drilling – General – 37 through 39 Drilling on Land – 40 through 44 Land Use and Restoration of Disturbed Areas – 45 through 49 Camps – 50 and 51

Valued Component	Public and traditional land use activities
Potential effects:	No specific concerns or impacts to public and traditional land use activities in the area have been identified, however, the Board is recommending terms and conditions to ensure project activities are informed by available Inuit Qaujimaningit and that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.
Nature of Impacts:	Potential for impacts is considered to be minimal due to the location of the project, and the limited spatial footprint.
Mitigating Factors:	The Proponent has committed to conducting project activities in a manner that minimizes disturbance to wildlife and the surrounding environment, which may help reduce potential effects on wildlife harvesting and traditional land use activities.
Proposed Terms and Conditions:	Other – 55 and 56

Socio-economic effects on northerners:

Valued Component	Historical and archeological sites
Potential effects:	The Proponent conducted an archeological impact assessment and found no archeological sites within the project area. If any unknown historical or archeological sites are found, the Proponent should contact the Government of Nunavut – Department of Culture and Heritage to discuss next steps.
Nature of Impacts:	The potential for impacts is considered to be limited to remediation and restoration activities. The Board is also recommending terms and conditions that ensure that the potential adverse impacts to archaeological resources are avoided or appropriately mitigated.
Mitigating Factors:	Recommended Terms and Conditions
Proposed Terms and Conditions:	Heritage Sites – 52 through 54

Significant public concern:

Valued Component	Public concern.
Potential effects:	The Project has the potential to raise public concern related to environmental disturbance and remediation activities in the region.
Nature of Impacts:	The potential for impacts is considered to be minimal as long as the Proponent follows the recommended terms and conditions.
Mitigating Factors:	The Board is recommending terms and conditions to ensure project activities do not interfere with Inuit wildlife harvesting or traditional land use activities, to the extent possible hire local people and access local services where possible, and to ensure planned activities in the area utilize available Inuit Qaujimaningit.
Proposed Terms and Conditions:	Other – 55 through 57

Technological innovations for which the effects are unknown:

- No specific issues have been identified associated with this project proposal.

Administrative Conditions:

To encourage compliance with applicable regulatory requirements and assist the Board and responsible authorities with compliance and effects monitoring for project activities, the following project-specific terms and conditions have been recommended: 1-5.

In considering the above factors and subject to the Proponent's compliance with regulatory requirements and the terms and conditions necessary to mitigate against the potential adverse environmental and social effects, the Board is of the view that the proposed project is unlikely to cause significant public concern and its adverse ecosystemic and socioeconomic impacts are unlikely to be significant or are highly predictable and can be adequately mitigated by known technologies.

The Board is recommending the following specific terms and conditions to apply in respect of the project:

General

1. Environment and Climate Change Canada (the Proponent) shall maintain a copy of the Project Terms and Conditions at the site of operation at all times and make it accessible to enforcement officers upon request.
2. The Proponent shall operate in accordance with all commitments stated in correspondence provided to the Nunavut Planning Commission (NPC File No.: 151218) and the NIRB (Online Application Form, July 16, 2026). This information should be accessible to enforcement officers upon request.
3. The Proponent shall operate the site in accordance with all applicable Acts, Regulations and Guidelines.
4. The Proponent shall ensure that it meets the standards and/or limits as set out in the authorizing agencies' permits or licences as required for this project.
5. The Proponent shall ensure that all personnel, staff and contractors are adequately trained prior to commencement of all project activities, and shall be made aware of all operational plans, management plans, guidelines and Proponent commitments relating to the project.

Water courses/Water bodies (including fresh and marine waters)

6. The Proponent shall not extract water from any fish-bearing water body unless the water intake hose is equipped with a screen of appropriate mesh size to ensure that there is no entrapment of fish. Small lakes or streams should not be used for water withdrawal unless otherwise authorized by the appropriate authorizing agency.
7. The Proponent shall ensure that no disturbance of the stream bed, lakebed or the banks of any definable watercourse be permitted, except where deemed necessary for maintaining project-specific operational commitments or approved by a responsible authority in cases of spill management.
8. The Proponent shall implement erosion and sediment suppression measures on all areas during all project activities in order to prevent sediment or fugitive dust from entering any water body or surrounding environment. Erosion prevention measures may include berms or silt fences.
9. The Proponent shall not deposit, nor permit the deposit of any fuel, chemicals, wastes (including wastewater) or sediment into any water body. The Proponent should have in place an Emergency Spill Response Plan that is approved by the appropriate authorizing agency(ies).

Waste Management

10. The Proponent shall manage all hazardous and non-hazardous waste including food, domestic wastes, debris and petroleum-based chemicals (e.g., greases, gasoline, glycol-based antifreeze) in such a manner to avoid release into the environment and access to wildlife at all times until disposed of appropriately or at an approved facility.

Fuel and Chemical Storage

11. The Proponent shall locate all fuel and other hazardous materials a minimum distance away from the high-water mark of any water body and environmentally sensitive areas as required by the appropriate authorizing agencies. The materials shall be stored in such a manner as to prevent their release into the environment.
12. The Proponent shall use adequate secondary containment or a surface liner (e.g., self-supporting insta-berms and fold-a-tanks) when storing barreled fuel and chemicals at all locations.
13. The Proponent shall ensure that re-fuelling of all equipment occurs a minimum distance away from the high-water mark of any water body as required by the appropriate authorizing agencies.
14. Fuel and hazardous material storage areas and fuel lines should be clearly marked with signs or flagging to avoid accidental breaks and punctures, and to ensure areas remain visible during the winter months.
15. The Proponent shall routinely inspect and document the conditions of fuel and hazardous material storage containers and containment areas as required by the appropriate authorizing agencies. Fuel containment areas shall be kept clear of debris, water and snow to facilitate inspections for leaks.
16. The Proponent shall have a Spill Contingency Plan in place at all fuel storage or transfer locations and shall ensure that appropriate spill response equipment and clean-up materials (e.g., shovels, pumps, barrels, drip pans, and absorbents) are readily available.
17. The Proponent shall follow the authorizing agencies' direction for management and removal of hazardous materials and wastes (e.g., contaminated soils, sediment and waste oil).
18. The Proponent shall ensure that wildlife deterrent systems are utilized at the time of a spill incident in order to avoid wildlife (terrestrial or marine) and migratory birds from being contaminated.
19. The Proponent shall ensure that all spills of fuel or other deleterious materials of 100 litres or more must be reported immediately to the 24-hour Spill Line at (867) 920-8130.

Noise

20. All construction and road vehicles must be fitted with standard and well-maintained noise suppression devices.

Wildlife – General

21. The Proponent shall not substantially alter or damage or destroy any wildlife habitat in conducting this operation unless otherwise authorized by the appropriate authorizing agencies.
22. The Proponent shall not chase, weary, harass or molest wildlife. This includes persistently circling, chasing, hovering over, pursuing or in any other way harass wildlife, or disturbing large groups of animals.

23. The Proponent shall ensure that all wildlife have the right-of-way on any roads or trails. Vehicles are required to slow down or stop and wait to permit the free and unrestricted movement of wildlife across roads or trails at any location.

Migratory Birds and Raptors Disturbance

24. The Proponent shall carry out all phases of the project in a manner that protects migratory birds and avoids harming, killing or disturbing migratory birds or destroying, disturbing or taking their nests or eggs. In this regard, the Proponent shall take into account Environment and Climate Change Canada's *Avoidance Guidelines*. The Proponent's actions in applying the *Avoidance Guidelines* shall be in compliance with the *Migratory Birds Convention Act, 1994* and with the *Species at Risk Act*.

25. The Proponent shall not disturb or destroy the nests or eggs of any birds. If active nests of any birds are discovered or located (i.e., with eggs or young), the Proponent shall avoid these areas until nesting is complete and the young have naturally left the vicinity of the nest by establishing a protection buffer zone[1] appropriate for the species and the surrounding habitat.

Aircraft Flight Restrictions

26. The Proponent shall not alter flight paths to approach wildlife and avoid flying directly over animals.

27. The Proponent shall plan flight paths that minimize flights over known habitat likely to have birds or concentrations of wildlife. Aircraft should avoid critical and sensitive wildlife areas at all times by choosing alternate flight corridors.

28. The Proponent shall restrict aircraft/helicopter activity related to the project to a minimum flight altitude of 610 metres (2,100 ft) above ground level except during landing, take-off or if there is a specific requirement for low-level flying, which does not disturb wildlife or migratory birds.

29. The Proponent shall avoid known concentrations of birds (e.g., bird colonies, moulting areas) by a lateral distance of 1.5 kilometre. If avoidance is not possible maintain a minimum flight altitude of 1,100 metres (3,500 feet) over these areas.

30. The Proponent shall ensure that aircraft/helicopter do not, unless for emergency, touch-down in areas where wildlife is present.

Road and Ground Disturbance

31. The Proponent shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles must be suspended if rutting occurs.

Aggregate Removal within Existing and New Quarries

32. The Proponent shall not remove any material from below the ordinary highwater mark of any lake or stream and shall maintain an undisturbed buffer zone as required by the

1 Recommended setback distances to define buffer zones have been established by Environment and Climate Change Canada for different bird groups nesting in tundra habitat and can be found at www.ec.gc.ca/paom-itmb.

appropriate authorizing agencies between quarry site and any high-water mark of any water body to ensure erosion control.

33. The Proponent shall install silt fences/curtains down stream of any quarry activities.
34. The Proponent shall ensure there is no obstruction of natural drainage, flooding or channel diversion from quarry/pit access, stockpiles, or other structures or facilities.
35. The Proponent shall locate screening and crushing equipment on stable ground, at a location with ready access to stockpiles.
36. The Proponent shall clearly stake and flag pit and quarry boundaries, so they remain visible to other land users.

Drilling – General

37. The Proponent shall not allow any drilling wastes to spread to the surrounding lands or water bodies.
38. The Proponent shall ensure that that any deleterious substances (as defined in the *Fisheries Act*) resulting from its activities do not enter into any water bodies frequented by fish.
39. The Proponent shall ensure that all drill areas are constructed to facilitate minimizing the environmental footprint of the project area.

Drilling on Land

40. The Proponent shall not conduct any land-based drilling or mechanized clearing activities a minimum distance of the normal high-water mark of any water body as required by an authorizing agency.
41. If an artesian flow is encountered, the Proponent shall ensure the drill hole is immediately plugged and permanently sealed.
42. The Proponent shall ensure that all sump/depression capacities are sufficient to accommodate the volume of wastewater and any fines that are produced. The sumps shall only be used for inert drilling fluids, and not any other materials or substances.
43. The Proponent shall not locate any sumps within a minimum distance of the normal high-water mark of any water body as required by an authorizing agency.
44. The Proponent shall ensure all drill holes are backfilled or capped prior to the end of each field season. All sumps must be backfilled and restored to original or stable profile prior to the end of each field season.

Land Use and Restoration of Disturbed Areas

45. The Proponent shall use existing trails where possible during project activities on the land.
46. The Proponent shall ensure that the land use area is kept clean and tidy at all times.
47. The Proponent shall avoid disturbance on slopes prone to natural erosion, and alternative locations shall be utilized.
48. The Proponent shall remove all garbage, fuel and equipment at the end of each field season and/or upon completion of work and/or upon abandonment.

49. The Proponent shall ensure that all disturbed areas are restored to a stable or pre-disturbed state using Best Available Technology Economically Achievable (BATEA) upon completion of work and/or abandonment.

Camps

50. The Proponent shall ensure that all camps are located durable surfaces, such as gravel or sand that is consolidated and can withstand repeated, heavy use. Measures shall be put in place to prevent erosion, trail formation and damage to the ground.
51. The Proponent shall not erect camps or store materials on the surface ice of lakes or streams, except that which is for immediate use.

Heritage Sites

52. The Proponent shall ensure that archaeological and paleontological sites are not purposely or inadvertently disturbed by clients or staff as a result of project activities.
53. The Proponent shall ensure that all clients and staff are aware of the Proponent's responsibilities and requirements regarding archaeological or palaeontological sites that are encountered during land-based activities. This should include briefings explaining the prohibitions regarding removal of artifacts and defacing or writing on rocks and infrastructure.
54. No activities shall be conducted in the vicinity (50 metres buffer zone) of any archaeological/historical sites. If archaeological sites or features are encountered, activities shall immediately be interrupted and moved away from this location. Each site encountered needs to be recorded and reported to the Government of Nunavut-Department of Culture and Heritage.

Other

55. The Proponent should consult with local residents regarding their activities in the area and solicit available Inuit Qaujimaningit and information that can inform project activities.
56. The Proponent shall ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.
57. The Proponent should, to the extent possible, hire local people and access local services where possible.

MONITORING AND REPORTING REQUIREMENTS

In addition, the Board is recommending the following:

Annual Report

1. The Proponent shall submit a comprehensive annual report with copies provided to the Nunavut Impact Review Board, by March 31st of each year of permitted activities beginning March 31, 2028. The annual report must contain at least the following information:
    a) A summary of activities undertaken for the year, including:
        - a map showing the approximate location of drill sites;

- a map showing the location of the fuel cache;
- a description of local hires, contracting opportunities and initiatives;
- flight altitudes, frequency of flights and anticipated flight routes;
- site photos;

b) A work plan for the following year, including any progressive reclamation work undertaken;

c) A brief summary of WMMP results as well as any mitigation actions that were undertaken. In addition, the Proponent shall maintain a record of wildlife observations while operating within the project area and include it as part of the summary report. The summary report based on wildlife observations should include the following:

1. Locations (i.e., latitude and longitude), species, number of animals, a description of the animal activity, and a description of the gender and age of animals if possible.
2. Prior to conducting project activities, the Proponent should map the location of any sensitive wildlife sites such as denning sites, calving areas, and raptor nests in the project area, and identify the timing of critical life history events (i.e., calving, mating, denning and nesting).
3. Additionally, the Proponent should indicate potential impacts from the project and ensure that operational activities are managed and modified to avoid impacts on wildlife and sensitive sites.

d) An analysis of the effectiveness of mitigation measures for wildlife;

e) Summary of any heritage sites encountered during the remediation activities, any follow-up action or reporting required as a result and how project activities were modified to mitigate impacts on the heritage sites;

f) Summary of its knowledge of Inuit land use in/near the project area and explain how project activities were modified to mitigate impacts on Inuit land use; and

g) A summary of how the Proponent has complied with conditions contained within this Screening Decision, and all conditions as required by other authorizations associated with the project proposal.

OTHER NIRB CONCERNS AND RECOMMENDATIONS

In addition to the project-specific terms and conditions, the Board is recommending the following:

Change in Project Scope

1. Responsible authorities or Proponent shall notify the Nunavut Planning Commission and/or Parks Canada as appropriate, and the NIRB of any changes in operating plans or conditions, including phase advancement, associated with this project prior to any such change.

Copy of licences, etc. to the Board and Commission

2. The NIRB respectfully requests that responsible authorities submit a copy of each licence, permit or other authorization issued for the Project to the NIRB to assist in enabling

possible project monitoring that may be required. Please forward a copy of the licences, permits and/or other authorizations to the NIRB directly at info@nirb.ca or upload a copy to the NIRB's online registry at www.nirb.ca.

Use of Inuit Qaujimaningit

3. The Proponent is encouraged to work with local communities and knowledge holders to inform project design, to carry out the project, and to confirm or validate the perspectives represented in publications, and reports as part of the project. Care should be taken to ensure that Inuit Qaujimaningit and local knowledge collected for the project is used with permission and is accurately represented.

Bear and Carnivore Safety

4. The Proponent should review the Government of Nunavut's booklet on Bear Safety, which can be downloaded from this link: http://gov.nu.ca/sites/default/files/bear_safety_-_reducing_bear-people_conflicts_in_nunavut.pdf. Further information on bear/carnivore detection and deterrent techniques can be found in the "*Safety in Grizzly and Black Bear Country*" pamphlet, which can be downloaded from this link: https://www.enr.gov.nt.ca/sites/enr/files/resources/safety_in_grizzly_and_black_bear_country_english.pdf.

5. There are polar bear and grizzly bear safety resources available from the Bear Smart Society with videos on polar bear safety available in English, French and Inuktitut at http://www.bearsmart.com/play/safety-in-polar-bear-country/. Information can also be obtained from Parks Canada's website on bear safety at the following link: http://www.pc.gc.ca/eng/pn-np/nu/quttinirpaaq/visit/visit6/d.aspx or in reviewing the "*Safety in Polar Bear Country*" pamphlet, which can be downloaded from the following link: http://www.pc.gc.ca/eng/pn-np/nu/quttinirpaaq/visit/visit6/~/media/pn-np/nu/auyuittuq/pdf/shared/PolarBearSafety_English.ashx.

6. Any problem wildlife or any interaction with carnivores should be reported immediately to the local Government of Nunavut, Department of Environment Conservation Office (Conservation Officer of Resolute Bay, phone: (867) 252-3879).

Species at Risk

7. The Proponent review Environment and Climate Change Canada's "Environment Assessment Best Practice Guide for Wildlife at Risk in Canada", available at the following link: http://www.sararegistry.gc.ca/virtual_sara/files/policies/EA%20Best%20Practices%202004.pdf. The guide provides information to the Proponent on what is required when Wildlife at Risk, including *Species at Risk*, are encountered or affected by the project.

Migratory Birds

8. The Proponent review Canadian Wildlife Services' "Key migratory bird terrestrial habitat sites in the Northwest Territories and Nunavut", available at the following link:

http://publications.gc.ca/site/eng/317630/publication.html and "Key marine habitat sites for migratory birds in Nunavut and the Northwest Territories", available at the following link: http://publications.gc.ca/site/eng/392824/publication.html. The guide provides information to the Proponent on key terrestrial and marine habitat areas that are essential to the welfare of various migratory bird species in Canada.

9. For further information on how to protect migratory birds, their nests and eggs when planning or carrying out project activities, consult Environment and Climate Change Canada's Incidental Take web page and the fact sheet "Planning Ahead to Reduce the Risk of Detrimental Effects to Migratory Birds, and their Nests and Eggs" available at: http://publications.gc.ca/collections/collection_2013/ec/CW66-324-2013-eng.pdf.

Transport of Dangerous Goods and Waste Management

10. Environment and Climate Change Canada recommend that all hazardous wastes, including waste oil, receive proper treatment and disposal at an approved facility.

11. The Proponent shall ensure that proper shipping documents (waste manifests, transportation of dangerous goods, etc.) accompany all movements of dangerous goods. Further, the Proponent shall ensure that the shipment of all dangerous goods is registered with the Government of Nunavut Department of Environment, Department of Environment Manager. Contact the Manager (867) 975-7748 to obtain a manifest if dangerous goods including hazardous wastes will be transported.

12. The Proponent shall provide an authorization or letter of conformation of disposal be obtained from the owner/operator of the landfill to be used for disposal of project-related wastes.

CONCLUSION

The foregoing constitutes the Board's screening decision with respect to the Environment and Climate Change Canada's (ECCC) "Remediation of the former Isachsen High Arctic Weather Station". The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated August 28, 2026 at Iqaluit, NU.

Albert Ehaloak, Chairperson

Attachments: Appendix A: Species at Risk in Nunavut
Appendix B: Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders

APPENDIX A: SPECIES AT RISK IN NUNAVUT

Due to the requirements of Section 79(2) of the *Species at Risk Act*, S.C. 2002, c. 29 *(SARA)*, and the potential for project-specific adverse effects on listed wildlife species and its critical habitat, measures should be taken as appropriate to avoid or lessen those effects, and the effects need to be monitored. Project effects could include species disturbance, attraction to operations and destruction of habitat. This section applies to all species listed on Schedule 1 of *SARA*, as listed in the table below, or have been assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which may be encountered in the project area. This list may not include all species identified as at risk by the Territorial Government. The following points provide clarification on the applicability of the species outlined in the table.

- Schedule 1 is the official legal list of Species at Risk for *SARA*. *SARA* applies to all species on Schedule 1. The term "listed" species refers to species on Schedule 1.
- Schedule 2 and 3 of *SARA* identify species that were designated at risk by the COSEWIC prior to October 1999 and must be reassessed using revised criteria before they can be considered for addition to Schedule 1.
- Some species identified at risk by COSEWIC are "pending" addition to Schedule 1 of *SARA*. These species are under consideration for addition to Schedule 1, subject to further consultation or assessment.

If species at risk are encountered or affected, the primary mitigation measure should be avoidance. The Proponent should avoid contact with or disturbance to each species, its habitat and/or its residence. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the Species at Risk Registry at http://www.sararegistry.gc.ca for information on specific species.

Monitoring should be undertaken by the Proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of Species at Risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested.

For species primarily managed by the Territorial Government, the Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize effects to these species from the project.

Mitigation and monitoring measures must be undertaken in a way that is consistent with applicable recovery strategies and action/management plans.

Schedules of *SARA* are amended on a regular basis, so it is important to check the *SARA* registry (www.sararegistry.gc.ca) to get the current status of a species.

Updated: September 2024

Terrestrial Species at Risk[2]	COSEWIC Designation	Schedule of *SARA*	Government Organization with Primary Management Responsibility[3]
Buff-breasted Sandpiper	Special Concern	Schedule 1	Environment and Climate Change Canada (ECCC)
Common Nighthawk	Threatened	Schedule 1	ECCC
Eskimo Curlew	Endangered	Schedule 1	ECCC
Harlequin Duck	Special Concern	Schedule 1	ECCC
Harris's Sparrow	Special Concern	Schedule 1	ECCC
Horned Grebe	Special Concern	Schedule 1	ECCC
Ivory Gull	Endangered	Schedule 1	ECCC
Olive-sided Flycatcher	Threatened	Schedule 1	ECCC
Peregrine Falcon	Special Concern	Schedule 1	ECCC
Red Knot Islandica Subspecies	Special Concern	Schedule 1	ECCC
Red-necked Phalarope	Special Concern	Schedule 1	ECCC
Ross's Gull	Threatened	Schedule 1	ECCC
Rusty Blackbird	Special Concern	Schedule 1	ECCC
Short-eared Owl	Special Concern	Schedule 1	ECCC
Porsild's Bryum	Threatened	Schedule 1	Government of Nunavut (GN)
Transverse Lady Beetle	Special Concern	No Schedule	GN
Caribou (Dolphin and Union Population)	Endangered	Schedule 1	GN
Caribou (Barren-ground Population)	Threatened	No Schedule	GN
Caribou (Torngat Mountains Population)	Endangered	No Schedule	GN
Grizzly Bear (Western Population)	Special Concern	Schedule 1	ECCC
Peary Caribou	Endangered	Schedule 1	GN
Polar Bear	Special Concern	Schedule 1	ECCC
Wolverine	Special Concern	Schedule 1	GN
Atlantic Walrus (High Arctic Population)	Special Concern	No Schedule	Fisheries and Oceans Canada (DFO)
Atlantic Walrus (Central/Low Arctic Population)	Special Concern	No Schedule	DFO
Beluga Whale (Cumberland Sound Population)	Threatened	Schedule 1	DFO
Beluga Whale (Eastern Hudson Bay Population)	Endangered	No Schedule	DFO
Beluga Whale (Eastern High Arctic-Baffin Bay Population)	Special Concern	No Schedule	DFO
Beluga Whale (Western Hudson Bay Population)	Special Concern	No Schedule	DFO
Atlantic Cod (Arctic Lakes Population)	Special Concern	No Schedule	DFO
Fourhorn Sculpin (Freshwater Form)	Data Deficient	Schedule 3	DFO
Lumpfish	Threatened	No Schedule	DFO
Thorny Skate	Special Concern	No Schedule	DFO

2 The Department of Fisheries and Oceans has responsibility for aquatic species.

3 Environment and Climate Change Canada (ECCC) has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency.

APPENDIX B: ARCHAEOLOGICAL AND PALAEONTOLOGICAL RESOURCES TERMS AND CONDITIONS FOR LAND USE PERMIT HOLDERS

INTRODUCTION

The Department of Culture and Heritage (CH) routinely reviews land use applications sent to the Nunavut Water Board, Nunavut Impact Review Board and the Indigenous and Northern Affairs Canada. These terms and conditions provide general direction to the permittee/proponent regarding the appropriate actions to be taken to ensure the permittee/proponent carries out its role in the protection of Nunavut's archaeological and palaeontological resources.

TERMS AND CONDITIONS

1) The permittee/proponent shall have a professional archaeologist and/or palaeontologist perform the following **Functions** associated with the **Types of Development** listed below or similar development activities:

	Types of Development (See Guidelines below)	**Function** (See Guidelines below)
a)	Large scale prospecting	Archaeological/Palaeontological Overview Assessment
b)	Diamond drilling for exploration or geotechnical purpose or planning of linear disturbances	Archaeological/Palaeontological Overview Assessment and/or Inventory and Documentation and/or Mitigation
c)	Construction of linear disturbances, Extractive disturbances, Impounding disturbances and other land disturbance activities	Archaeological/Palaeontological Overview Assessment and/or Inventory and Documentation and/or Mitigation

Note that the above-mentioned functions require either a Nunavut Archaeologist Permit or a Nunavut Palaeontologist Permit. CH is authorized by way of the *Nunavut and Archaeological and Palaeontological Site Regulations*[4] to issue such permits.

[4] P.C. 2001-1111 14 June, 2001

2) The permittee/proponent shall not operate any vehicle over a known or suspected archaeological or palaeontological site.
3) The permittee/proponent shall not remove, disturb, or displace any archaeological artifact or site, or any fossil or palaeontological site.
4) The permittee/proponent shall immediately contact CH at (867) 934-2046 or (867) 975-5500 should an archaeological site or specimen, or a palaeontological site or fossil, be encountered or disturbed by any land use activity.
5) The permittee/proponent shall immediately cease any activity that disturbs an archaeological or palaeontological site encountered during the course of a land use operation until permitted to proceed with the authorization of CH.
6) The permittee/proponent shall follow the direction of CH in restoring disturbed archaeological or palaeontological sites to an acceptable condition. If these conditions are attached to either a Class A or B Permit under the Territorial Lands Act Indigenous and Northern Affairs Canada directions will also be followed.
7) The permittee/proponent shall provide all information requested by CH concerning all archaeological sites or artifacts and all palaeontological sites and fossils encountered in the course of any land use activity.
8) The permittee/proponent shall make best efforts to ensure that all persons working under its authority are aware of these conditions concerning archaeological sites and artifacts and palaeontological sites and fossils.
9) If a list of recorded archaeological and/or palaeontological sites is provided to the permittee/proponent by CH as part of the review of the land use application the permittee/proponent shall avoid the archaeological and/or palaeontological sites listed.
10) Should a list of recorded sites be provided to the permittee/proponent, the information is provided solely for the purpose of the proponent's land use activities as described in the land use application, and must otherwise be treated confidentially by the proponent.

Legal Framework

As stated in Article 33 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada* (*Nunavut Agreement*):

Where an application is made for a land use permit in the Nunavut Settlement Area, and there are reasonable grounds to believe that there could be sites of archaeological importance on the lands affected, no land use permit shall be issued without written consent of the Designated Agency. Such consent shall not be unreasonably withheld. [33.5.12]

Each land use permit referred to in Section 33.5.12 shall specify the plans and methods of archeological site protection and restoration to be followed by the permit holder, and any other conditions the Designated Agency may deem fit. [33.5.13]

Palaeontology and Archaeology
Under the *Nunavut Act*[5], the federal government can make regulations for the protection, care and preservation of palaeontological and archaeological sites and specimens in Nunavut. Under the *Nunavut Archaeological and Palaeontological Sites Regulations*[6], it is illegal to alter or disturb any palaeontological or archaeological site in Nunavut unless permission is first granted through the permitting process.

Definitions
As defined in the *Nunavut Archaeological and Palaeontological Sites Regulations*, the following definitions apply:

> *"archaeological site" means a place where an archaeological artifact is found.*
>
> *"archaeological artifact" means any tangible evidence of human activity that is more than 50 years old and in respect of which an unbroken chain of possession or regular pattern of usage cannot be demonstrated, and includes a Denesuline archaeological specimen referred to in section 40.4.9 of the Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement).*
>
> *"palaeontological site" means a site where a fossil is found.*
>
> *"fossil" includes:*
> *Fossil means the hardened or preserved remains or impression of previously living organisms or vegetation and includes:*
> *(a) natural casts;*
> *(b) preserved tracks, coprolites and plant remains; and*
> *(c) the preserved shells and exoskeletons of invertebrates and the preserved eggs, teeth and bones of vertebrates.*

Guidelines for Developers for the Protection of Archaeological Resources in the Nunavut Territory

(**Note:** Partial document only, complete document at: www.ch.gov.nu.ca/en/Archaeology.aspx)

Introduction
The following guidelines have been formulated to ensure that the impacts of proposed developments upon heritage resources are assessed and mitigated before ground surface altering activities occur. Heritage resources are defined as, but not limited to, archaeological and historical sites, burial grounds, palaeontological sites, historic buildings and cairns Effective collaboration between the developer, the Department of Culture, and Heritage (CH), and the contract archaeologist(s) will ensure proper preservation of heritage resources in the Nunavut Territory. The roles of each are briefly described.

[5] s. 51(1)
[6] P.C. 2001-1111 14 June, 2001

CH is the Nunavut Government agency which oversees the protection and management of heritage resources in Nunavut, in partnership with land claim authorities, regulatory agencies, and the federal government. Its role in mitigating impacts of developments on heritage resources is as follows: to identify the need for an impact assessment and make recommendations to the appropriate regulatory agency; set the terms of reference for the study depending upon the scope of the development; suggest the names of qualified individuals prepared to undertake the study to the developer; issue an archaeologist or palaeontologist permit authorizing field work; assess the completeness of the study and its recommendations; and ensure that the developer complies with the recommendations.

The primary regulatory agencies that CH provides information and assistance to are the Nunavut Impact Review Board, for development activities proposed for Inuit Owned Lands (as defined in Section 1.1.1 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada* (*Nunavut Agreement*)), and the Indigenous and Northern Affairs Canada, for development activities proposed for federal Crown Lands.

A developer is the initiator of a land use activity. It is the obligation of the developer to ensure that a qualified archaeologist or palaeontologist is hired to perform the required study and that provisions of the contract with the archaeologist or palaeontologist allow permit requirements to be met; i.e. fieldwork, collections management, artifact and specimen conservation, and report preparation. On the recommendation of the contract archaeologist or palaeontologist in the field and the Government of Nunavut, the developer shall implement avoidance or mitigative measures to protect heritage resources or to salvage the information they contain through excavation, analysis, and report writing. The developer assumes all costs associated with the study in its entirety.

Through his or her active participation and supervision of the study, the contract archaeologist or palaeontologist is accountable for the quality of work undertaken and the quality of the report produced. Facilities to conduct fieldwork, analysis, and report preparation should be available to this individual through institutional, agency, or company affiliations. Responsibility for the curation of objects recovered during field work while under study and for documents generated in the course of the study as well as remittance of artifacts, specimens and documents to the repository specified on the permit accrue to the contract archaeologist or palaeontologist. This individual is also bound by the legal requirements of the *Nunavut Archaeological and Palaeontological Sites Regulations*.

Types of Development

In general, those developments that cause concern for the safety of heritage resources will include one or more of the following kinds of surface disturbances. These categories, in combination, are comprehensive of the major kinds of developments commonly proposed in Nunavut. For any single development proposal, several kinds of these disturbances may be involved

- *Linear disturbances: including the construction of highways, roads, winter roads, transmission lines, and pipelines;*
- *Extractive disturbances: including mining, gravel removal, quarrying, and land filling;*

- *Impoundment disturbances: including dams, reservoirs, and tailings ponds;*
- *Intensive land use disturbances: including industrial, residential, commercial, recreational, and land reclamation work, and use of heritage resources as tourist developments.*
- *Mineral, oil and gas exploration: establishment of camps, temporary airstrips, access routes, well sites, or quarries all have potential for impacting heritage resources*.

Types of Studies Undertaken to Preserve Heritage Resources

Overview: An overview study of heritage resources should be conducted at the same time as the development project is being designed or its feasibility addressed. They usually lack specificity with regard to the exact location(s) and form(s) of impact and involve limited, if any, field surveys. Their main aim is to accumulate, evaluate, and synthesize the existing knowledge of the heritage of the known area of impact. The overview study provides managers with baseline data from which recommendations for future research and forecasts of potential impacts can be made. A Class I Permit is required for this type of study if field surveys are undertaken.

Reconnaissance: This is done to provide a judgmental appraisal of a region sufficient to provide the developer, the consultant, and government managers with recommendations for further development planning. This study may be implemented as a preliminary step to inventory and assessment investigations except in cases where a reconnaissance may indicate a very low or negligible heritage resource potential. Alternately, in the case of small-scale or linear developments, an inventory study may be recommended and obviate the need for a reconnaissance.

The main goal of a reconnaissance study is to provide baseline data for the verification of the presence of potential heritage resources, the determination of impacts to these resources, the generation of terms of reference for further studies and, if required, the advancement of preliminary mitigative and compensatory plans. The results of reconnaissance studies are primarily useful for the selection of alternatives and secondarily as a means of identifying impacts that must be mitigated after the final siting and design of the development project. Depending on the scope of the study, a Class 1 or Class 2 Permit is required for this type of investigation.

Inventory: A resource inventory is generally conducted at that stage in a project's development at which the geographical area(s) likely to sustain direct, indirect, and perceived impacts can be well defined. This requires systematic and intensive fieldwork to ascertain the effects of all possible and alternate construction components on heritage resources. All heritage sites must be recorded on Government of Nunavut Site Survey forms. Sufficient information must be amassed from field, library and archival components of the study to generate a predictive model of the heritage resource base that will:

- allow the identification of research and conservation opportunities;
- enable the developer to make planning decisions and recognize their likely effects on the known or predicted resources; and

- make the developer aware of the expenditures, which may be required for subsequent studies and mitigation. A Class 1 or 2 permit is required.

Assessment: At this stage, sufficient information concerning the numbers and locations of heritage resources will be available, as well as data to predict the forms and magnitude of impacts. Assessments provide information on the size, volume, complexity and content of a heritage resource, which is used to rank the values of different sites or site types given current archaeological knowledge. As this information will shape subsequent mitigation program(s), great care is necessary during this phase.

Mitigation: This refers to the amelioration of adverse impacts to heritage resources and involves the avoidance of impact through the redesign or relocation of a development or its components; the protection of the resource by constructing physical facilities; or, the scientific investigation and recovery of information from the resource by excavation or other method. The type(s) of appropriate mitigative measures are dictated by their viability in the context of the development project. Mitigation strategies must be developed in consultation with, and approved by, the Department of Culture and Heritage. It is important to note that mitigation activities should be initiated as far in advance of the construction of the development as possible.

Surveillance and monitoring: These may be required as part of the mitigation program.

Surveillance may be conducted during the construction phase of a project to ensure that the developer has complied with the recommendations.

Monitoring involves identification and inspection of residual and long-term impacts of a development (i.e. shoreline stability of a reservoir); or the use of impacts to disclose the presence of heritage resources, for example, the uncovering of buried sites during the construction of a pipeline.

Appendix C

Environmental Reports and Management Plans

1. Summary of Remedial Action Plan (RAP): Isachsen High Arctic Weather Station (HAWS),Nunavut, (Kuukyoak, 2026)
2. Environmental Impact Assessment (Dillon Consulting & Outcome Consultants, 2026)
3. Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut (Kuukyoak, 2026)
4. Spill Prevention Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut (Kuukyoak, 2026)
5. Erosion and Sediment Control Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut (Kuukyoak, 2026)
6. Emergency Response Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut (Kuukyoak, 2026)

Report

Summary of Remedial Action Plan (RAP): Isachsen High Arctic Weather Station (HAWS),Nunavut, (Kuukyoak, 2026)

KUUKYOAK

NUNAVUT PLANNING COMMISSION AND NUNAVUT IMPACT REVIEW BOARD

Summary of Remedial Action Plan (RAP): Isachsen High Arctic Weather Station (HAWS), Nunavut

Prepared for Nunavut Planning Commission (NPC) and Nunavut Impact Review Board (NIRB) on behalf of Environment and Climate Change Canada (ECCC)

March 2026



Operations Building



Waste Fuel Drums

RAP Summary

Kuuykoak Ltd. has completed a Remedial Action Plan (RAP) for the Isachsen High Arctic Weather Station (HAWS) in Nunavut ("the Site"). The RAP is a component of the 2024-2025 and 2025-2026 scope of work related to the planning and design services for the decommissioning of the Site, and was carried out on behalf of Environment and Climate Change Canada (ECCC). Other components of the contracted scope of work which were carried out included: Archaeological Impact Assessment, Permitting Requirement and Application Roadmap, 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 Report. The RAP uses information from the aforementioned deliverables as the basis for the remedial planning and design at the current conceptual phase.

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 approximately 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.

Based on field assessments completed in 2023 and 2024, there is an estimated quantity of 5,350 m^3 of non-hazardous materials that will be generated from the remediation activities. With an estimated accuracy of +/-15% for the non-hazardous waste quantity, there is approximately 4,500m^3 to 6,200m^3 of waste that can be placed in an on-site engineered landfill. There is an estimated 4m^3 of hazardous materials which requires off-site disposal. The solid waste materials are comprised from multiple sources including twenty-two (22) building/structures (demolition wastes), four (4) drum dump/metal waste Areas of Environmental Concern (AEC), fifty (50) Aboveground Storage Tanks (ASTs), fourteen (14) non-operational heavy equipment vehicles, and six (6) operational heavy equipment vehicles. Previous assessments identified approximately 76,200L of waste fuel in drums and ASTs at the Site, however, this was either removed from site for beneficial reuse, or incinerated on-site to best efforts in July, 2025. Now that the combustible fuels have been incinerated, approximately 13,000L of waste fuel/oily water mix remains at the Site within drums or ASTs.

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

A summary of wastes which require remediation at the Isachsen HAWS in addition to the respective disposal requirements are described in Table 1.

Table 1. Isachsen HAWS Overall Waste Summary

Waste Stream	Quantity	Unit	Waste Management Method
Remaining waste fuel/oily water mix (post incineration activities)	~13,000	L	Off-site disposal
Landfillable non-hazardous waste (metal debris, building demolition waste, waste drums, non-operational and operational vehicles)	~5,350	m^3	On-Site landfill
Hazardous waste that can be landfilled following proper special handling/packaging and abatement (Asbestos Containing Materials)	~55	m^3	On-Site landfill
Hazardous waste requiring off-site disposal (mercury containing materials, ozone-depleting substances)	~4	m^3	Off-Site disposal

The remediation execution plan for the Isachsen HAWS includes the following preferred management approach for the waste streams as well as other enabling work scopes for the temporary and permanent infrastructure required to facilitate construction:

- Approximately 13,000L of residual liquids comprised of a mix of hydrocarbons and water will require off-site disposal.
- Waste fuel drums would be cleaned, crushed, consolidated in a new engineered on-site landfill. Approximately 3,800 waste fuel drums will need to be cleaned and crushed. Approximately 950m^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 at the on site engineered landfill.
- 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 will be disposed of at an off-site licenced facility.
- 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 760m^3 of non-hazardous waste associated with the heavy equipment would require disposal at a new engineered on-site landfill.
- Approximately 100m^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 100,000m^3 of aggregate for airstrip upgrades, road upgrades, construction of a new engineered on-site landfill, capping of

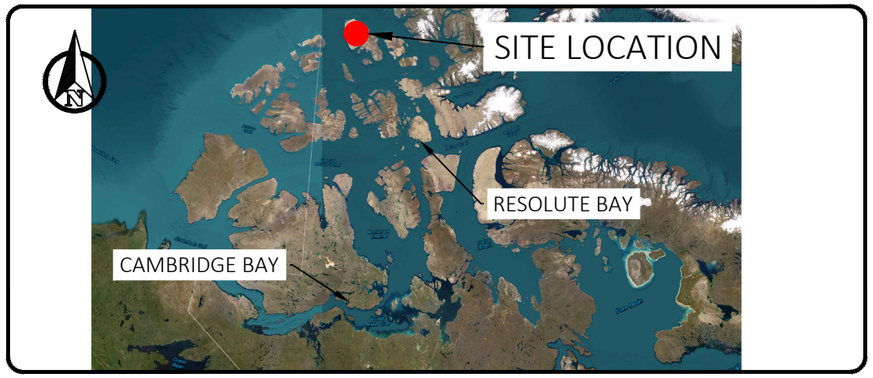
the existing Waste Disposal Areas (WDAs), construction of a camp pad and temporary waste storage area and general site regrading.

- 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 36,000m^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 4,500m^3 to 6,200m^3).
- As with any remote remediation project, site access and logistics is a critical aspect of the integrated planning. A remote camp will be required during remediation. Sealift access is not feasible for mobilization of heavy equipment, camp, and supplies to the Site. Although a cat train over sea ice has been completed previously, this is not considered feasible for the full-scale remediation project from either a safety or a permitting perspective. As such, it is anticipated that sealift mobilization to Resolute Bay followed by aircraft mobilization from Resolute Bay to the Isachsen HAWS will be required.

This remedial action plan report has been successful in identifying the preferred remediation methodology and the associated schedule and cost impact.

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

KUUKYOAK

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ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN - FIGURE 1

SITE LOCATION

KUUYKOAK LTD. 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

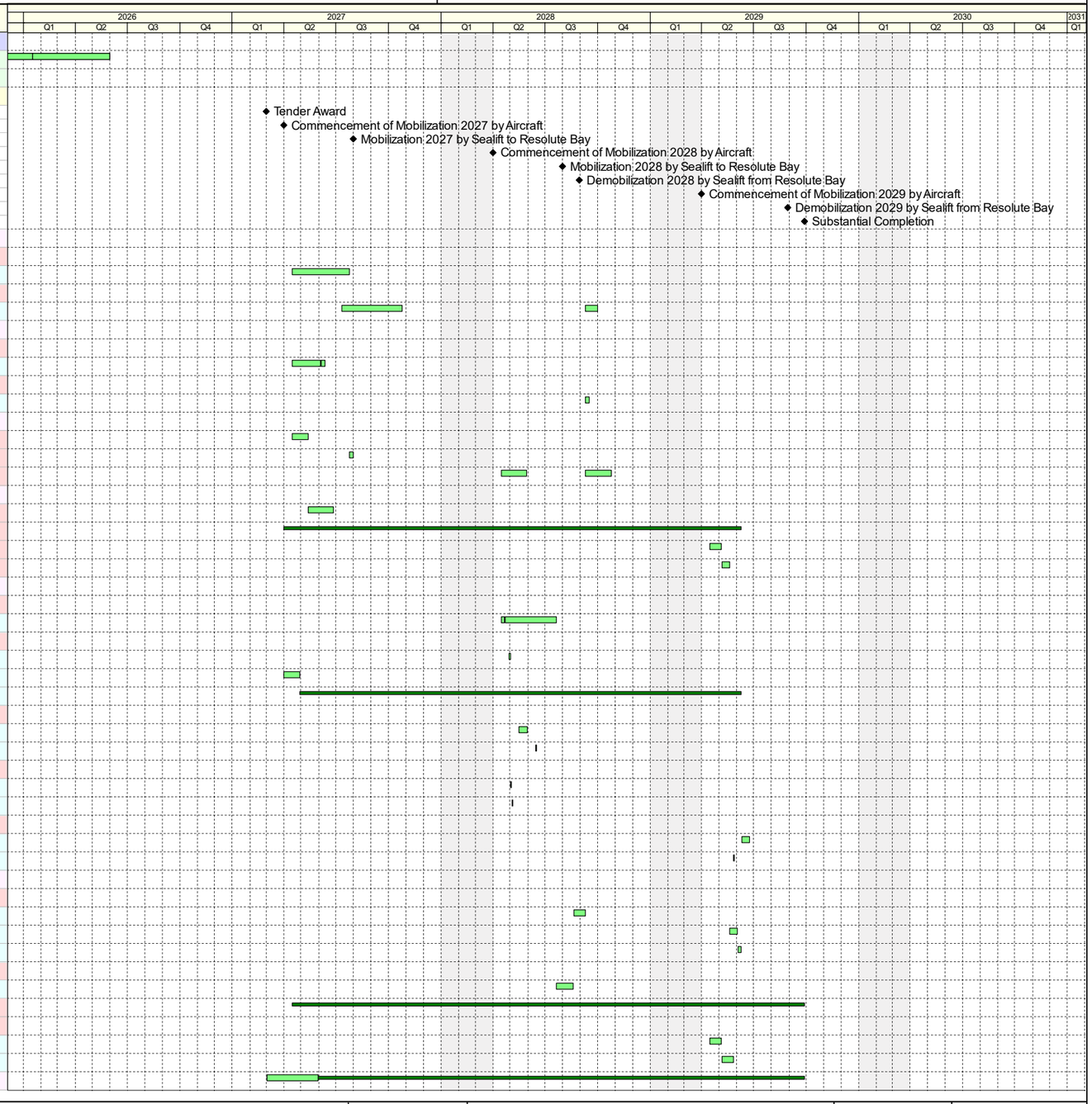
Appendix B

Schedule

NP2023-16 Isachsen High Arctic Weather Station - Remedial Action Plan Level 2 - R5

data date: 01-Dec-25

Activity ID	Activity Name	At Completion Duration	Start	Finish
NP2023-16 Isachsen High Arctic Weather Station - Remedial Action Plan Level 2 - R5		1793	01-Nov-24 A	28-Sep-29
Planning, Engineering & PM		577	01-Nov-24 A	31-May-26
Decommissioning & Remediation		1428	01-Nov-25 A	28-Sep-29
Contractor Scope		942	01-Mar-27 A	28-Sep-29
A1500	Tender Award	0		01-Mar-27
A1520	Commencement of Mobilization 2027 by Aircraft	0	01-Apr-27*	
A1580	Mobilization 2027 by Sealift to Resolute Bay	0	01-Aug-27*	
A1560	Commencement of Mobilization 2028 by Aircraft	0	01-Apr-28*	
A1590	Mobilization 2028 by Sealift to Resolute Bay	0	01-Aug-28*	
A1600	Demobilization 2028 by Sealift from Resolute Bay	0	30-Aug-28*	
A1570	Commencement of Mobilization 2029 by Aircraft	0	01-Apr-29*	
A1610	Demobilization 2029 by Sealift from Resolute Bay	0	30-Aug-29*	
A1540	Substantial Completion	0		28-Sep-29
Drums		375	23-Apr-27 A	30-Sep-28
Drum Liquid Waste		93	23-Apr-27 A	24-Jul-27
HAZ Liquid Waste (Off-Site Disposal)		93	23-Apr-27 A	24-Jul-27
Crushed Drums		295	12-Jul-27	30-Sep-28
Crushed Drums (On-Site Disposal)		295	12-Jul-27	30-Sep-28
AST's		368	16-Apr-27	16-Sep-28
Residual Liquids		57	16-Apr-27	11-Jun-27
HAZ Liquid Waste (Off-Site Disposal)		57	16-Apr-27	11-Jun-27
AST Metal Waste		7	10-Sep-28	16-Sep-28
AST Metal (On-Site Disposal)		7	10-Sep-28	16-Sep-28
Building Demolition		406	16-Apr-27	24-Oct-28
HAZ Waste Abatement		28	16-Apr-27	13-May-27
HAZ Waste (Off-Site Disposal)		7	25-Jul-27	31-Jul-27
Building Demo and On-Site Disposal		193	15-Apr-28	24-Oct-28
Equipment/ Debris		498	01-Apr-27	09-Jun-29
HAZ Waste (Off-Site Disposal)		45	14-May-27	27-Jun-27
Equipment Operation		498	01-Apr-27	09-Jun-29
Debris		21	15-Apr-29	05-May-29
Equipment Non HAZ Disposal		14	06-May-29	19-May-29
Temporary Infrastrucutre		815	01-Apr-27	23-Jun-29
Borrow Area Sources		97	15-Apr-28	20-Jul-28
Aggregate Produced (m3)		97	15-Apr-28	20-Jul-28
Camp		801	01-Apr-27	09-Jun-29
Aggregate Placed (m3)		3	29-Apr-28	01-May-28
Camp Facility		28	01-Apr-27	28-Apr-27
Camp Operation		773	29-Apr-27	09-Jun-29
Temporary Roads		32	16-May-28	16-Jun-28
Aggregate Placed (m3)		15	16-May-28	30-May-28
Material Excavated (m3)		3	14-Jun-28	16-Jun-28
Temporary Waste Storage Facility		4	02-May-28	05-May-28
Aggregate Placed (m3)		2	02-May-28	03-May-28
Liner Placed (m2)		2	04-May-28	05-May-28
Decommissioning & Site Wide Grading		28	27-May-29	23-Jun-29
Decomission Temporary Infrastructure		14	10-Jun-29	23-Jun-29
Aggregate Placed (m3)		2	27-May-29	28-May-29
Permanent Infrastructure		897	16-Apr-27	28-Sep-29
Landfill		143	20-Aug-28	09-Jun-29
Aggregate Placed (m3)		21	20-Aug-28	09-Sep-28
Liner Placed (m2)		14	20-May-29	02-Jun-29
Instrumentation		7	03-Jun-29	09-Jun-29
Airstrip		30	21-Jul-28	19-Aug-28
Aggregate Placed (m3)		30	21-Jul-28	19-Aug-28
Storage Facilities		594	16-Apr-27	28-Sep-29
WDA Closure		42	15-Apr-29	26-May-29
Liner Placed (m2)		21	15-Apr-29	05-May-29
Aggregate Placed (m3)		21	06-May-29	26-May-29
BOPC/Indirects, Submittals, ect		639	02-Mar-27	28-Sep-29



Remaining Level of Effort

Remaining Work

Milestone

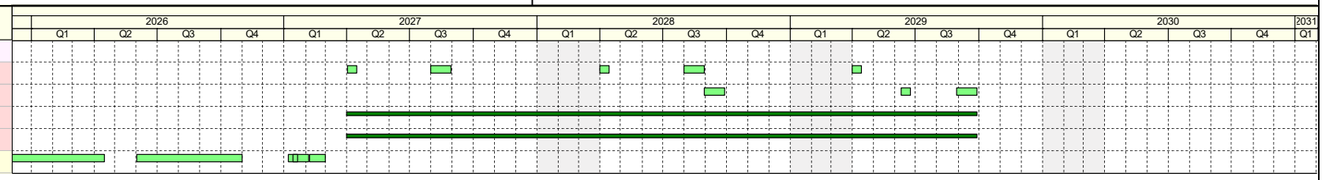
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Date	Revision	Checked	Approved
08-Dec-2025	Isachsen RAP - Overall Schedule R5	C.SADLER	M.BILLOWITS

NP2023-16 Isachsen High Arctic Weather Station - Remedial Action Plan Level 2 - R5

data date: 01-Dec-25

Activity ID	Activity Name	At Completion Duration	Start	Finish
	Logistics	609	01-Apr-27	28-Sep-29
	Mob	441	02-Apr-27	14-Apr-29
	Demob	244	30-Aug-28	28-Sep-29
	Contractor Personnel Transport	609	01-Apr-27	28-Sep-29
	DR Personnel Transport	609	01-Apr-27	28-Sep-29
	Owners Engineer Scope	486	01-Nov-25 A	01-Mar-27



Remaining Level of Effort

Remaining Work

Milestone

KUUKYOAK

Date	Revision	Checked	Approved
08-Dec-2025	Isachsen RAP - Overall Schedule R5	C.SADLER	M.BILLOWITS

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

100 Innovation Drive
Unit 300
Winnipeg, Manitoba
Canada
R3T 6G2
Telephone
204.453.2301

February 10, 2026

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

Attention: Mr. Michael Brownlee
Senior Environmental Specialist

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

Indra Kalinovich, Ph.D., C.Chem. P.Eng.
Project Manager

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.

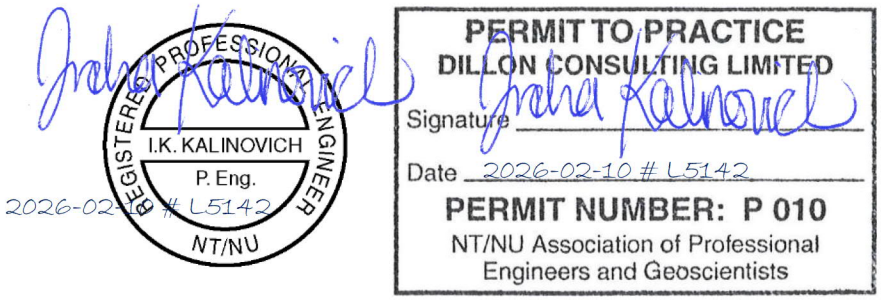
9.0 Limitations and Closure

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)



Indra Kalinovich, Ph.D., C.Chem. P.Eng., FEC
Project Manager

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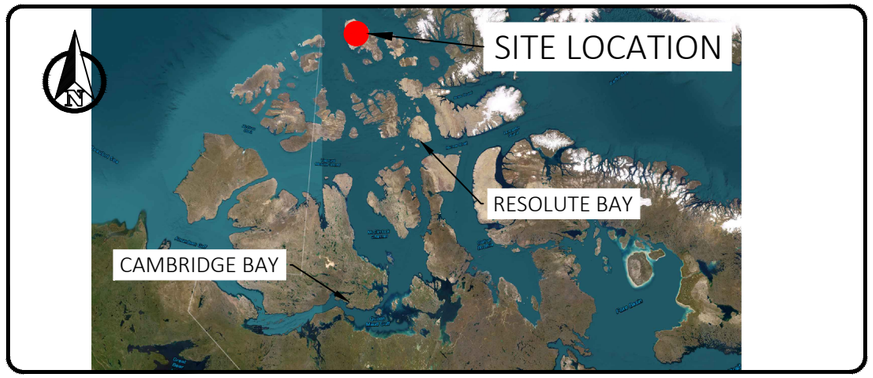
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Appendix A

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
151 HOLLAND AVE SUITE 200
OTTAWA, ONTARIO
K1Y 0Y2
t:613.729.2402

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ISACHSEN HIGH ARCTIC WEATHER STATION

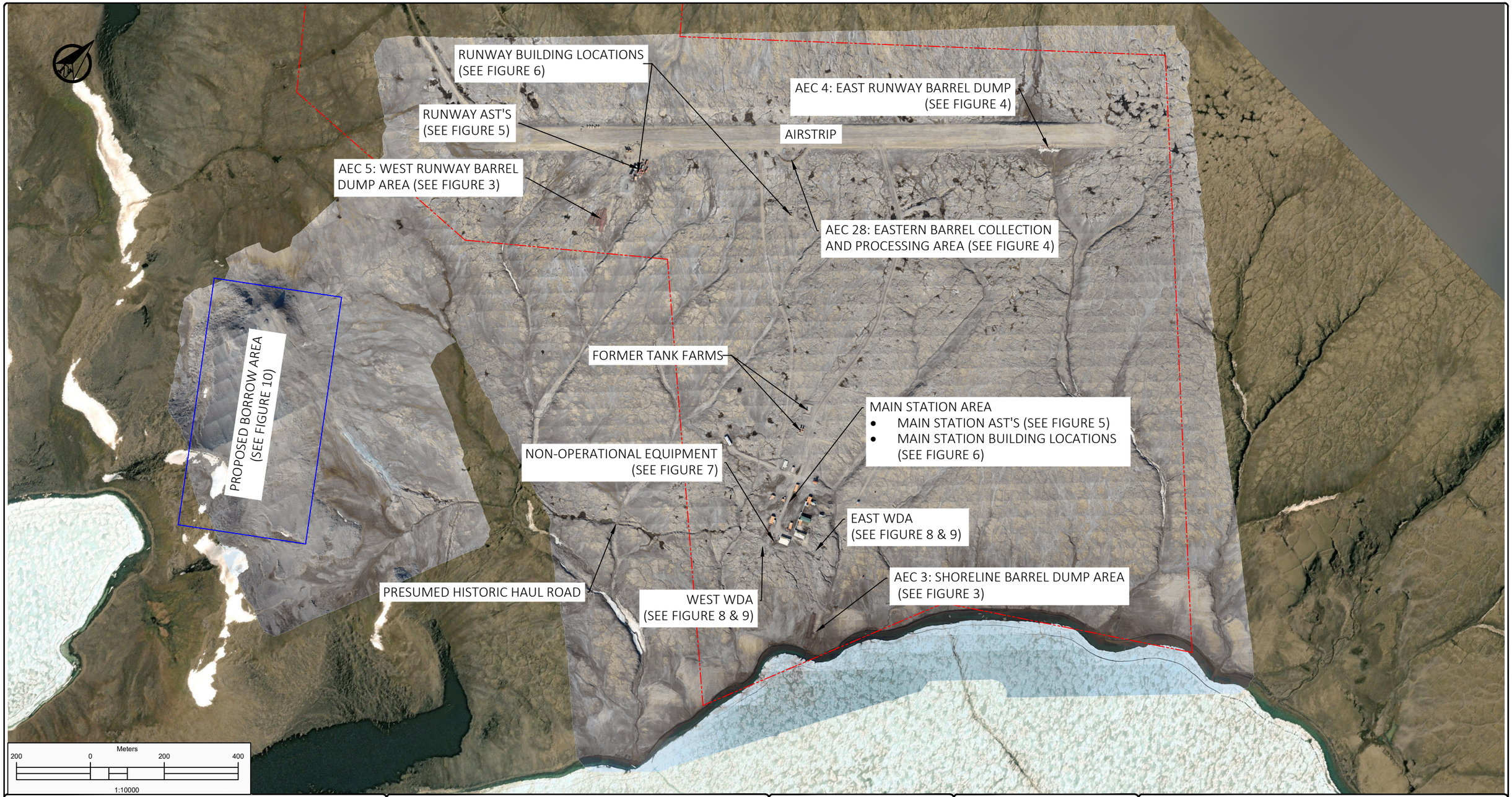
ELLEF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN - FIGURE 1

SITE LOCATION

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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

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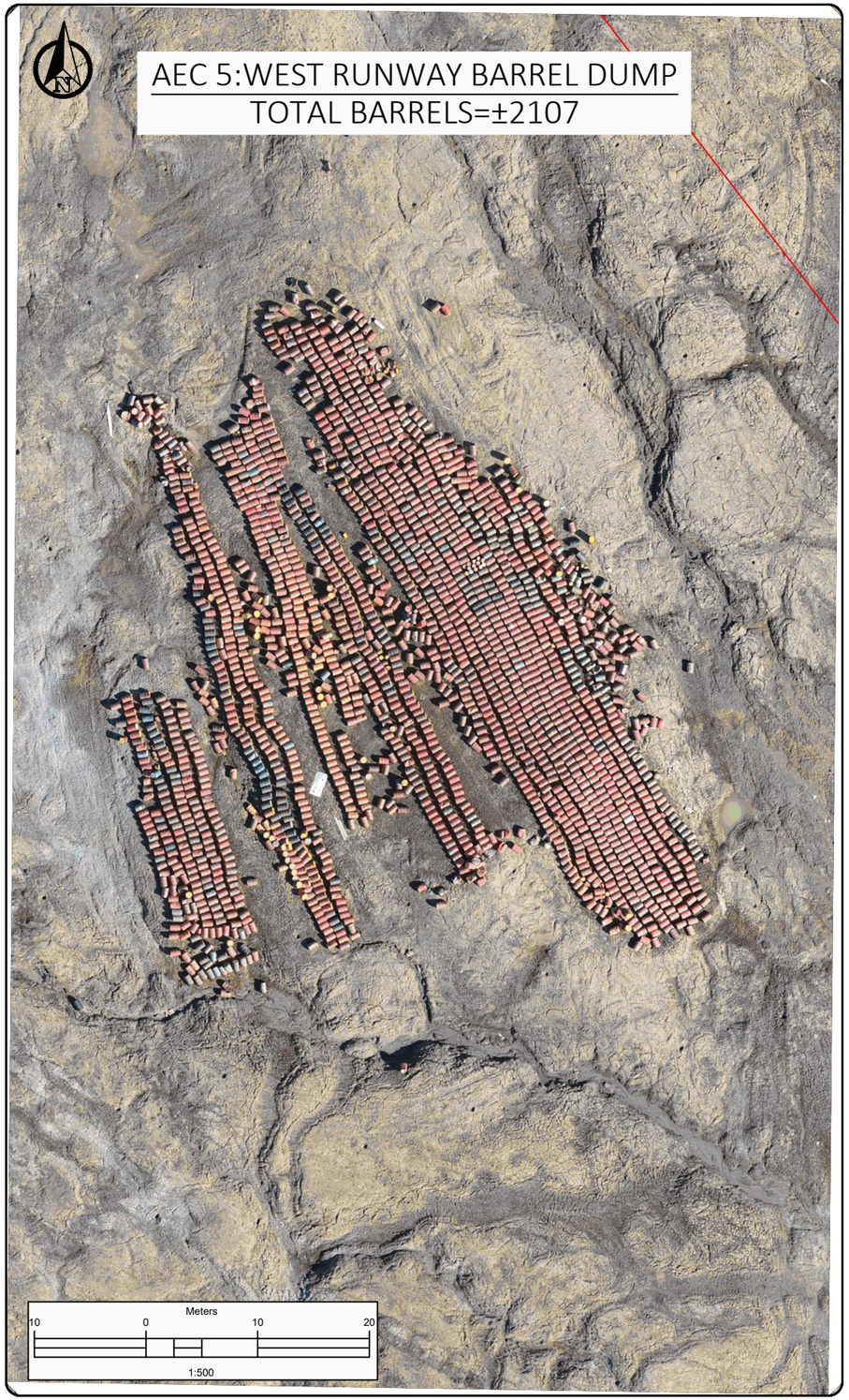
ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN- FIGURE 2

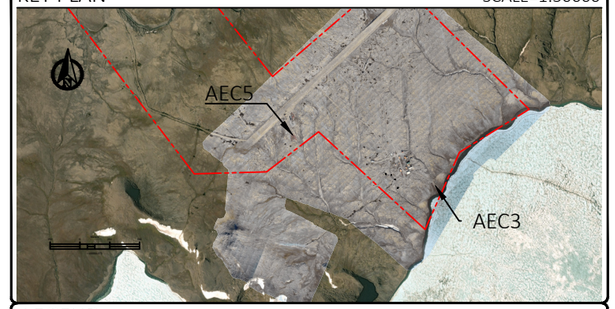
SITE PLAN/ KEY FEATURES

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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 2	REV: 00





KEY PLAN SCALE=1:50000



LEGEND

	DFRP PROPERTY LINE

GENERAL NOTES

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RANKIN INLET , NUNAVUT
X0C 0G0
t:867.645.7533

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151 HOLLAND AVE SUITE 200
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K1Y 0Y2
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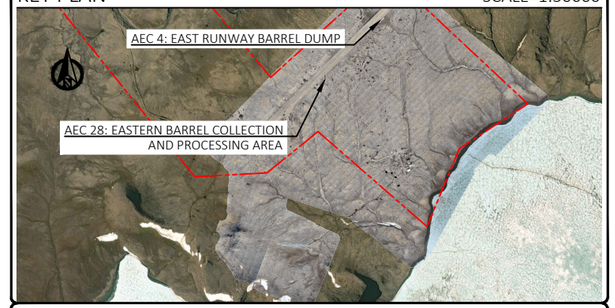
ISACHSEN HIGH ARCTIC WEATHER STATION
ELLEF RINGNESS ISLAND, NUNAVUT
REMEDIAL ACTION PLAN- FIGURE 3
EXISTING CONDITIONS - AEC 5: WEST RUNWAY BARREL DUMP & AEC 3: SHORELINE BARREL DUMP

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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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X0C 0G0
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OTTAWA, ONTARIO
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t:613.729.2402

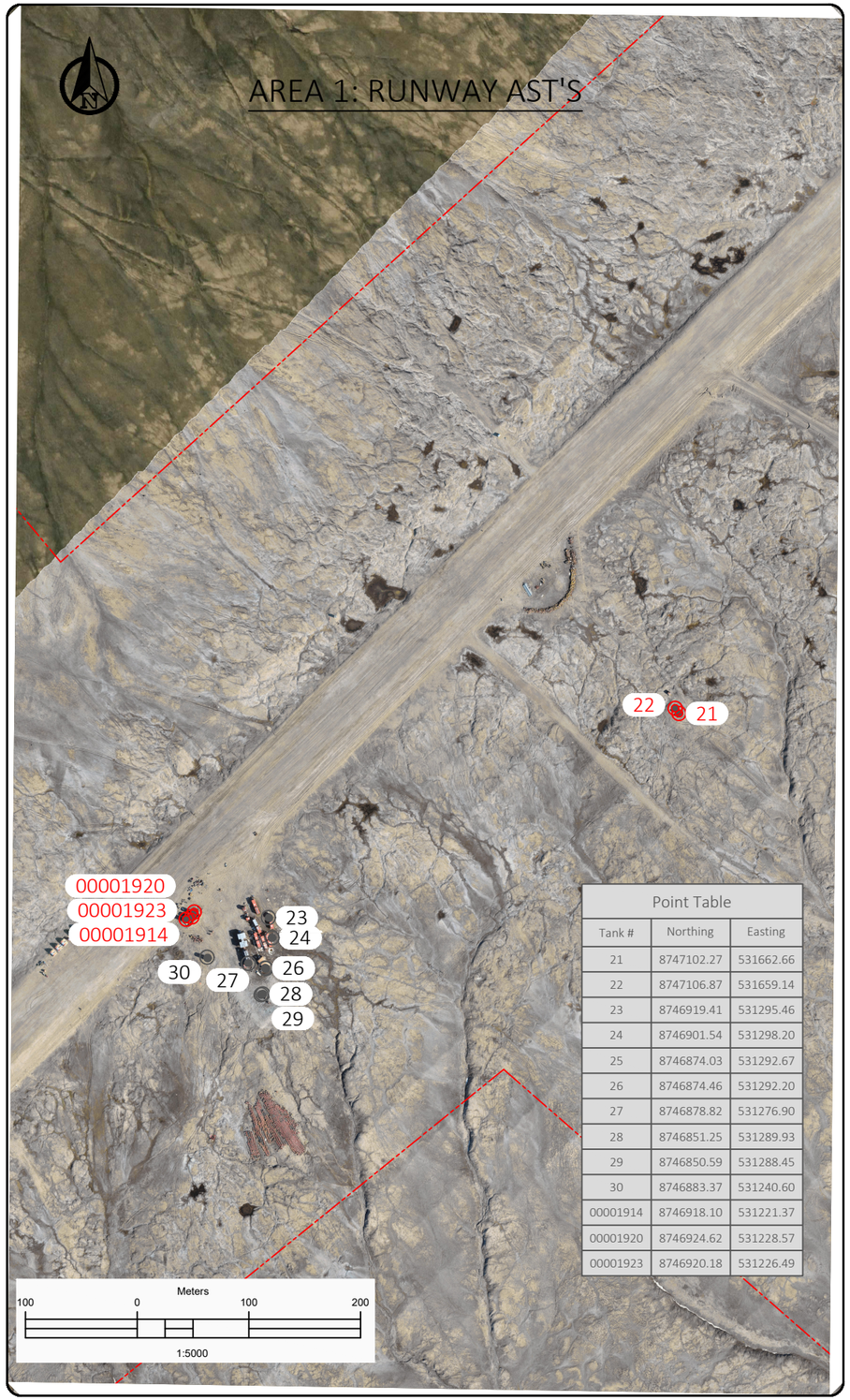
ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

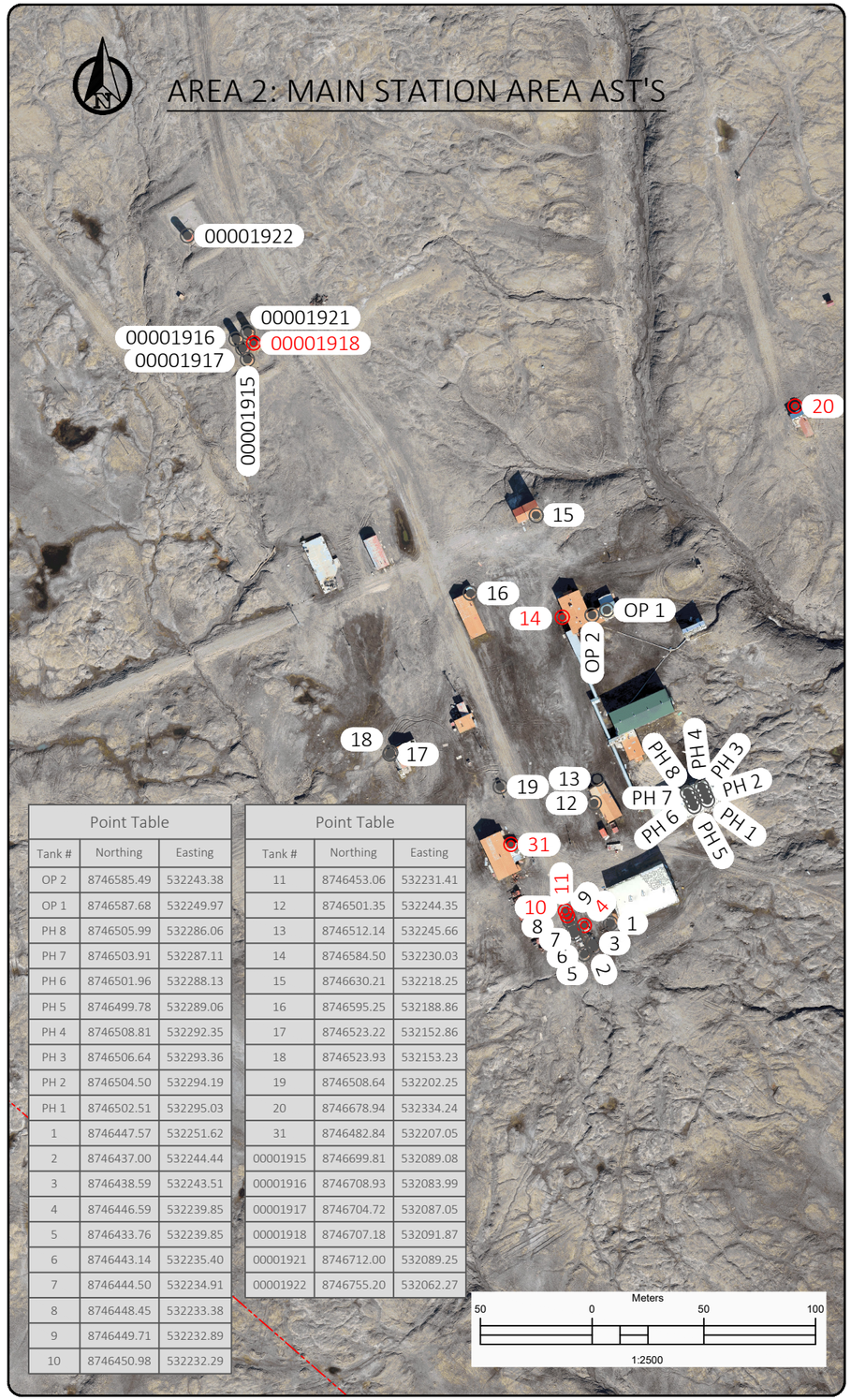
REMEDIAL ACTION PLAN- FIGURE 4

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



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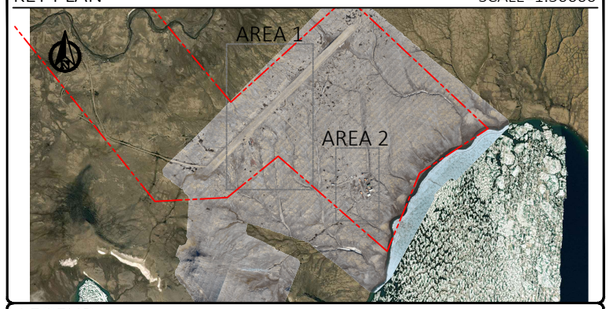


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11	8746453.06	532231.41
12	8746501.35	532244.35
13	8746512.14	532245.66
14	8746584.50	532230.03
15	8746630.21	532218.25
16	8746595.25	532188.86
17	8746523.22	532152.86
18	8746523.93	532153.23
19	8746508.64	532202.25
20	8746678.94	532334.24
31	8746482.84	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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RANKIN INLET , NUNAVUT
X0C 0G0
t:867.645.7533

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151 HOLLAND AVE SUITE 200
OTTAWA, ONTARIO
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t:613.729.2402

ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

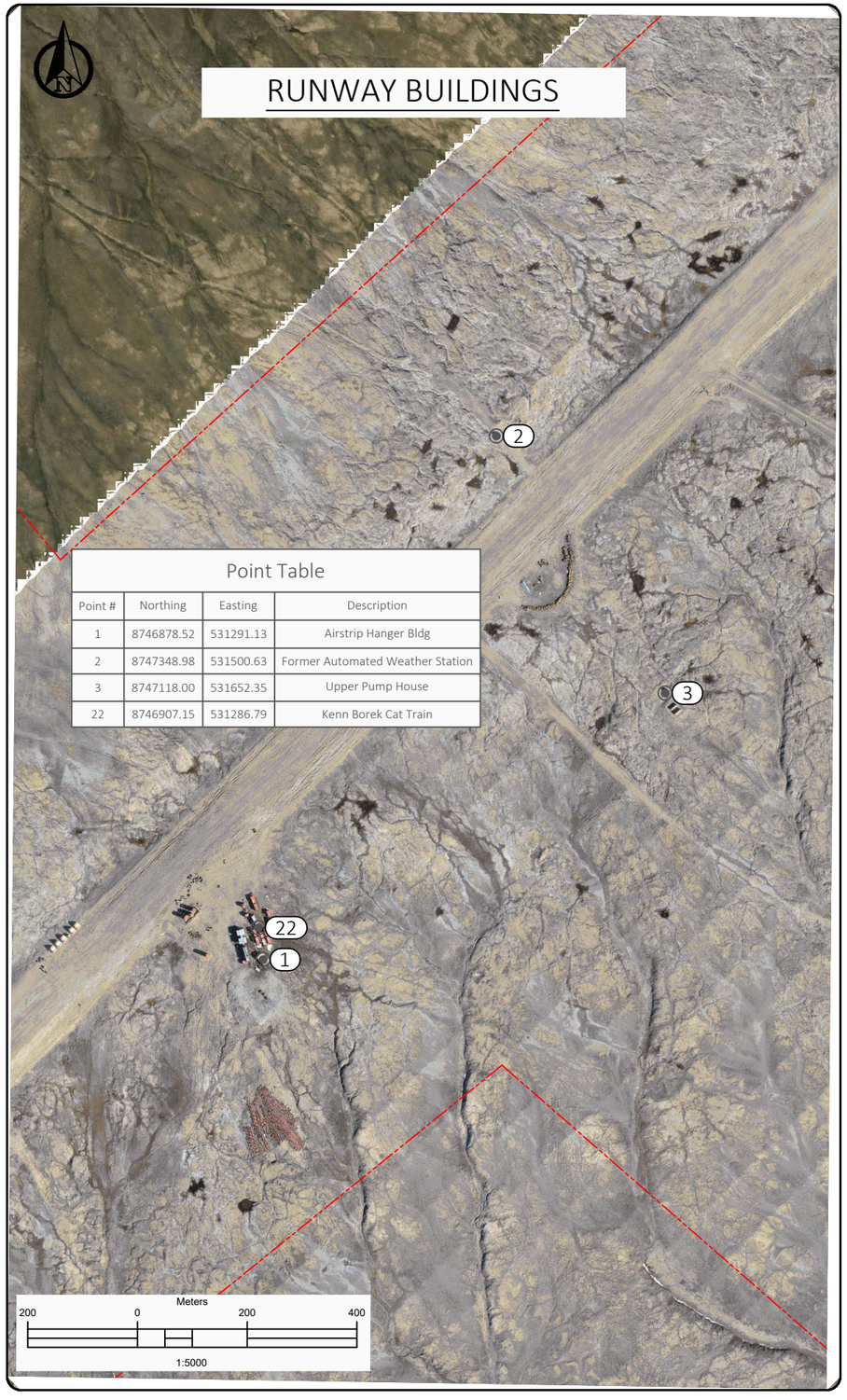
REMEDIAL ACTION PLAN- FIGURE 5

EXISTING CONDITIONS- AST LOCATIONS

OUTCOME PROJECT NUMBER:	DRAWN BY:	SCALE:
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

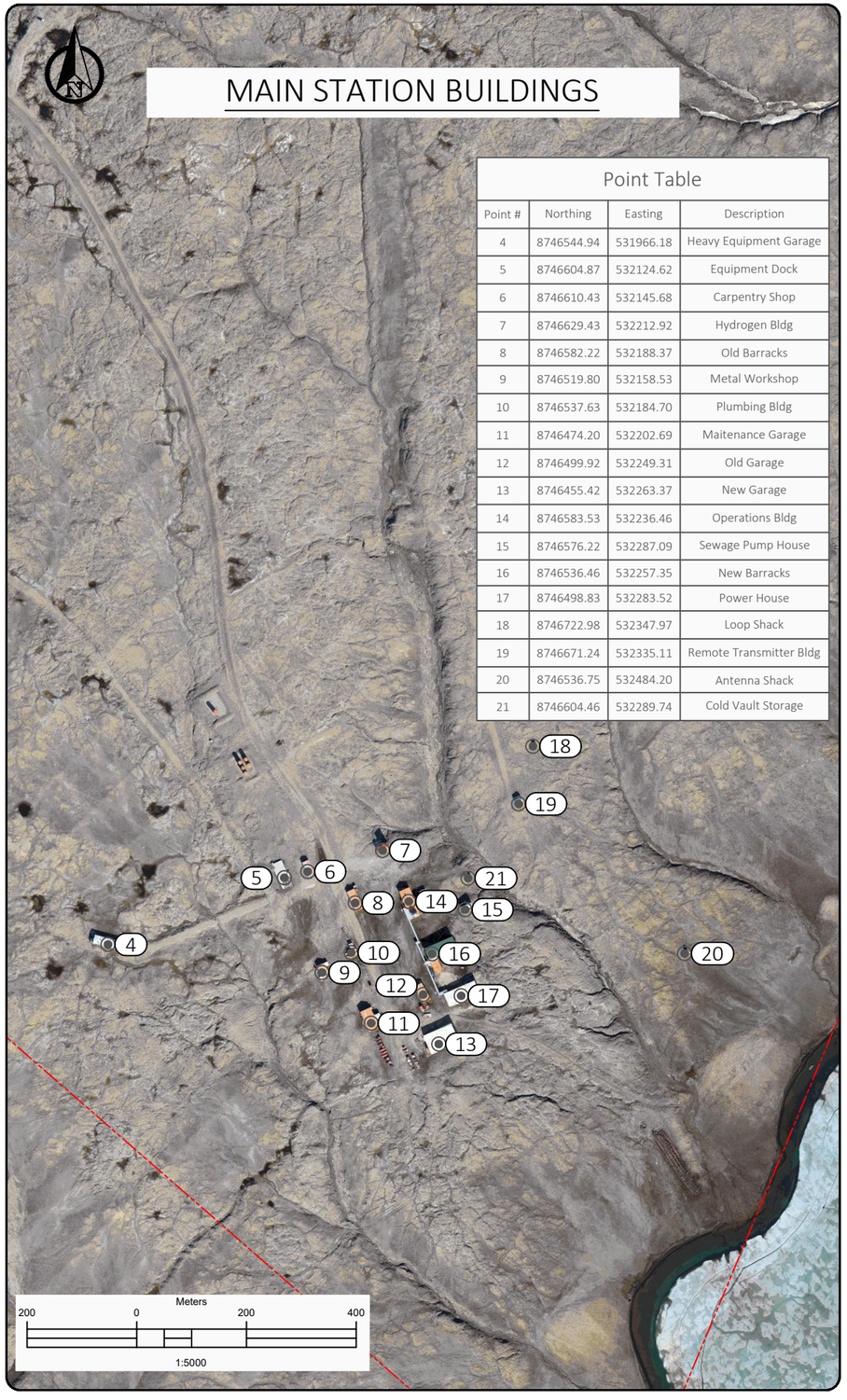
RUNWAY BUILDINGS



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

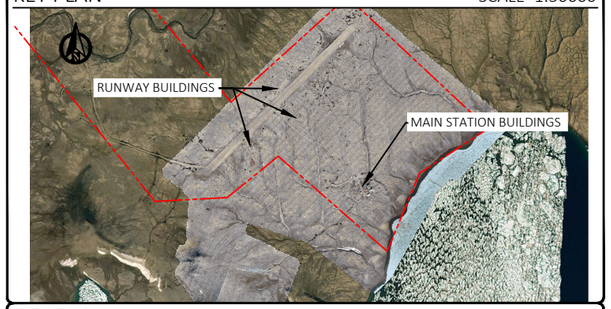


Point Table

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

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

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RANKIN INLET , NUNAVUT
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OTTAWA, ONTARIO
K1Y 0Y2
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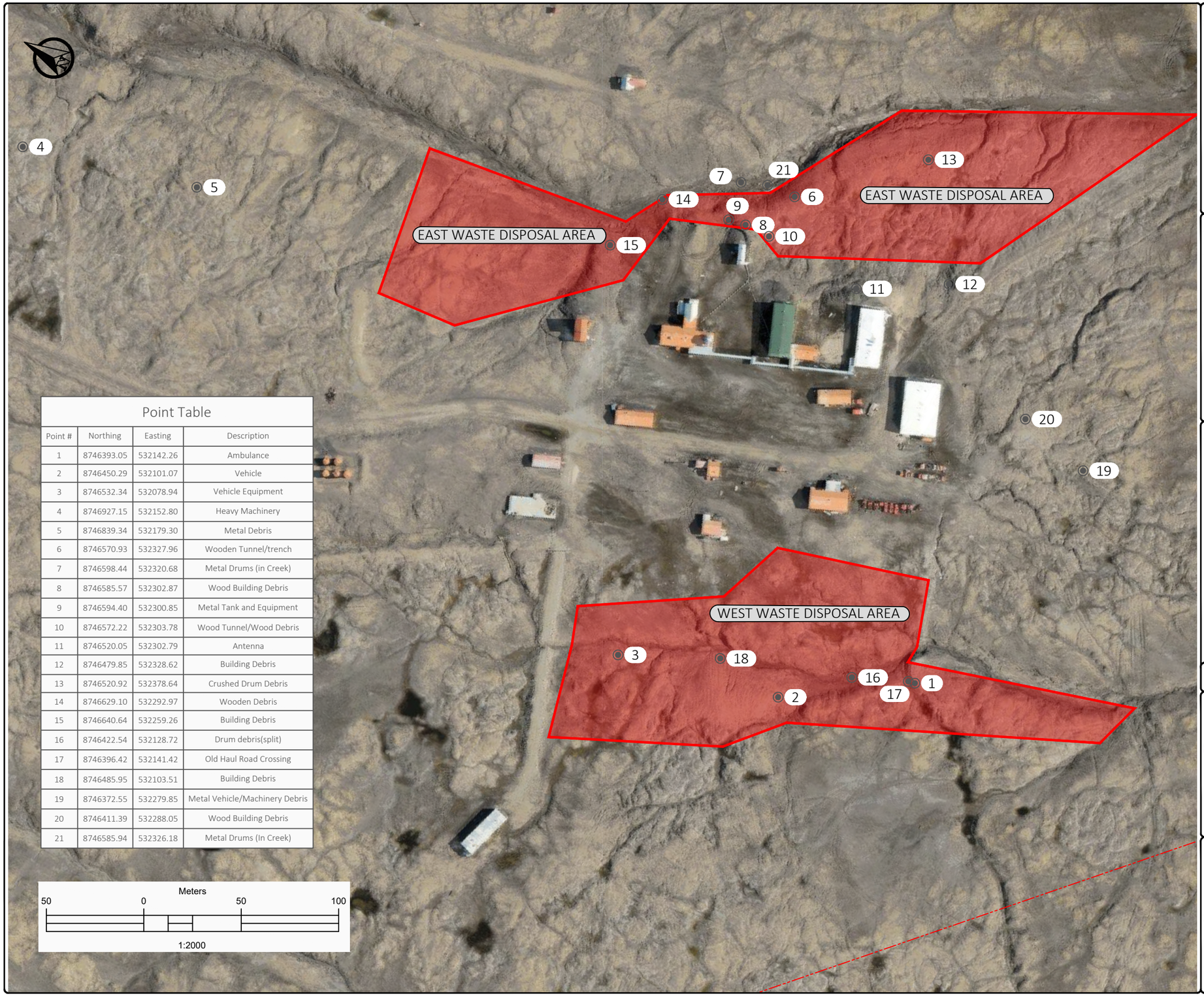
ISACHSEN HIGH ARCTIC WEATHER STATION

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



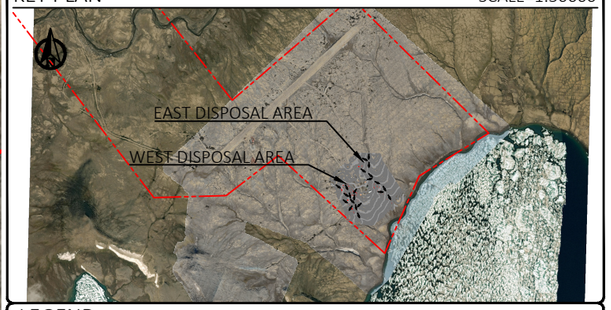
Point Table

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

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

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

outcome CONSULTANTS
151 HOLLAND AVE SUITE 200
OTTAWA, ONTARIO
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t:613.729.2402

ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

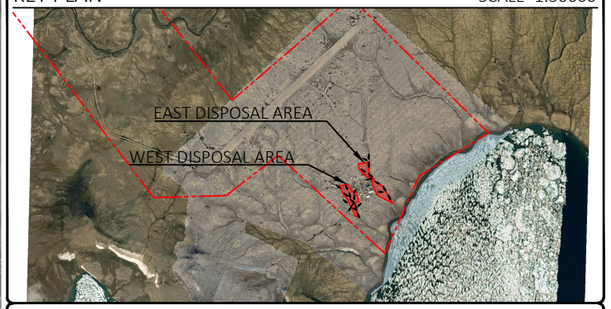
REMEDIAL ACTION PLAN- FIGURE 8

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

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

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RANKIN INLET , NUNAVUT
X0C 0G0
t:867.645.7533

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151 HOLLAND AVE SUITE 200
OTTAWA, ONTARIO
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ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN- FIGURE 9

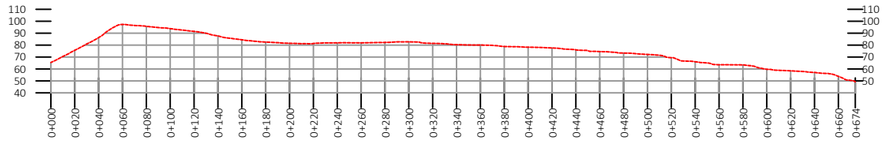
EXISTING CONDITIONS- WDA LOCATIONS, DRAINAGE AND TOPOGRAPHY

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

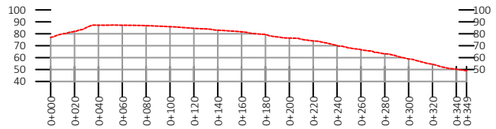
PROPOSED HAUL ROAD

AGGREGATE PROCESSING AREA

PROFILE VIEW OF PROPOSED BORROW SECTION A-A'



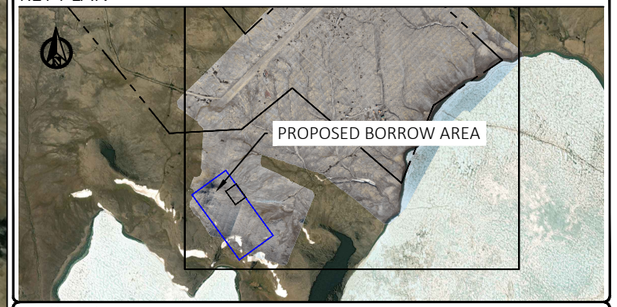
PROFILE VIEW OF PROPOSED BORROW SECTION B-B'



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

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

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RANKIN INLET , NUNAVUT
X0C 0G0
t:867.645.7533

outcome CONSULTANTS
151 HOLLAND AVE SUITE 200
OTTAWA, ONTARIO
K1Y 0Y2
t:613.729.2402

ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

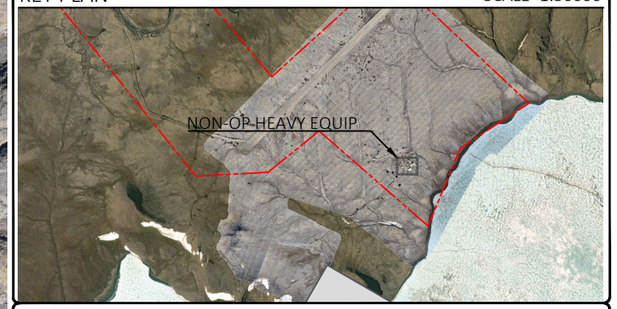
REMEDIAL ACTION PLAN- FIGURE 10

PROPOSED BORROW AREA AND FACILITIES

OUTCOME PROJECT NUMBER:	DRAWN BY:	SCALE:
P2023-16	J.MILLS	1:5000
CLIENT PROJECT NUMBER:	CHECKED BY:	PUBLISH DATE:
R.125553.001	C.SADLER	2025-03-03
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

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

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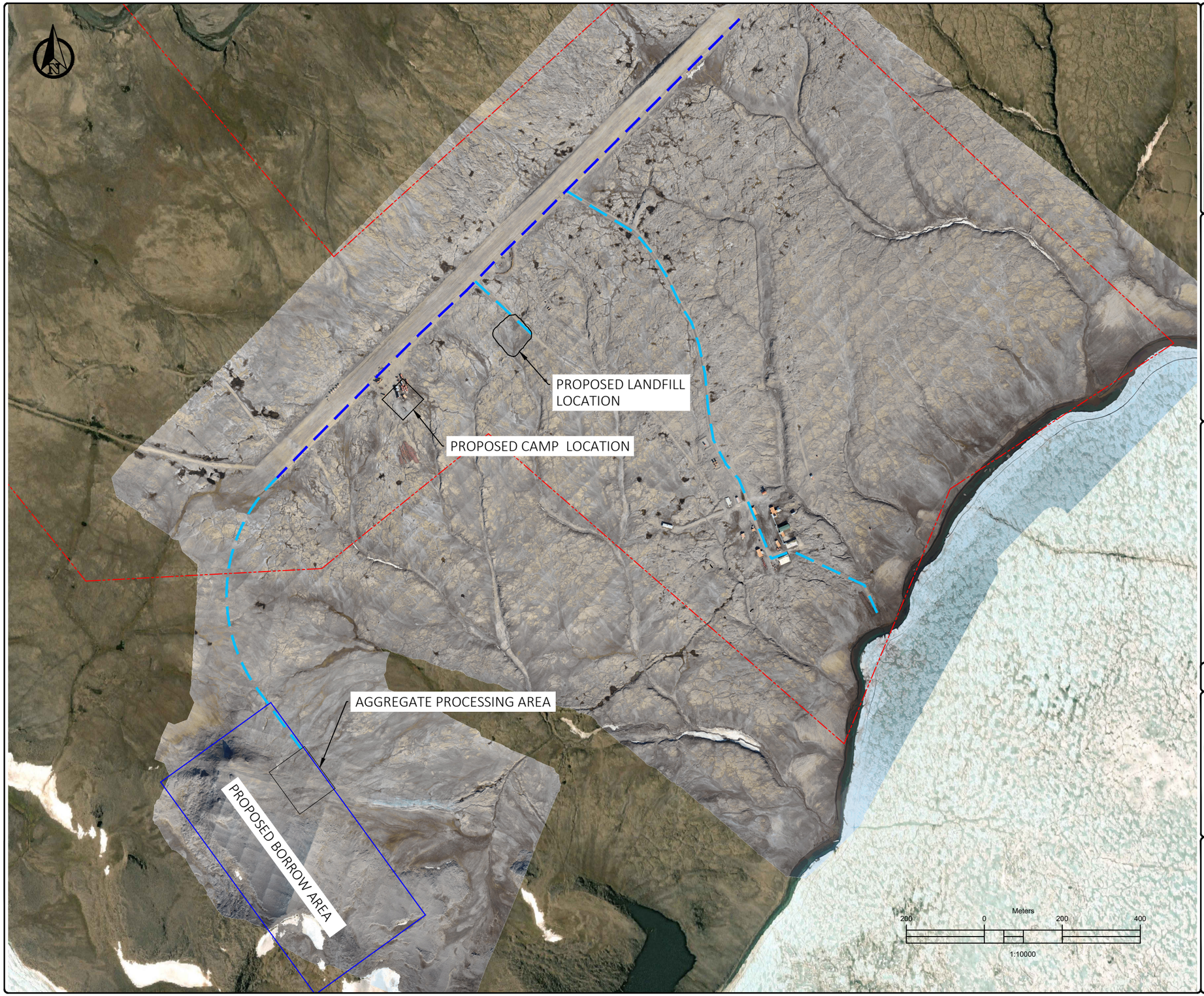
ISACHSEN HIGH ARCTIC WEATHER STATION

ELLEF RINGNESS ISLAND, NUNAVUT

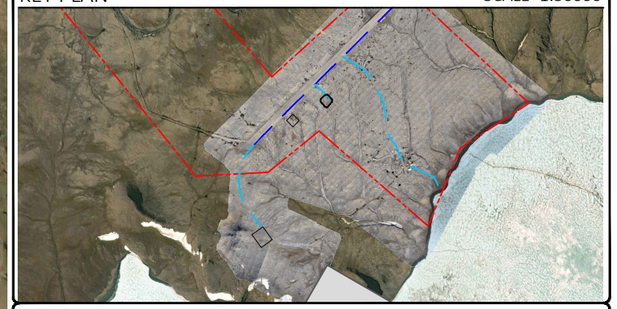
REMEDIAL ACTION PLAN- FIGURE 7

EXISTING CONDITIONS- LOCATION OF NON-OPERATIONAL HEAVY EQUIPMENT

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 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

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

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RANKIN INLET , NUNAVUT
X0C 0G0
t:867.645.7533

outcome CONSULTANTS
151 HOLLAND AVE SUITE 200
OTTAWA, ONTARIO
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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151 HOLLAND AVE SUITE 200
OTTAWA, ONTARIO
K1Y 0Y2
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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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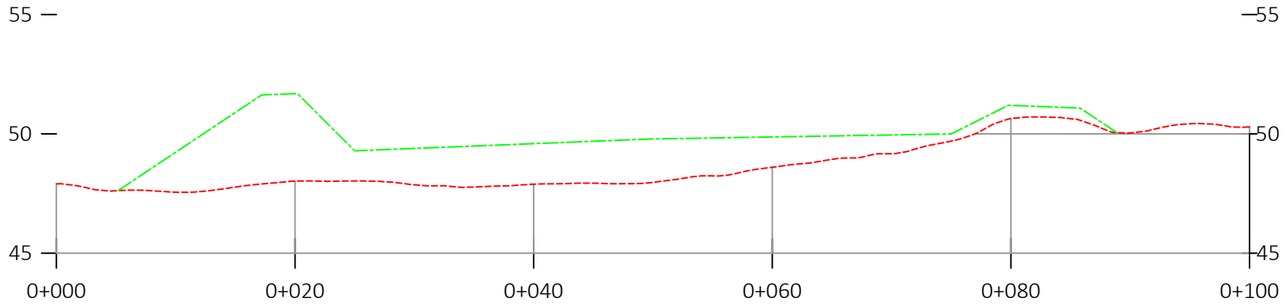
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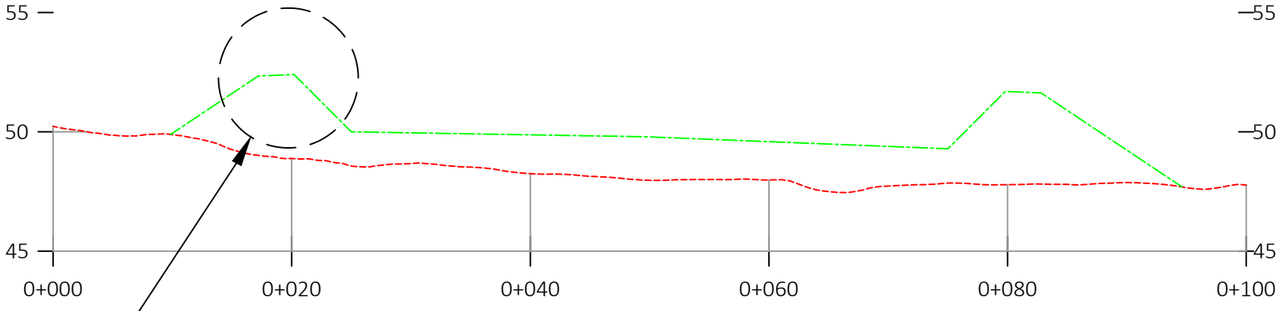
ISACHSEN HIGH ARCTIC WEATHER STATION
ELLEF RINGNESS ISLAND, NUNAVUT
REMEDIAL ACTION PLAN- FIGURE 13
PROPOSED LANDFILL- INTERIM GRADING PLAN (LANDFILL OPERATION)

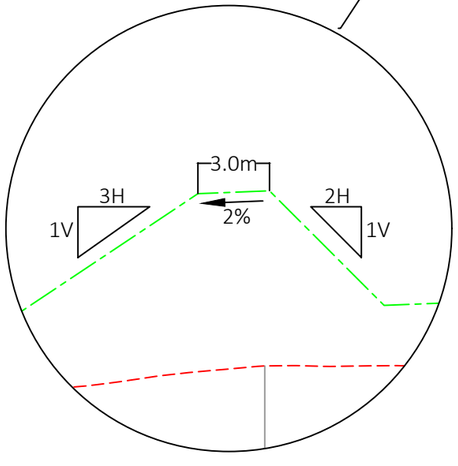
OUTCOME PROJECT NUMBER:	DRAWN BY:	SCALE:
P2023-16	J.MILLS	1:500
CLIENT PROJECT NUMBER:	CHECKED BY:	PUBLISH DATE:
R.125553.001	M.BILLOWITS	2025-03-05
DRAWING NAME:	SHEET NUMBER:	REV:
NP2023-16 PSPC LANDFILL_V4 FIGURE 13-1 ONLY OPERATIONS.dwg	FIGURE 13	00

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

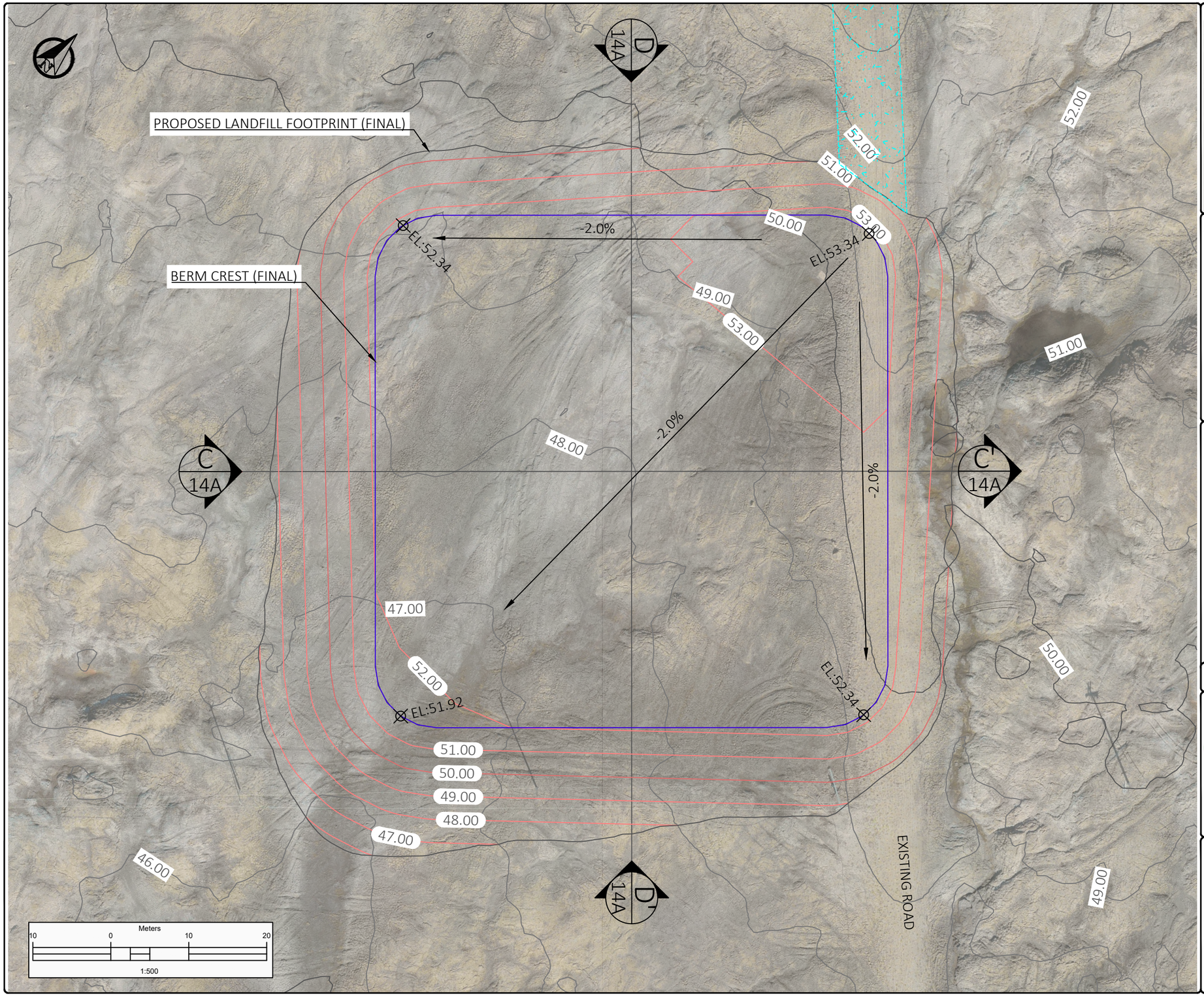
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11-1 MIVVIK AVE.
RANKIN INLET , NUNAVUT
X0C 0G0
t:867.645.7533

outcome CONSULTANTS
151 HOLLAND AVE SUITE 200
OTTAWA, ONTARIO
K1Y 0Y2
t:613.729.2402

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

outcome CONSULTANTS
151 HOLLAND AVE SUITE 200
OTTAWA, ONTARIO
K1Y 0Y2
t:613.729.2402

ISACHSEN HIGH ARCTIC WEATHER STATION

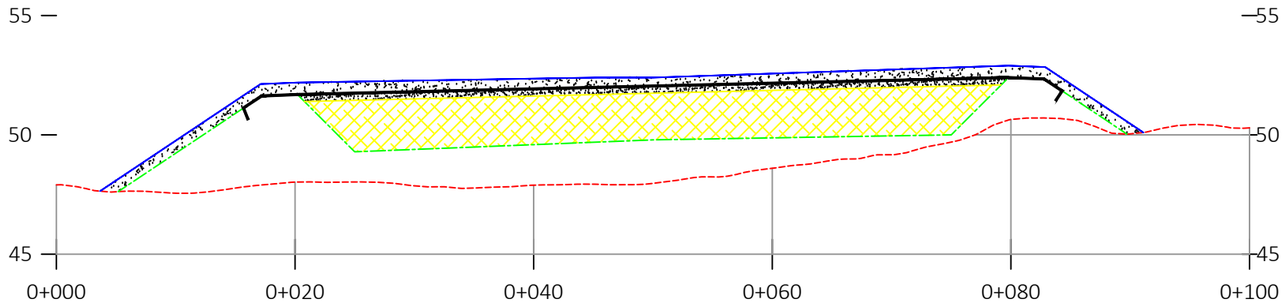
ELLIF RINGNESS ISLAND, NUNAVUT

REMEDIAL ACTION PLAN- FIGURE 14

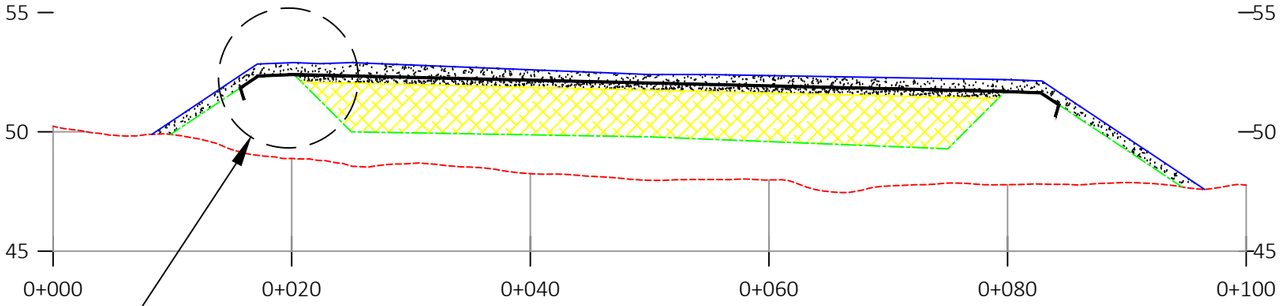
PROPOSED LANDFILL- FINAL DESIGN GRADING PLAN (LANDFILL CLOSURE)

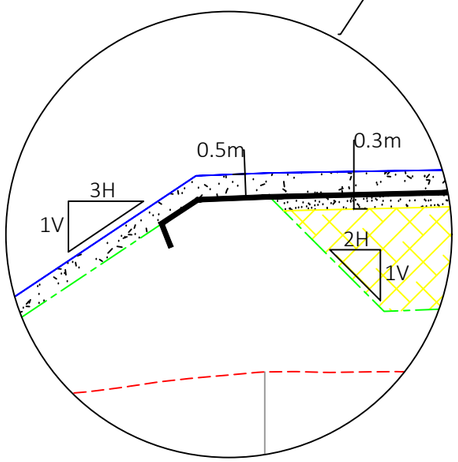
OUTCOME PROJECT NUMBER: P2023-16	DRAWN BY: J.MILLS	SCALE: 1:500
CLIENT PROJECT NUMBER: R.125553.001	CHECKED BY: M.BILLOWITS	PUBLISH DATE: 2025-03-04
DRAWING NAME: NP2023-16 PSPC LANDFILL_V4 FIGURE 14-1 ONLY.dwg	SHEET NUMBER: FIGURE 14	REV: 00

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

outcome CONSULTANTS
151 HOLLAND AVE SUITE 200
OTTAWA, ONTARIO
K1Y 0Y2
t:613.729.2402

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)

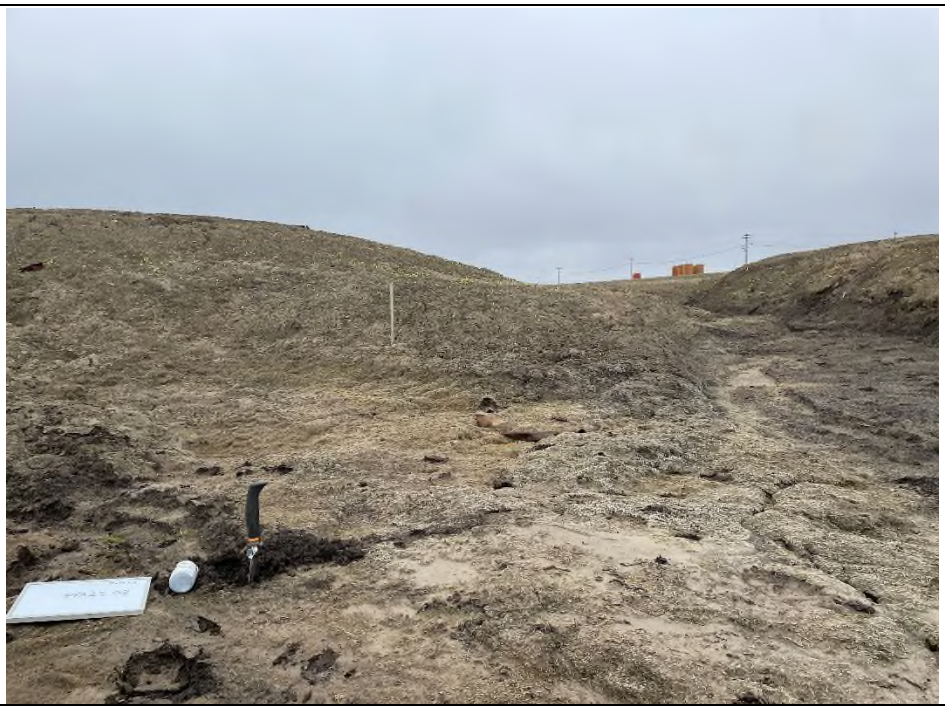


Photo 2: PFAs sampling at toe of AEC 1: West Gully Waste Disposal Area (WDA), view north. (July 20, 2023)

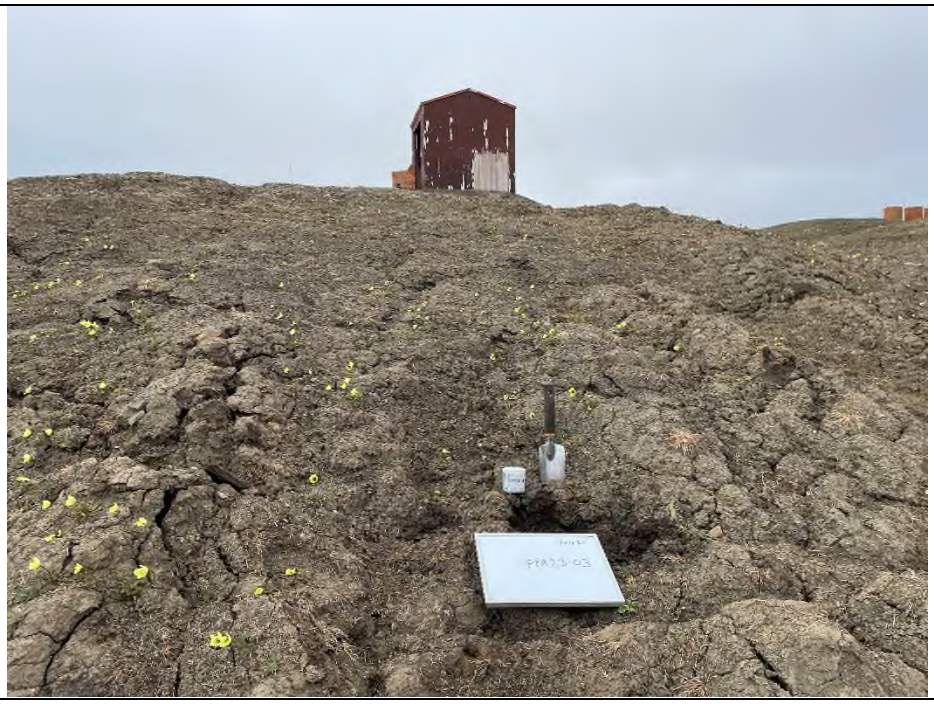


Photo 3: PFAs sampling in AEC 2: East Gully WDA, view west. (July 20, 2023)

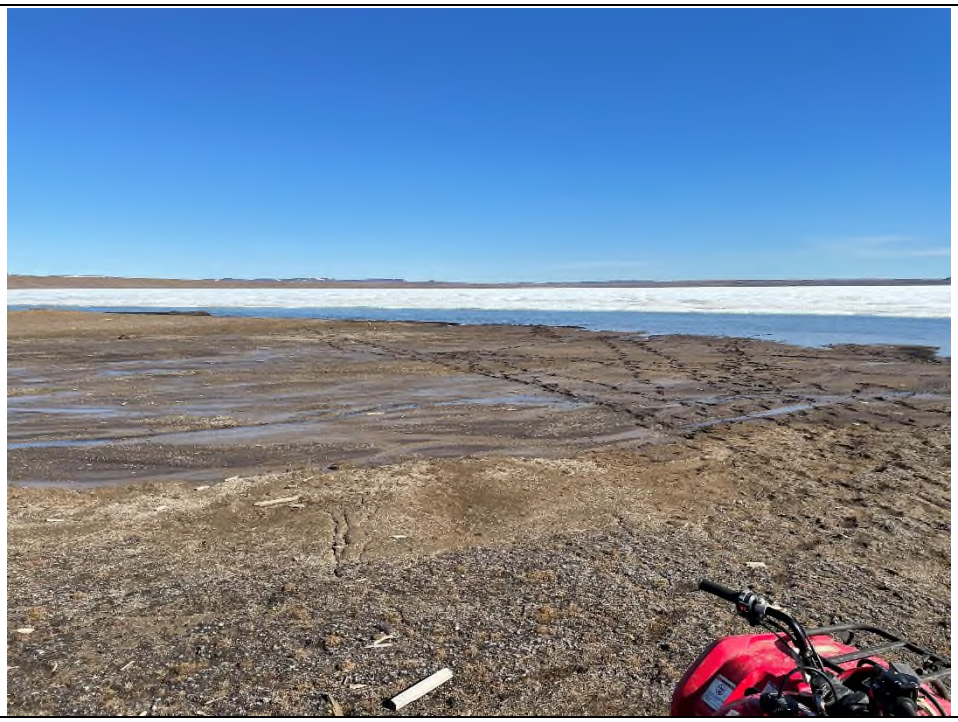


Photo 4: Sediment sampling at AEC 3 Shoreline Barrel Dump Delta, view southeast. (July 16, 2022)



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

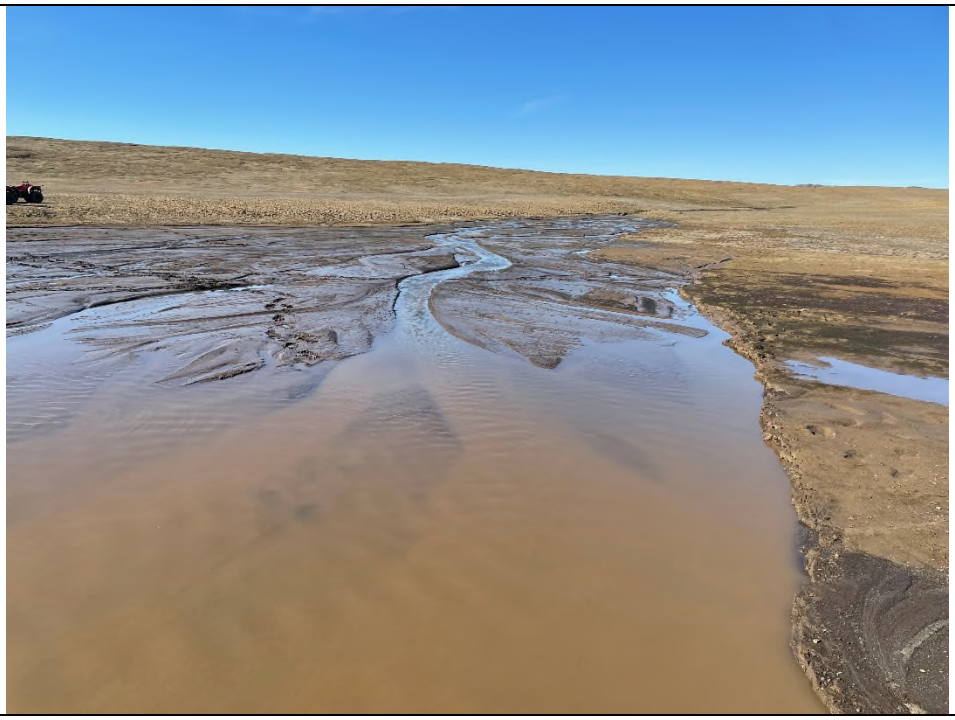


Photo 6: Sediment sampling at AEC 26 Shoreline East Delta, view north. (July 16, 2022)



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)

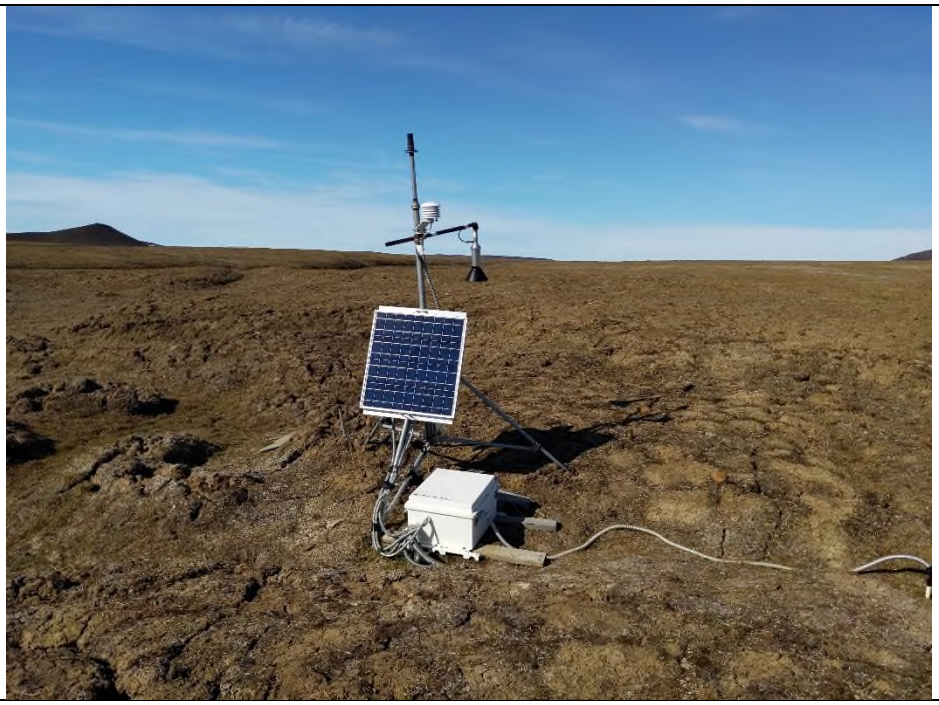


Photo 16: Existing Thermistor (operated by University of Alaska Fairbanks) discovered southwest of AEC 5 West Runway Drum Dump, view north (July 18, 2023)

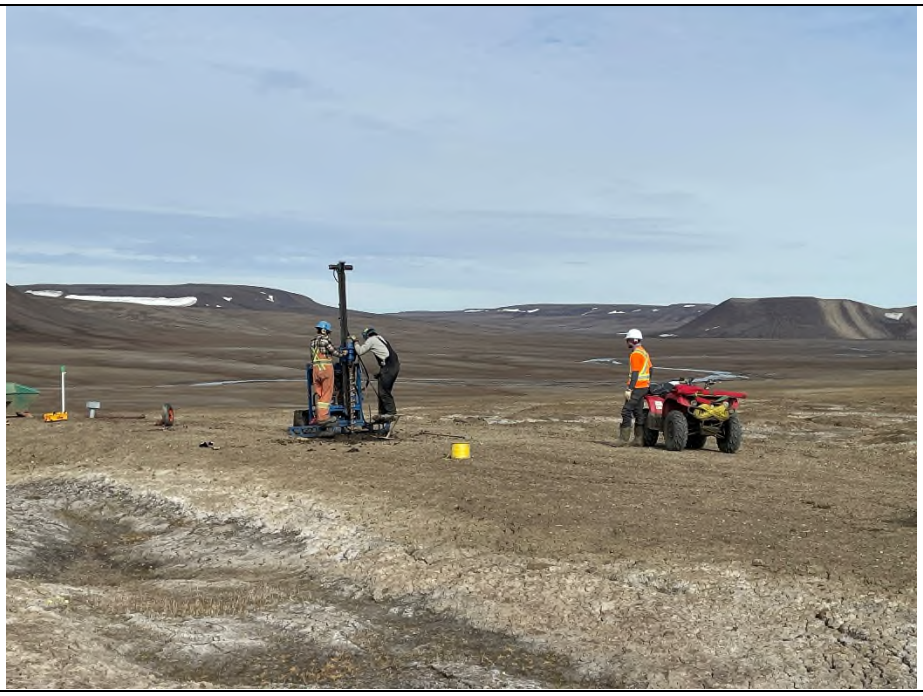


Photo 17: Re-drill of Thermistor 1 (THERM23-01B) located north of Runway, view north (July 22, 2023)



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)

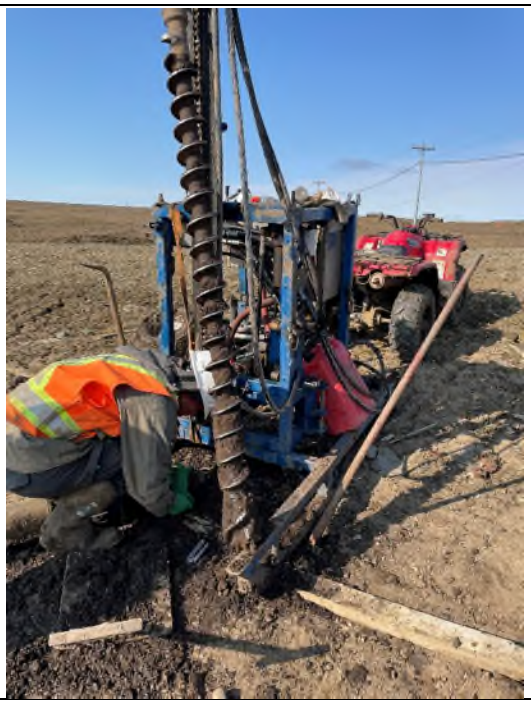




Photo 30: Drilling of THERM23-06 east of AEC 9: Heavy Equipment Garage, view north. (July 25, 2023)

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

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1.1 Time, Date and Location 2

1.2 Publicizing the Event 3

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1.4 Event Details 4

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

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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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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.

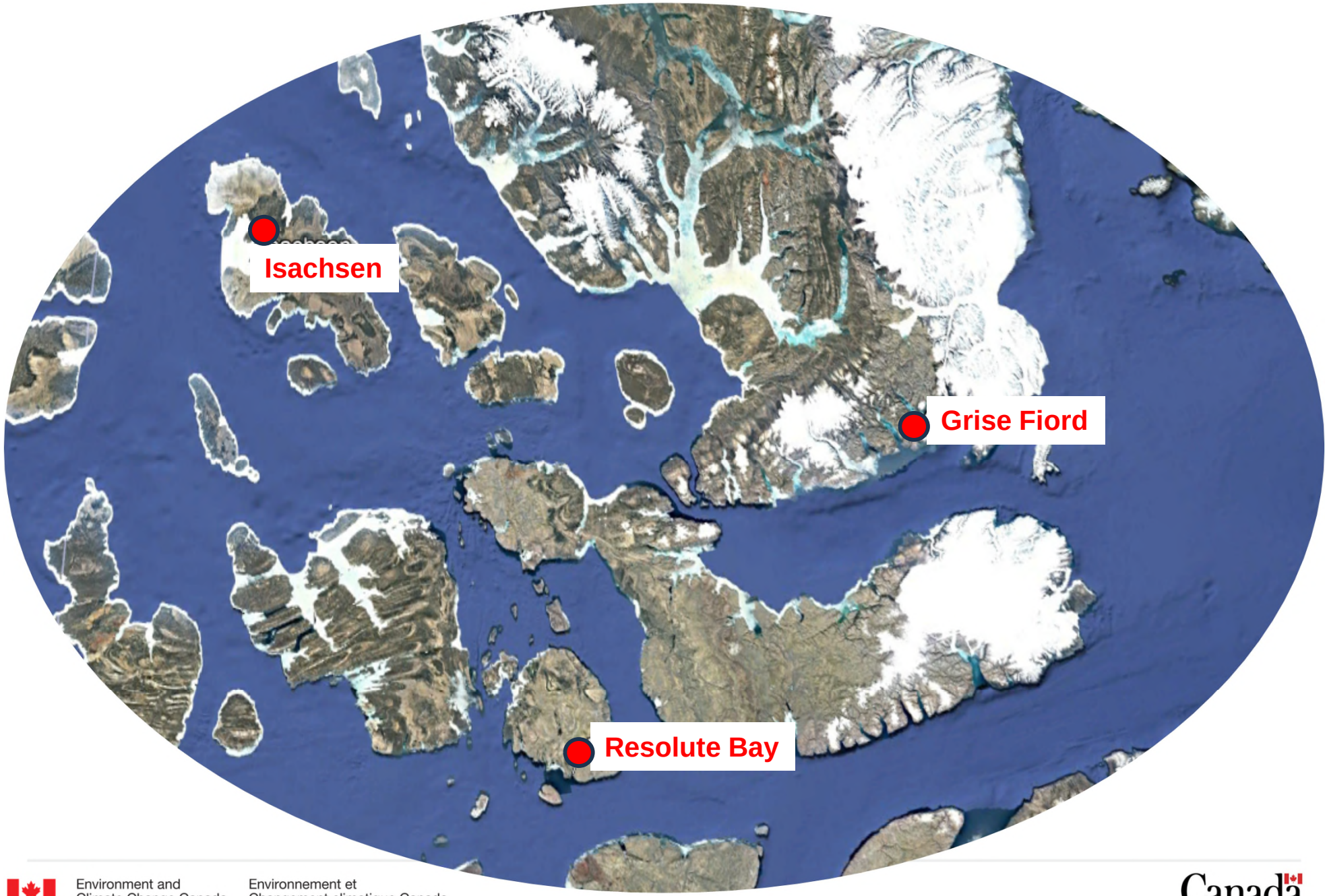


Outline

- 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

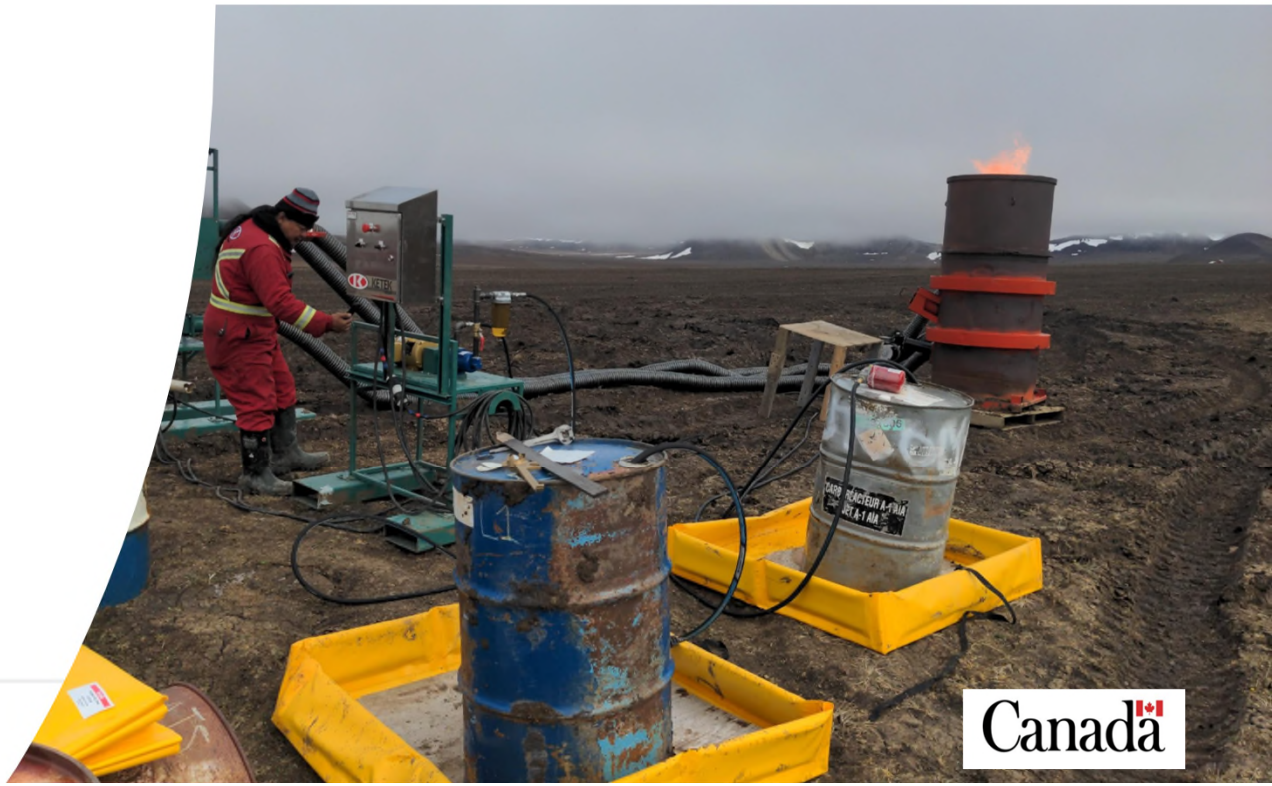
Note: The remedial options presented within this presentation are current as of today but could change or evolve prior to execution

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**

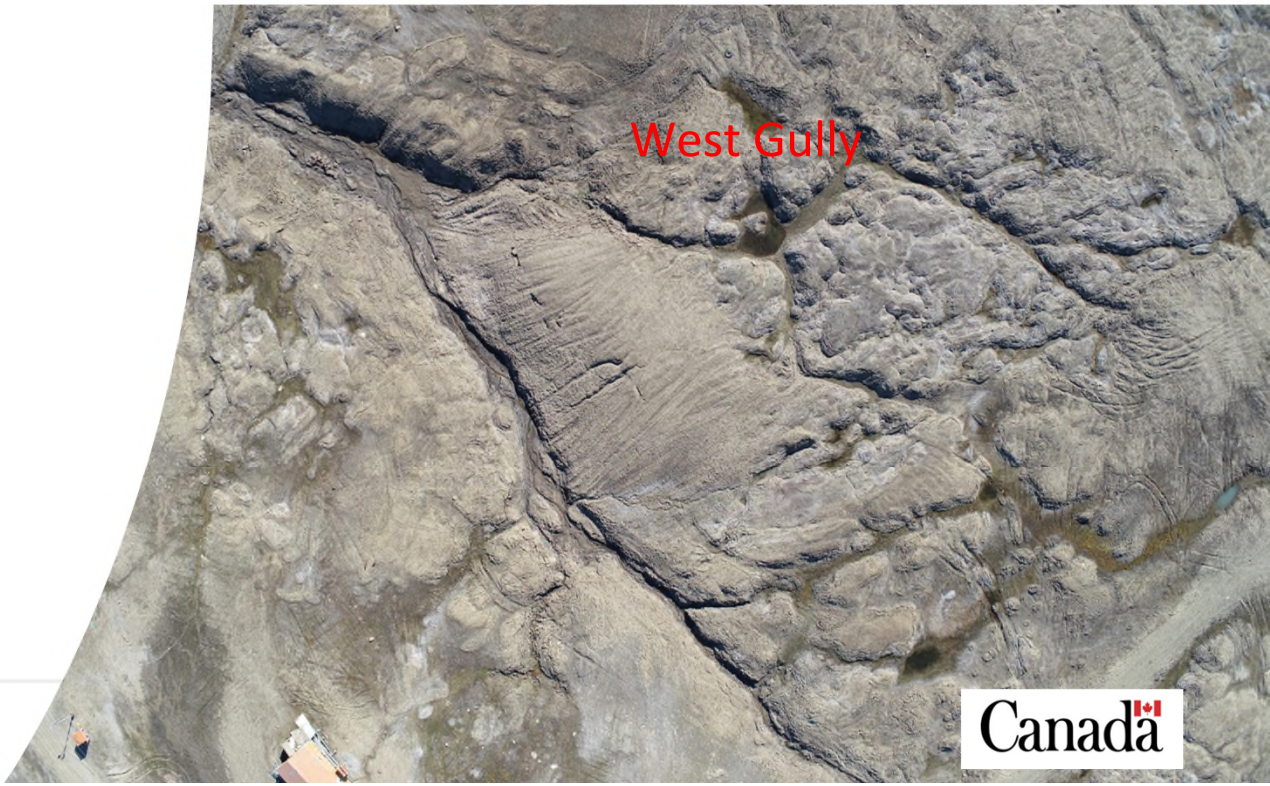




Waste Disposal Areas (WDAs)

- 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.**

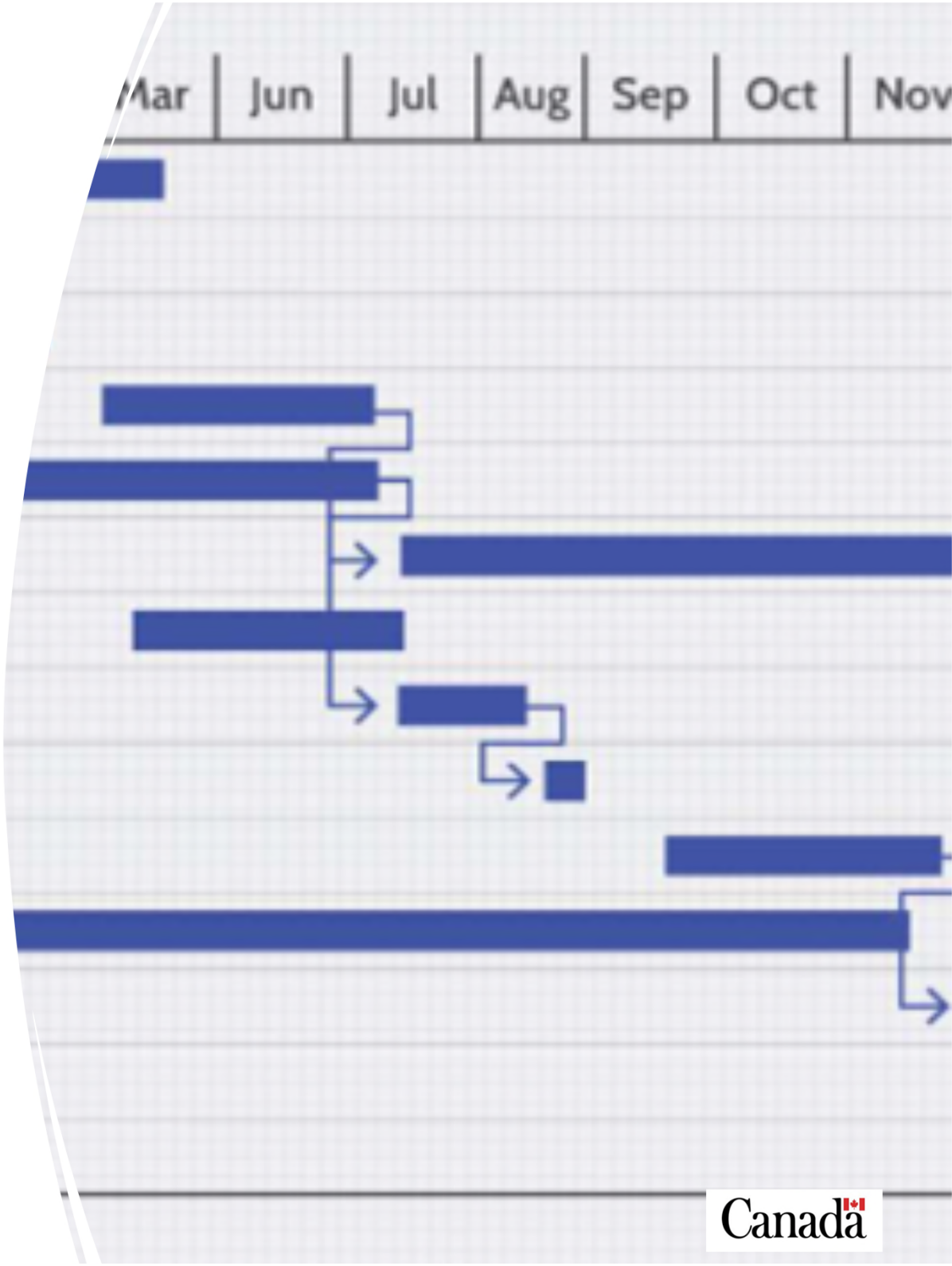






Remedial Timelines

- 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)
Telephone: (613) 981-8652
Email: owen.wade@ec.gc.ca

Michael Brownlee: Project Manager - Assessment (PSPC)
Telephone: (780) 720-7748
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)

ᐊᑐᕈᓐᓇᖅᑎᑕᐅᓂᖓᓄᑦ ᓴᓗᒪᓚᖅᓴᖅᑕᐅᓂᖓᓄᓗ



ᖃᐅᔨᓴᕐᑐᖅ ᒪᓂᐊᓕᒃ 29, 2025

Environment and Climate Change Canada
Environnement et Changement climatique Canada

Canada

ᓇᓗᓇᐃᓴᐅᑎᑦ

- 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.

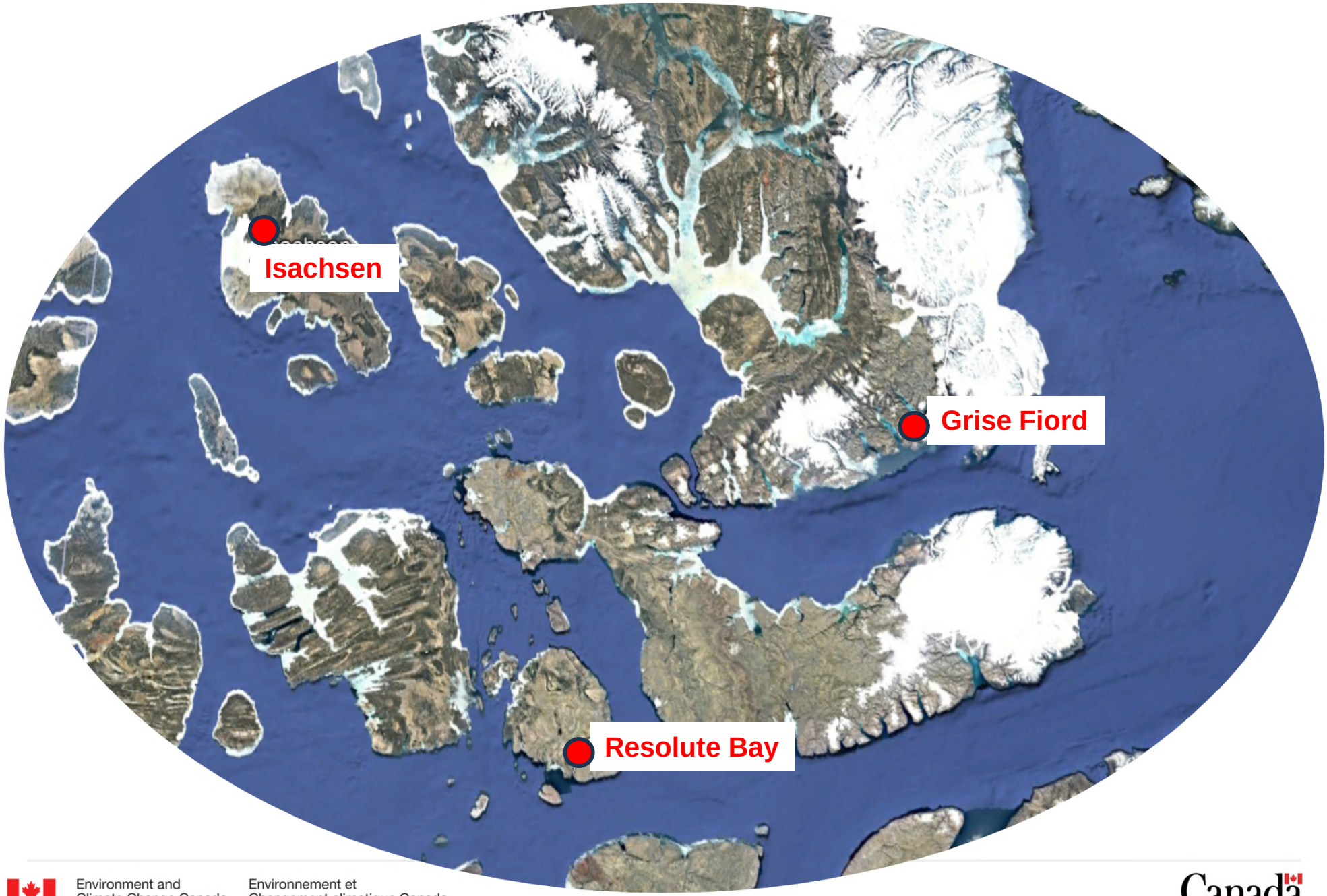


ᓇᓗᓇᐃᔨᐅᑎᑦ

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



ᐃᓂᒋᔭᐅᓪᓚᒃ ᐃᓂᓐᓇᒃ



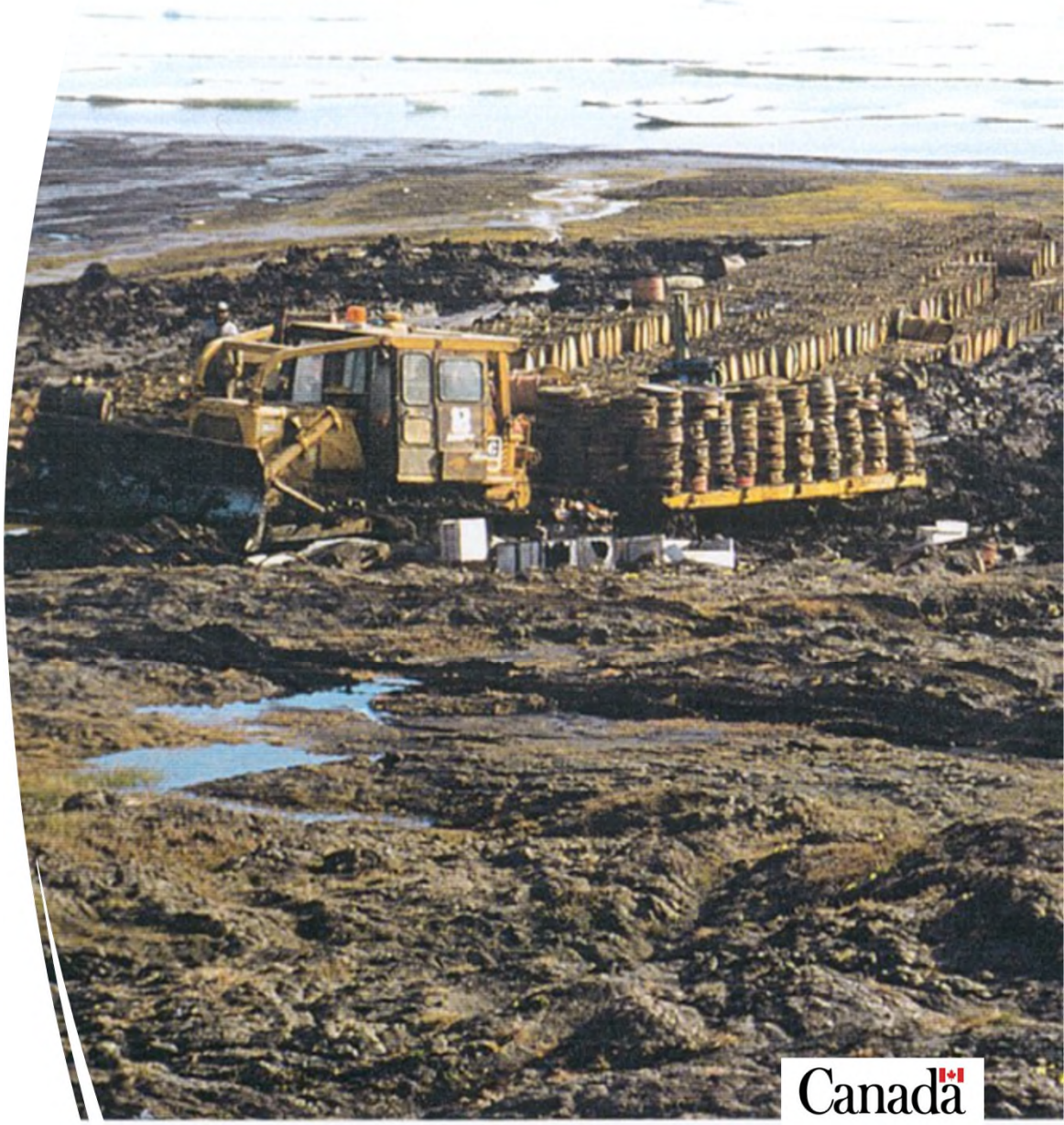
ᐱᐅᓯᓗᕆᐅᓂᓪᓗᑦ Isachsen-Γ: ᐃᓂΓᖏ ᐊᐅᓪᑎᐟᕃᖏᓂᒃ

- 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





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

ᖅᐅᐅᒪᒋᑦ: ᐃᖅᑭᒋᐊᕐᑎᑕᖅᑎᑦ ᓴᖅᑭᑕᐅᔨᑦ ᑕᕐᓂᓂ ᐅᓂᒃᑲᐅᓯᐅᔨᒋᐊᕐ ᐃᓪᓓᒪᑦ ᑎᑭᐅᓗᔪ ᑭᓯᐊᓂ ᐊᓯᐅᐸᑦᓇᖖᓗᒃ ᐅᕐᓂᓚᓪᓂᑦ ᐊᓯᐅᐸᑦᓇᖖᓗᒃ ᐊᑐᓕᖅᑎᑕᐅᓕᐅᖅᓯᓂᖅᓂᒃ

Canada

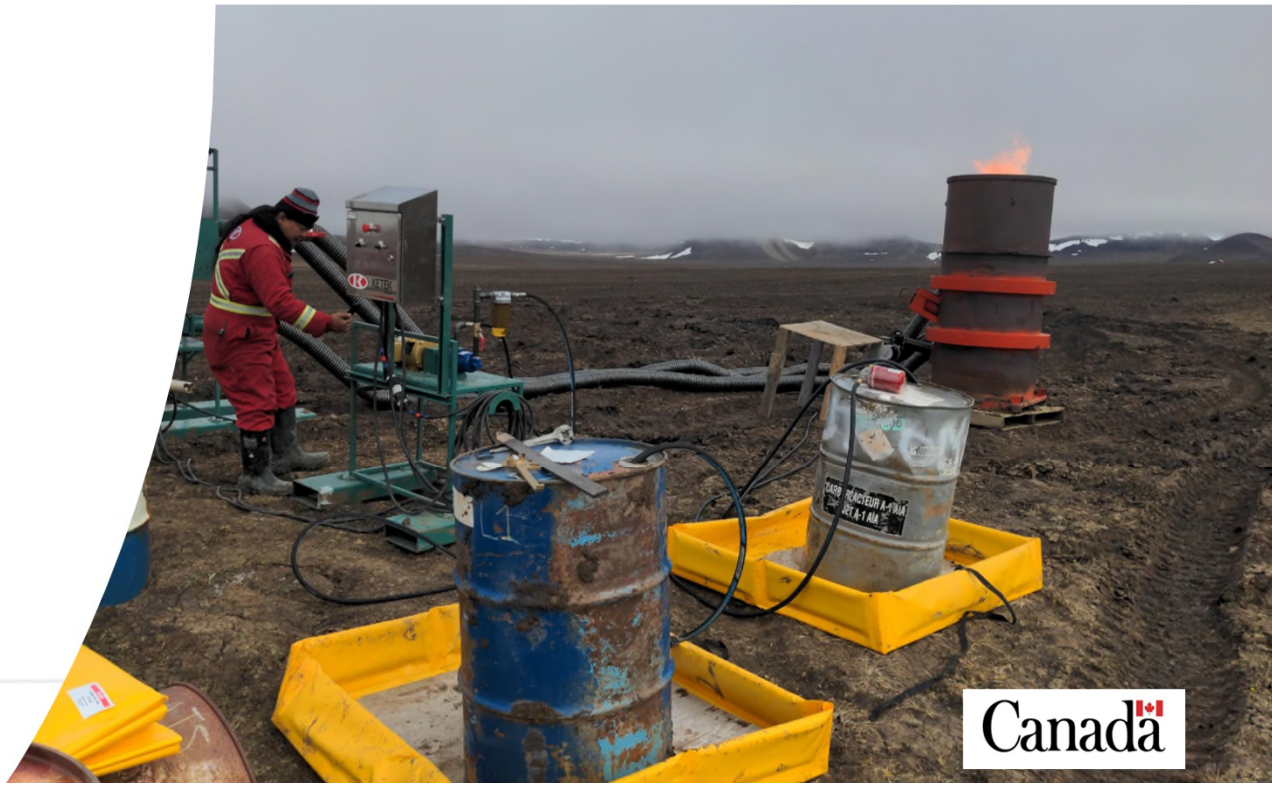
ᐃᒪᓐᓕ ᐊᖏᑕᑯᓕ

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

ᐊᑐᖅᑕᐅᔪᒪᓇᔨᖅᑐᖅ:

- ᐃᑯᐊᓕᑎᑦᑎᓂᖅ



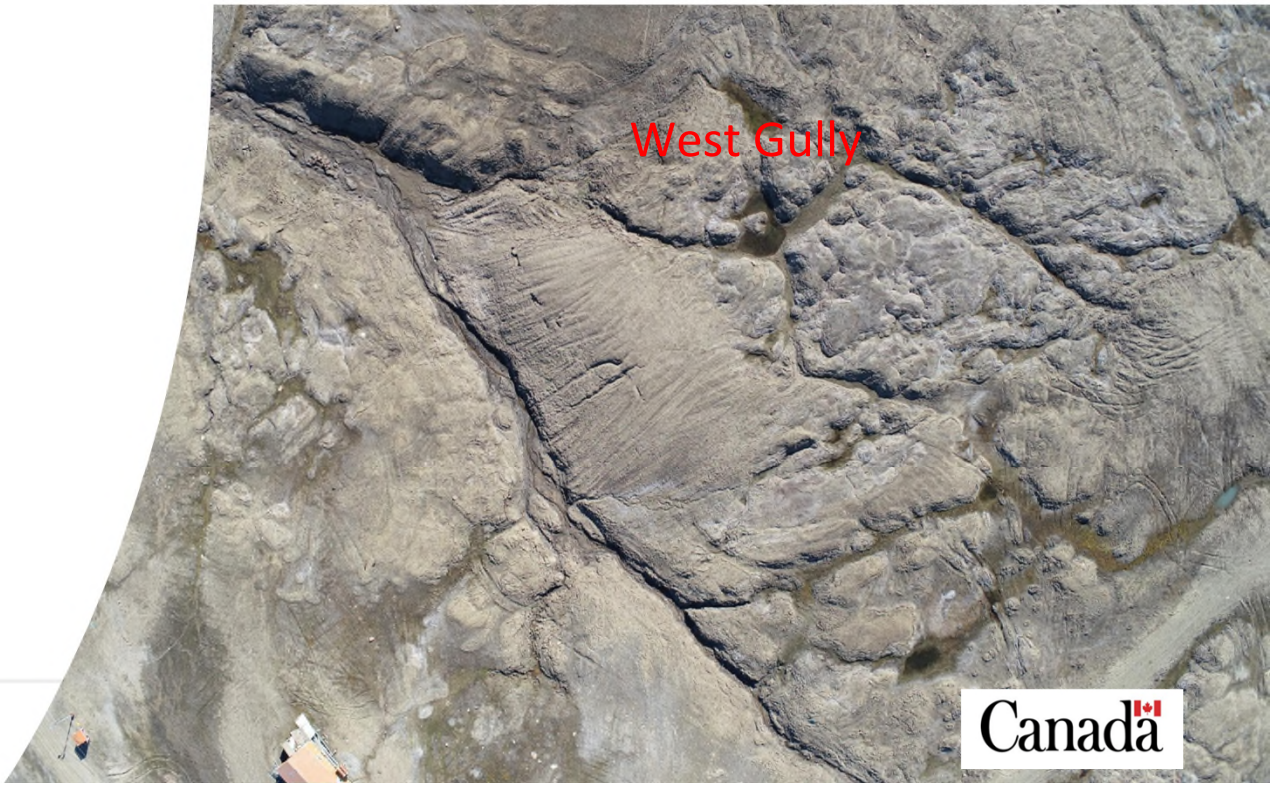


ᐊᖅᑕᖁᕕᐊᓗᐃᑦ (WDAs)

- 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 ᐱᖅᐄᑎᒋᐅᔾᔨᑦ
ᖁᐅᔨᓴᖅᑕᐅᓂᖅᓯᑦ ᐊᒃᑕᖅᑕᐅᔨᓪᓗ ᖁᓄᖅ
ᐊᖅᑎᑎᒋᓂᖅᓯᓄᑦ ᓄᓴᖅᑕᐅᓕᕐᔨᑦ
ᐱᔾᓱᖅᑕᐅᓕᒫᖅᓴᑦ 22-ᓄᑦ
ᐃᒡᓗᖅᓯᐊᓄᑦ/ᓇᐸᖅᑎᖅᑕᐅᓕᕐᓄᑦ

ᐊᑐᖅᑕᐅᓕᓇᔾᖅᑐᖅ:
ᐃᓂᒋᔾᐅᖅᑕᑐᒥ ᐃᒋᑦᑎᓂᖅ ᖃᐅᐊᖅᓴᖅᓇᖅᑐᓂᒃ ᐊᑐᓴᒃᐱᐅᔨᓵᓄᖅᑐᓂᒃ ᐃᓂᒥ ᐱᐅᓕᓗᑎᒃ ᖃᐅᐊᖅᓴᖅᓇᖅᑐᓂᒃ ᐊᑐᓴᒃᐱᐅᔨᓵᓄᖅᑐᓂᒃ ᓄᑦᒥ ᐃᓂᒥ ᐱᓇᔾᐅᔨᓕᕐᓄᑦ ᐊᑐᓴᒃᐱᐅᔨᓵᓄᖅᑐᓄᑦ ᐃᓂᒥ.





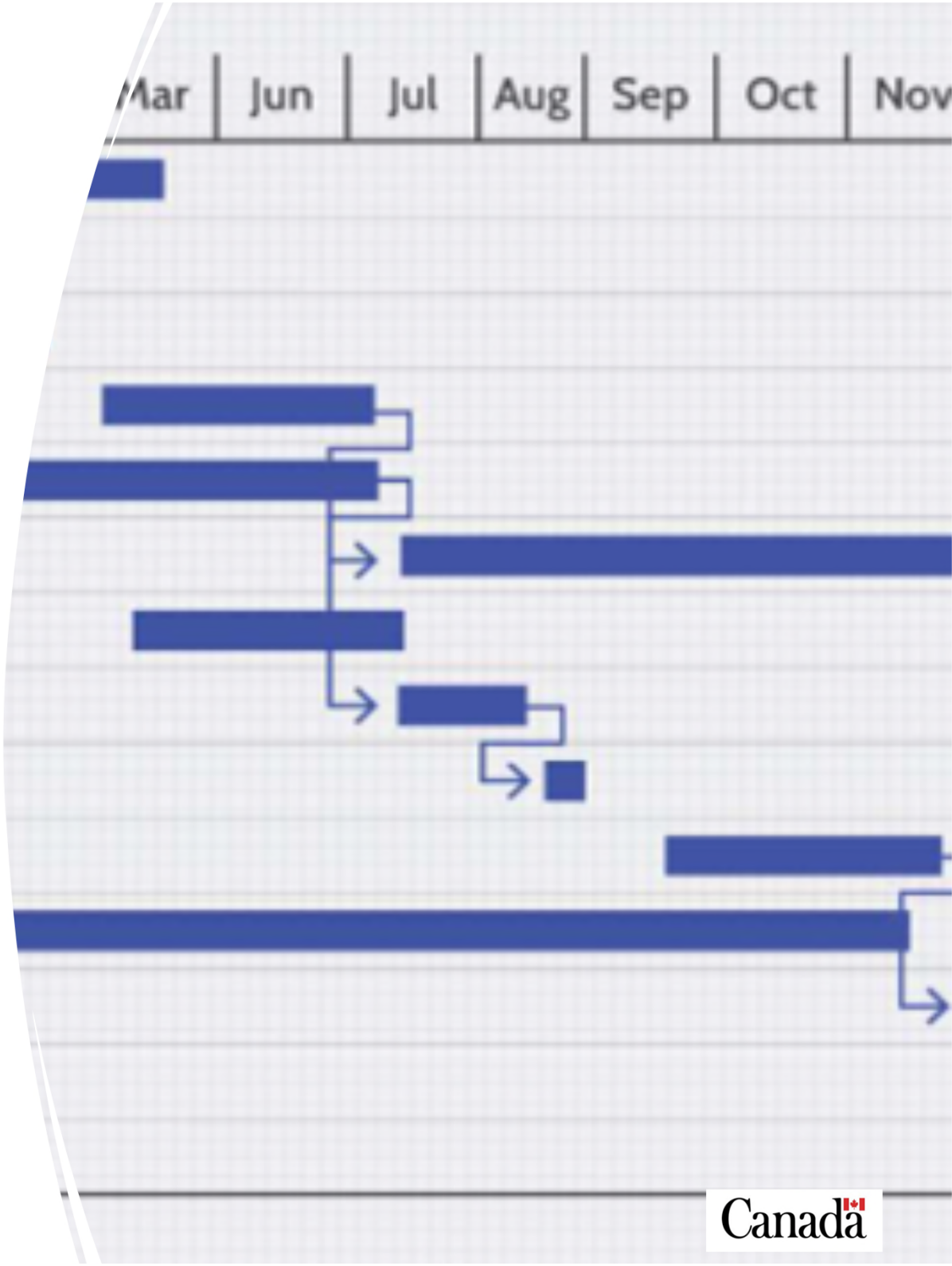


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ᐊᖏᑦᑭᓱᓕᕆᓂᖅ ᐱᐅᖃᖅᖢᓂᒃ

- 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!



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ᐅᖃᓗᒃ: (613) 981-8652
ᐃᕐᓱᓴᓇᖅᑕᐅᑦ: owen.wade@ec.gc.ca

ᒪᐃᔪᓐ ᓴᕿᐅᓄᓕ: ᐱᓕᕆᐊᖏᓄᑦ ᐊᐅᓚᑦᑎᔨ - ᖃᐅᔨᓴᕐᓂᕐᒧᑦ (PSPC)
ᐅᖃᓗᒃ: (780) 720-7748
ᐃᕐᓱᓴᓇᖅᑕᐅᑦ: michael.brownlee@tpsgc-pwgsc.gc.ca

ᕿᐃᓴᓄ ᓴᓇᕕᖅ ᐱᓕᕆᐊᓄᑦ ᐊᐅᓚᑦᑎᔨ - ᐊᑲᑭᑐᐊᑭᑎᓂᓄᑦ (PSPC)
ᐅᖃᓗᒃ: (905) 691-1574
ᐃᕐᓱᓴᓇᖅᑕᐅᑦ: ryan.breivik@tpsgc-pwgsc.gc.ca

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

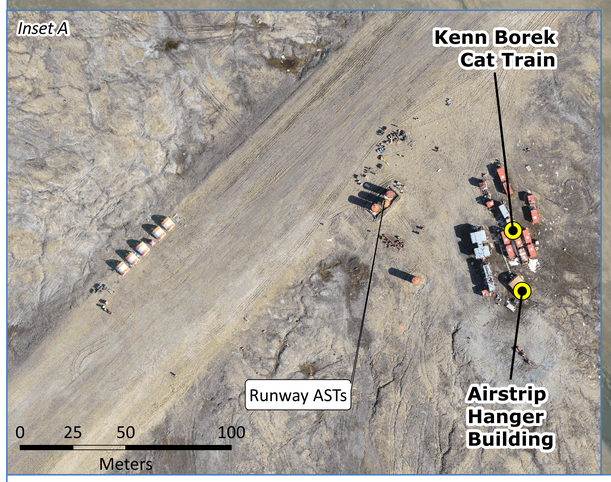
Runway Drum Cache

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

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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

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Contact Information:

Owen Wade: Contaminated Sites Officer: Isachsen (ECCC)

Telephone: (613) 981-8652

Email: owen.wade@ec.gc.ca

Michael Brownlee: Project Manager - Assessment (PSPC)

Telephone: (780) 720-7748

Email: michael.brownlee@tpsgc-pwgsc.gc.ca

Ryan Breivik Project Manager - Remediation (PSPC)

Telephone: (905) 691-1574

Email: ryan.breivik@tpsgc-pwgsc.gc.ca

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

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ᐅᖃᓗᓕᒃ: (613) 981-8652

ᐃᖃᓗᐊᖅᑕᐅᑦ: owen.wade@ec.gc.ca

ᒪᐃdᑦ >ᕎᐅᓪᓕ: ᐱᓕᕆᐊᒃᓴᓂ ᐊᐅᓪᓕᕐᕋᔨ - ᖃᐅᔨᓴᖏᓐᓇᓕᑦ (PSPC)

ᐅᖃᓗᓕᒃ: (780) 720-7748

ᐃᖃᓗᐊᖅᑕᐅᑦ: michael.brownlee@tpsgc-pwgsc.gc.ca

ᖃᐃᒪᓪ >ᓕᓚᒃ ᐱᓕᕆᐊᓂᓂ ᐊᐅᓪᓕᕐᕋᔨ - ᐋᖅᑭᒋᐊᕈᑎᓂᓂ (PSPC)

ᐅᖃᓗᓕᒃ: (905) 691-1574

ᐃᖃᓗᐊᖅᑕᐅᑦ: ryan.breivik@tpsgc-pwgsc.gc.ca

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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).

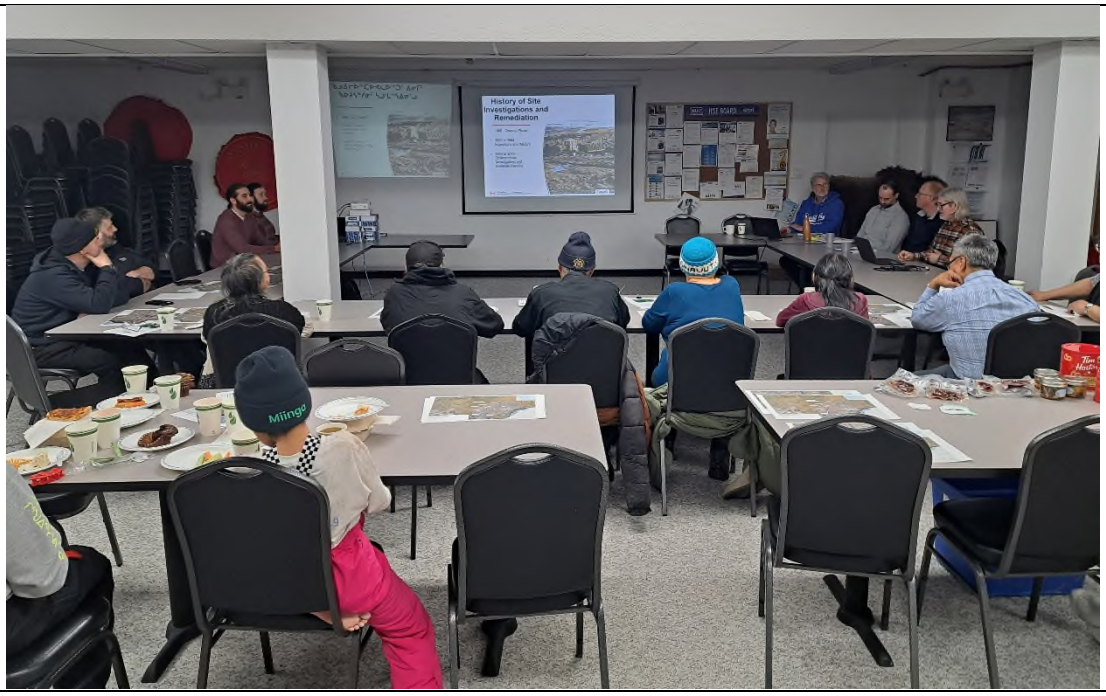


Photo 4: Presentation in progress (January 29, 2025).



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).

Management Plan

Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut (Kuukyoak, 2026)

KUUKYOAK

NUNAVUT IMPACT REVIEW BOARD (NIRB)

Waste Management Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut

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

Sept 2026

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1.0 Introduction

1.1 Key Information

This management plan applies to the operations as part of remediation work being carried out at the Isachsen High Arctic Weather Station (HAWS) Remediation Project (the Project) by Environment and Climate Change Canada (ECCC), and their contractors. This Waste Management Plan (Plan) is being submitted to support the Nunavut Impact Review Board (NIRB) review process. The contracting authority for this project is Public Services and Procurement Canada (PSPC). This current version of the Plan is conceptual in nature, and a more comprehensive plan will be submitted by the successful Remediation Contractor with specific means and methods. This current plan is considered as the minimum standard that submittals will be measured against.

Table 1 provides key information relating to the project.

Table 1. Key Project Information

Project Name and Location	Isachsen High Arctic Weather Station (HAWS) Remediation Project (the Project) 78° 46’ 40” N, 103° 31’ 40” W
Federal Department	Environment and Climate Change Canada
Contact	Owen Wade Tel: 613-981-8652 owen.wade@ec.gc.ca
Project Office Location	351 St. Joseph Boulevard, 18th Floor, Gatineau, QC K1A 0H3
Contractor	TBC
Contractor Contact Information	TBC
Contractor Address	TBC

1.2 Purpose and Scope

The purpose of this Plan is to guide the waste management activities for the Project. The waste will be generated through two general streams: 1) existing legacy waste from the operation of the weather station;

and 2) waste generated from remediation activities. It is intended to be the minimum standard for waste management that Kuukyoak requires of itself and its contractors for the duration of the project.

This Plan will be presented to all staff during their on-site orientation sessions. During the worker orientation seminar, training sessions will be scheduled to ensure employees understand their role within the waste management strategy on-site.

The primary objective of the Project is to mitigate hazards and remediate the existing legacy waste at the site.

1.3 Site Description

The Isachsen HAWS property (Site) is within the Directory of Federal Real Property (DFRP) land reserve (DFRP # 075272) which has a total area of approximately 450 hectares (ha). The Site is centered at a latitude of 78 degrees 46 minutes 40 seconds N and longitude of 103 degrees 31 minutes 40 seconds W facing Louise Bay, on the west-facing side of Ellef Ringnes Island, NU. The Site is occupied by approximately 22 permanent structures with associated infrastructure, equipment, and supplies. Other features previously identified at the Site, in addition to the 22 structures, include a 1,500-metre-long runway, former water and sewage infrastructure, fuel storage and distribution facilities, power generation equipment, two on-site waste disposal areas (WDAs), fuels tanks, thousands of empty/partially empty drums, other abandoned equipment, and debris.

Originally established in 1947 as one of five joint Canadian–American High Arctic Weather Stations, the Site supported meteorological monitoring, including upper-atmosphere observations using weather balloons. Operations transitioned fully to Canada in 1972 and continued until the station was decommissioned in 1978. Since then, the site has operated as an automated weather station and has intermittently supported scientific research and training activities. Due to its extreme remoteness, access has been almost exclusively by air.

1.4 Project Description

The Project is expected to span until 2030. A summary of the Project related activities is provided in the below:

- Mobilization of personnel, equipment, materials and support facilities, including fuel;
- Collection of borrow material (aggregate) to produce airstrip upgrades, road upgrades, construct a new engineered on-site landfill, cap the existing waste disposal areas, construct a camp pad and temporary waste storage area, and general site re-grading.
- Construction of a temporary accommodations camp;
- Construction of a new engineered landfill designed to accommodate the existing waste on site.
- Demolition of structures and buildings including removal and management of hazardous materials;
- Collection, cleaning and crushing of barrels;

- Collection and sorting of debris;
- Segregation, consolidation, packaging and containerization of all equipment, materials and debris (hazardous and non-hazardous);
- Deconstruction of the temporary accommodations camp and packaging for removal;
- Demobilization of unused fuel brough to site for project activities, materials and equipment off-site including transportation of containerized soil and hazardous/non-hazardous waste and debris; and,
- Disposal of waste materials in the on-site engineered landfill or off-site facilities.

1.5 Roles and Responsibilities

Table 2 outlines the roles and responsibilities for personnel working on-site with respect to the management of the potential risks associated with erosion and sediment control.

Table 2. Roles and Responsibilities

Role	Responsibility
ECCC Departmental Representative	Require contractor Project Manager to prepare a contractor waste management plan that adheres at a minimum to the requirements laid out in this plan.
Contractor Project Manager	Design and oversee work methods to manage waste generation on site and ensure the necessary resources are available to implement this plan.
Site Supervisor	Implement and supervise the work at the site as set out in this plan.
	Consult with Project Manager for mitigation measures in response to potential issues.
	Maintain communications with PM to ensure monitoring and responses are appropriate.
	Will implement and monitor the Erosion, Sediment work methods at site when required as laid out in this plan.
Employees, sub-contractor, and visitors	Follow the requirements set out in this plan.

1.6 Key Contacts

Table 3 provides contact information for key personnel related to the Project.

Table 3. Key Contacts

Name	Position	Contact #	Organization
Owen Wade	ECCC Project Manager	Tel: 613-981-8652 Owen.wade@ec.gc.ca	ECCC - 351 St. Joseph Boulevard, 18th Floor, Gatineau, QC K1A 0H3
Ryan Breivik	PSPC Project Manager	Tel: 587-443-2699 Ryan.breivik@tpsgc-pwgsc.gc.ca	PSPC - 9700 Jasper Avenue, Edmonton, AB T5J 4C3
TBC	Contractor Project Manager		
TBC	Contractor Environment, Health, and Safety Coordinator		
TBC	Site Supervisors		

1.7 Training

Employees and subcontractors will be trained on the waste management measures outlined in this Plan and will be responsible for implementing the measures as required under the direction of the Site Supervisor. Personnel will also be required to be trained on any Safe Work Procedures that are associated with waste management procedures. Visitors to the site will be given an induction on any waste management procedures relevant to their work.

2.0 Waste Management Approach

2.1 Waste Streams

This Plan considers both legacy waste streams and Project generated waste streams. For reference, Table 4 below displays a breakdown of waste types.

Table 4. Waste Streams

Waste Stream	Project Generated Waste	Legacy Site Waste
Hazardous or Potentially Hazardous Wastes		
Batteries		✓
Asbestos Containing Materials		✓
Mercury Containing Materials		✓
Ozone Depleting Substances		✓
Polychlorinated Biphenyls (PCBs)		✓
Chemical Wastes – Liquids and Solids		✓
Used Oil, Fuels, Lubricants, Greases, Oil Filter, and Solvents	✓	✓
Non-Hazardous Waste		
Historic Building Demolition Waste		✓
Camp Construction/Demolition Waste	✓	
Camp Facilities Refuse	✓	
Metal Debris		✓
Cans/Plastics	✓	✓
Grey water	✓	
Sewage	✓	

Legacy Site Waste

The management of Legacy Site Waste is detailed within the Isachsen HAWS RAP. The volumes of waste and their management are outlined below in Table 5.

Table 5. Legacy Site Waste

Waste Stream	Volume	Waste Management
Remaining waste fuel/oily water mix (post incineration activities)	13,000 L	Off-site Disposal
Landfillable non-hazardous waste (metal debris, building demolition waste, waste drums, non-operational and operational vehicles)	5,350 m^3	On-Site Landfill
Hazardous waste that can be landfilled following proper special handling/packaging and abatement (Asbestos Containing Materials)	55 m^3	On-Site Landfill
Hazardous waste requiring off-site disposal (mercury containing materials, ozone-depleting substances, PCBs)	4 L	Off-site Disposal

The management of Project Generated Waste is detailed below. The volumes of waste and their management are outlined below in Table 6.

Table 6. Project Generated Waste

Waste Stream	Volume	Waste Management
Hazardous or Potentially Hazardous Wastes		
Chemical Wastes – Liquids and Solids	unknown	Off site Disposal
Used Oil, Fuels, Lubricants, Greases, Oil Filter, and Solvents	unknown	Off site Disposal
Non-Hazardous Waste		
Camp Construction/Demolition Waste	unknown	Off site Disposal

Waste Stream	Volume	Waste Management
Camp Facilities Refuse	unknown	Off site Disposal
Cans/Plastics	unknown	Off site disposal/recycling
Grey water	unknown	Primary treatment consisting of solid removal followed by a land application method greater than 100 m from watercourses.
Sewage	unknown	Off site Disposal

The Contractor will be responsible for:

- Tracking the volume of waste;
- Documenting the final location of all waste, including transport records and manifests;
- Documenting all materials salvaged during the remedial program;
- Complying with remedial specifications, governing acts/regulations concerning waste materials and site permits.

A summary level overview of the waste management approaches to be applied to Legacy Site Waste is as follows:

- Non-Hazardous Waste: Includes metals, glass and other non-hazardous debris from waste disposal areas, scattered refuse, building/infrastructure demolition and vehicles/equipment. This waste will be placed in the on-site engineered landfill.
- Hazardous Waste: Includes hazardous materials from waste disposal areas, asbestos, batteries, waste fuel. All hazardous waste will be packaged and shipped per the Transportation of Dangerous Good Act to a licensed hazardous waste management facility. Transport of materials will be tracked by the remedial Contractor. Hazardous waste that can be landfilled following proper special handling/packaging and abatement (Asbestos Containing Materials) will be placed in the on-site engineered landfill.

The Contractor will be required to prepare a comprehensive Waste Management Plan building upon this document and outlining the proposed method of handling each kind of Project generated waste streams listed in Table 3. Minimum standards and assumptions are provided below.

2.2 Description of Waste Management

Successful waste management requires the separation of different types of wastes as appropriate. The Contractor will include detailed descriptions, for each type of waste management infrastructure. The following three categories are predicted:

1. Engineered On-site Landfill;
2. Recyclable Material;
3. Incineration of Domestic Waste (as defined by the Contractor); and
4. Transfer to Approved Off-Site Facilities.

2.2.1 General Requirements

Waste management requires a systematic approach to ensure waste reduction and environmental effects are mitigated. Certain processes and protocols are specific to the individual types of waste management infrastructure; however, there are certain procedures common to all:

- Waste must be segregated into categories specific to each waste stream;
- Storage of waste materials must be done in such a way to prevent environmental impact, limit animal attraction and maintain worker safety;
- Health and safety training must be provided to workers and tailored to the specific scope of work required;
- All waste management activities must be documented, including volumes, personnel responsible, material transport procedures/manifests and any incidents;
- Failures in the waste management approach which result in environmental or health and safety incidents must be evaluated to determine corrective actions; and,
- Throughout all waste management processes, opportunities for source reduction, recycling and reuse/recovery should be evaluated and enacted where possible.

2.2.2 On-Site Engineered Landfill

The existing legacy waste at site is earmarked for disposal at the new engineered on-site landfill. Waste designated for landfilling primarily includes non-hazardous materials such as metal debris, building demolition waste, decommissioned equipment, and processed fuel drums. Certain hazardous materials, such as asbestos-containing materials, may also be disposed of on-site following appropriate abatement, handling, and packaging procedures in accordance with regulatory requirements. Waste fuel drums will be cleaned, crushed, and consolidated prior to placement in the engineered landfill. Non-hazardous waste associated with decommissioned equipment and miscellaneous surface debris, including metal and wood, will also be collected, processed as required, and disposed of within the landfill. The engineered landfill is intended for the on-site disposal of non-hazardous inert materials and has been designed with flexibility to accommodate the anticipated range of waste volumes through adjustable berm heights.

2.2.3 Recyclable Material

All materials appropriate for normal recycling (i.e. empty food cans, plastics) will be bagged and shipped opportunistically on backhauls to a recycling facility. Materials such as plastics, foams and rubbers can be separated on-site and shipped to an approved facility. Select items on-site can be sent back to the manufacturer for recycling or reuse. Large, reusable containers such as drums can be sent back to the supplier. Metal parts from heavy equipment can also be sent back to the supplier for reconditioning and reuse.

These materials present no environmental risk; however, may be an animal attractant from residual odours. Recyclable material must be securely stored to prevent animal attraction and habituation.

2.2.4 Incineration of Domestic Waste (as defined by the Contractor)

Several types of Project generated material will be eligible for incineration. Any incineration should occur after source reduction, reuse and recycling have been considered. Waste suitable for incineration is generally inert waste, with the exception of the odours of camp food waste which are animal attractants. Materials include food waste and camp facilities refuse (including, paper products, cardboard, paper, newspapers and magazines, most packaging, waxed paper, paper towels, serviettes and paper cups).

The Contractor, at their discretion, will be required to provide a dual chamber, forced air, fuel fired incinerator to site to process applicable Project generated waste. Incinerators must meet the requirements of the Canada-wide Standards for Dioxins and Furans and the Canada-wide Standards for Mercury Emissions. As part of the larger Waste Management Plan, the Contractor will be required to outline the Incineration Plan. The plan must be aligned with Environment Canada's Technical Document for Batch Waste Incineration to ensure air emissions are minimized.

Incineration may be used for various reasons, including reduced wildlife attractants to food waste and reduction of waste volumes. Incineration of eligible waste will generate ash. Any ash produced from incineration will be subject to testing for hazardous material content. Ash material will be disposed of accordingly, at an off-site waste management facility. The Contractor will be requested to incinerate materials daily; however, should any food or kitchen wastes require storage, materials must be well sealed to limit wildlife attraction. The incinerator will be located in a designated burn area free from combustible materials or vegetation and downwind of camp facilities. Fire response equipment must be readily available and operators trained in response measures. All incinerator operators will be appropriately trained on the specific unit in use, including operation, maintenance and testing protocols.

2.2.5 Transfer to Approved Facilities

All project-generated hazardous waste as well as any material which cannot be incinerated, landfilled, or recycled will be packaged and shipped to an approved waste management facility for disposal (hazardous or non-hazardous based on product). This includes material such as:

- Waste oil/product from vehicles and equipment;

- Vehicle components (e.g. anti-freeze);
- Lead acid or alkaline batteries;
- Ozone Depleting Substances (ODS)
- Mercury Containing Materials (e.g., fluorescent light tubes, thermostats)
- Aerosol cans;
- Contaminated materials from any spill response or hydrocarbon management (e.g. spill pads, sorbents);
- Incinerator ash and residue exceeding applicable criteria; and
- Solvents and paint.

All materials destined for off-site disposal must be stored safely and securely before transport. Storage of liquid and solid wastes destined for off-site disposal will be stored in steel drum containers meeting *Transportation of Dangerous Goods Act* and Regulations, closeable lids, and labels for marking contents and date filled. Shipment of these materials to licensed facilities must be conducted by trained individuals in accordance with the *Transportation of Dangerous Goods Act.*

Best management practices and environmental planning (e.g. the Spill Prevention Plan) are expected to reduce the potential for PHC releases to the environment during the Project. Despite these efforts, there is a potential for spills to occur. Should any fuel release occur during active remediation, impacted soils will be collected for transport off-site to a waste management facility licensed to accept the soils.

2.2.6 Wastewater

The Project may generate three discrete wastewater streams to be contained and managed separately:

- Camp Greywater (washing, general use), kitchen sumps/traps
- Camp Blackwater (sewage)
- Process Wastewater: Water used for washing and decontamination, such as washing drums, tanks, equipment, soil and non-hazardous waste before storage and off-site disposal.

Wastewater management will be further addressed through the Water Licence application with the Nunavut Water Board.

Camp Greywater

Camp Greywater will be discharged on-site. Greywater from camp facilities will be treated by first passing it through a filtration or settling process to remove solids, followed by disposal of the effluent using a land-application method, allowing the soils to absorb and naturally filter any remaining nutrients or contaminants. Effluent will be released onto the ground at a location, reviewed and accepted by the Departmental Representative that is a minimum of 100 m from natural drainage. Discharge locations will be selected to minimize erosion. No direct discharge will be permitted to surface water or wetlands.

Camp Blackwater

Camp Blackwater will be collected and transported off-site for disposal.

Process Wastewater

Process water may be required during remedial activities and will be sampled and disposed of off-site at a facility licensed to accept the wastewater or treated on-site and disposed of via ground discharge.

3.0 Monitoring

Throughout the completion of waste management activities, the transportation and disposal of waste will be recorded using tracking forms. Details pertaining to the various sampling requirements associated with the waste management at the Project site will also be recorded. Potential concerns or discrepancies will be noted and remedied appropriately. The procedures and methods used may be adjusted depending on the information recorded during the implementation of this plan. The waste management methods and techniques will be recorded and assessed to determine the effectiveness, and practices will be revised and improved as necessary.

4.0 Closure

Upon completion of work, the Contractor must remove all Project generated waste materials from the sites. Inspections will be conducted by the Owner's Representative to ensure conditions for closure have been met.

Management Plan

Spill Prevention Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut (Kuukyoak, 2026)

KUUKYOAK

NUNAVUT IMPACT REVIEW BOARD (NIRB)

Spill Prevention Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut

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

Sept 2026

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1.0 Introduction

1.1 Key Information

This management plan applies to the operations as part of remediation work being carried out at the Isachsen High Arctic Weather Station (HAWS) Remediation Project (the Project) by Environment and Climate Change Canada (ECCC), and their contractors. This Spill Prevention Plan (Plan) is being submitted to support the Nunavut Impact Review Board (NIRB) review process. The contracting authority for this project is Public Services and Procurement Canada (PSPC). This current version of the Plan is conceptual in nature, and a more comprehensive plan will be submitted by the successful Remediation Contractor with specific means and methods. This current plan is considered as the minimum standard that submittals will be measured against.

Table 1 provides key information relating to the project.

Table 1. Key Project Information

Project Name and Location	Isachsen High Arctic Weather Station (HAWS) Remediation Project (the Project) 78° 46’ 40” N, 103° 31’ 40” W
Federal Department	Environment and Climate Change Canada
Contact	Owen Wade Tel: 613-981-8652 owen.wade@ec.gc.ca
Project Office Location	351 St. Joseph Boulevard, 18th Floor, Gatineau, QC K1A 0H3
Contractor	TBC
Contractor Contact Information	TBC
Contractor Address	TBC

1.2 Purpose and Scope

The purpose of this Plan is to provide a plan of action for unforeseeable spill events during the Project. The Plan identifies key response personnel and their roles and responsibilities in the event of a spill, as well as the equipment and other resources available to respond to a spill. It details spill response

procedures that will minimize potential health and safety hazards, environmental damage and clean-up efforts. The Plan has been prepared to ensure quick access to information required in responding to a spill. This document is considered to be the minimum standard for spill response that ECCC requires of itself and its contractors for the duration of the Project.

All personnel will be familiar with the Plan and refreshed through separate or regularly scheduled safety meetings. Training sessions will be provided by the Contractor to ensure employees understand the steps to be undertaken in the event of a spill. All personnel will be shown where spill kits are stored, be familiarized with their contents, and be trained in using spill equipment and responding to spills.

The Contractor will be required to submit a Site-Specific Health and Safety Plan (SSHSP) to Kuukyoak for review. The Plan is considered a component of the SSHSP and is required to contain the following minimum information:

- A description of pre-emergency planning.
- Personnel roles, lines of authority and communication, emergency phone numbers.
- Emergency alerting and response procedures.
- Evacuation routes and procedures, safe distances and places of refuge.
- Directions/methods of getting to nearest medical facilities.
- Emergency decontamination procedures.
- Emergency medical treatment and First Aid.
- Emergency equipment and materials: Include and provide at minimum booms (sorbent and containment), sorbents for cleanup, fire extinguishers for A-B-C fires, overpacks for contaminated soils, pumps, hand shovels, picks and containment barriers, such as plastic sheeting.
- Emergency protective equipment: Include at minimum clothing, protective suits, respirators, etc. to comply with potential emergency conditions and in accordance with NIOSH guidelines.
- Procedures for reporting incidents.
- Spill response and containment plans for all materials that could potentially be spilled.
- Site specific spill prevention plans for all locations where refined petroleum products will be stored and used for refuelling including, but not limited to:
    - An inventory of response and clean-up equipment.
    - A site map with the location of storage facilities and the location of emergency equipment with spill response and clean-up equipment.
    - A cover page that clearly identifies the NWT 24-hour Spill Report Line and the name, job title and 24-hour telephone number for person(s) responsible for activating the Spill Prevention Plan.

1.3 Site Description

The Isachsen HAWS property (Site) is within the Directory of Federal Real Property (DFRP) land reserve (DFRP # 075272) which has a total area of approximately 450 hectares (ha). The Site is centered at a latitude of 78 degrees 46 minutes 40 seconds N and longitude of 103 degrees 31 minutes 40 seconds W

facing Louise Bay, on the west-facing side of Ellef Ringnes Island, NU. The Site is occupied by approximately 22 permanent structures with associated infrastructure, equipment, and supplies. Other features previously identified at the Site, in addition to the 22 structures, include a 1,500-metre-long runway, former water and sewage infrastructure, fuel storage and distribution facilities, power generation equipment, two on-site waste disposal areas (WDAs), fuels tanks, thousands of empty/partially empty drums, other abandoned equipment, and debris.

Originally established in 1947 as one of five joint Canadian–American High Arctic Weather Stations, the Site supported meteorological monitoring, including upper-atmosphere observations using weather balloons. Operations transitioned fully to Canada in 1972 and continued until the station was decommissioned in 1978. Since then, the site has operated as an automated weather station and has intermittently supported scientific research and training activities. Due to its extreme remoteness, access has been almost exclusively by air.

1.4 Project Description

The Project is expected to span until 2030. A summary of the Project related activities is provided in the below:

- Mobilization of personnel, equipment, materials and support facilities, including fuel;
- Collection of borrow material (aggregate) to produce airstrip upgrades, road upgrades, construct a new engineered on-site landfill, cap the existing waste disposal areas, construct a camp pad and temporary waste storage area, and general site re-grading.
- Construction of a temporary accommodations camp;
- Construction of a new engineered landfill designed to accommodate the existing waste on site.
- Demolition of structures and buildings including removal and management of hazardous materials;
- Collection, cleaning and crushing of barrels;
- Collection and sorting of debris;
- Segregation, consolidation, packaging and containerization of all equipment, materials and debris (hazardous and non-hazardous);
- Deconstruction of the temporary accommodations camp and packaging for removal;
- Demobilization of unused fuel brough to site for project activities, materials and equipment off-site including transportation of containerized soil and hazardous/non-hazardous waste and debris; and,
- Disposal of waste materials in the on-site engineered landfill or off-site facilities.

1.5 Roles and Responsibilities

Table 2 outlines the roles and responsibilities for personnel working on-site with respect to the management of the potential risks associated with the unauthorized release of a controlled substance.

Table 2. Roles and Responsibilities

Role	Responsibility
Contractor Project Manager	Oversee spill contingency measures on site and ensure the necessary resources are available to implement this plan.
Site Supervisor	Implement and supervise the work at the site as set out in this plan.
	Ensure that monitoring inspections are conducted throughout the day and at the beginning and end of every workday.
	Consult with Project Manager for mitigation measures in response to potential issues.
	Maintain communications with PM to ensure monitoring and responses are appropriate.
Employees, sub-contractor, and visitors	Follow the requirements set out in this plan.

1.6 Key Contacts

Table 3 provides contact information for key personnel related to the Project.

Table 3. Key Contacts

Name	Position	Contact #	Organization
Owen Wade	ECCC Project Manager	Tel: 613-981-8652 Owen.wade@ec.gc.ca	ECCC - 351 St. Joseph Boulevard, 18th Floor, Gatineau, QC K1A 0H3
Ryan Breivik	PSPC Project Manager	Tel: 587-443-2699 Ryan.breivik@tpsgc-pwgsc.gc.ca	PSPC - 9700 Jasper Avenue, Edmonton, AB T5J 4C3
TBC	Contractor Project Manager		

Name	Position	Contact #	Organization
TBC	Contractor Environment, Health, and Safety Coordinator		
TBC	Site Supervisors		

1.7 Training

Planning for an emergency is imperative due to the remoteness of the site and will require an employee and contractor training program. The training program will include the following minimum information:

- All individuals entering the site will be required to participate in an orientation session.
- All locations of the Plan and spill kits will be provided on a map.
- An overview of the Plan will be presented to all workers.
- Specific training sessions will be scheduled for individuals directly involved in handling hazardous materials to ensure familiarity with handling protocols, spill response techniques and available resources.

1.8 List of Hazardous Materials

Table 4 presents a list of the hazardous materials and potential contaminant streams that are anticipated to be required in support of the remedial activities. These are preliminary estimates and the Contractor will be required to provide a detailed list of all hazardous materials on-site, including the types and numbers of storage containers, storage location and Material Safety Data Sheets (MSDS) for each material.

Table 4. Anticipated On-Site Hazardous or Potentially Hazardous Materials

Fuels	Volume (L)	Storage	Location (subject to approval)	Use
Diesel	630,000	Stored in bladder tanks delivered by bulk delivery in a BATT*	Designated storage area, location TBD and subject to approval. Minimum 100 m from waterbody (where possible).	Remediation equipment, camp generators, etc.

Fuels	Volume (L)	Storage	Location (subject to approval)	Use
Gasoline	12,000	Stored in bladder tanks delivered by bulk delivery in a BATT*	Designated storage area, location TBD and subject to approval. Minimum 100 m from waterbody (where possible).	Light trucks, ATVs, hand tools, etc.
Propane	5,000	Stored in cylinders delivered by bulk delivery in a BATT*	Designated/secure gas storage area, location TBD.	Camp kitchen
Aviation Fuel	10,000	Stored in bladder tanks delivered by bulk delivery in a BATT*	Designated storage area, location TBD and subject to approval. Minimum 100 m from waterbody (where possible).	Planes

* Bulk Aviation Transfer Tank

The number, size, and configuration of bladder tanks required for the Project will be determined during detailed planning by the Contractor. Bladder systems with integrated secondary containment may be considered where appropriate

1.9 Preventative Measures – Storage and Handling

In addition to the response actions detailed within this Plan, the Contractor must ensure that suitable preventative measures are in place to reduce the likelihood of incidents. General and practical approaches are presented below, to be refined by the Contractor:

- Once on-site, handling of hazardous material will be supervised by the Contractor and/or the Departmental Representative.
- Anyone handling hazardous material on-site will be required to wear all necessary personal protective equipment and have appropriate training.
- MSDS, also called SDS, must be readily available for all workers at site.
- Due to the volumes of fuel required, the Contractor will be required to provide a Fuel Management Plan, including proposed storage locations.
- Drums containing fuel and/or hazardous materials will be stored either on their side with bungs facing 9 and 3 o'clock position, or on pallets, upright, and banded.

- All drums of product will be labelled by the Contractor.
- All hazardous materials transported to site will have industry standard labels.
- Designated product transfer areas will be established within previously disturbed areas of the sites, more than 100 m from a watercourse. The Contractor will be required to identify locations for hazardous material storage prior to initiating use.
- According to Workplace Hazardous Materials Information System (WHMIS) and/or Transportation of Dangerous Goods (TDG) standards, signs will be posted at all designated product transfer areas with the product name, TDG placard and signs warning of danger.
- Designated product transfer areas will have secondary containment. This will consist of a bermed area lined with an oil-resistant liner. Holding capacity of berms will be a minimum of 110% capacity of the largest storage container. Existing bermed containment areas may be used where appropriate, subject to confirmation that they are fit for service.
- Designated product transfer areas will be equipped with spill kits for emergency use and additional supplies for preventative use. This may include spill pads and drip trays at refueling areas which may be used as routine practice to prevent accidental release.
- Portable drip trays are to be used when refueling ATVs or other mobile equipment away from designated refueling areas, to avoid any leaks/drips onto the land.
- Regular maintenance and oil checks of all motorized equipment will also be undertaken to avoid preventable leaks.
- The site foreman or designate will conduct visual inspections to check for leaks and damage to the fuel storage containers and transfer equipment, as well as check for stained or discoloured soils around storage areas and motorized equipment. The visual inspections will be included in the foreman's weekly checks. For example, lids and caps will be checked for tight seals.
- Following any near miss or incident, lessons learned and corrective measures will be identified to prevent further similar events.

Fuel transfer and storage for the proposed activities of the Project will be conducted by the Contractor in accordance with the following regulations, under the supervision of the Departmental Representative:

- National Fire Code of Canada (2010)
- Transportation of Dangerous Goods Act (1992)
- Transportation of Dangerous Goods Regulations
- CEPA Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations

2.0 Responding to Spills

2.1 Response Organization

This section is intended to identify response personnel, their duties, on or off-site work locations and contact information, including 24-hour telephone numbers for those responsible for activating the plan.

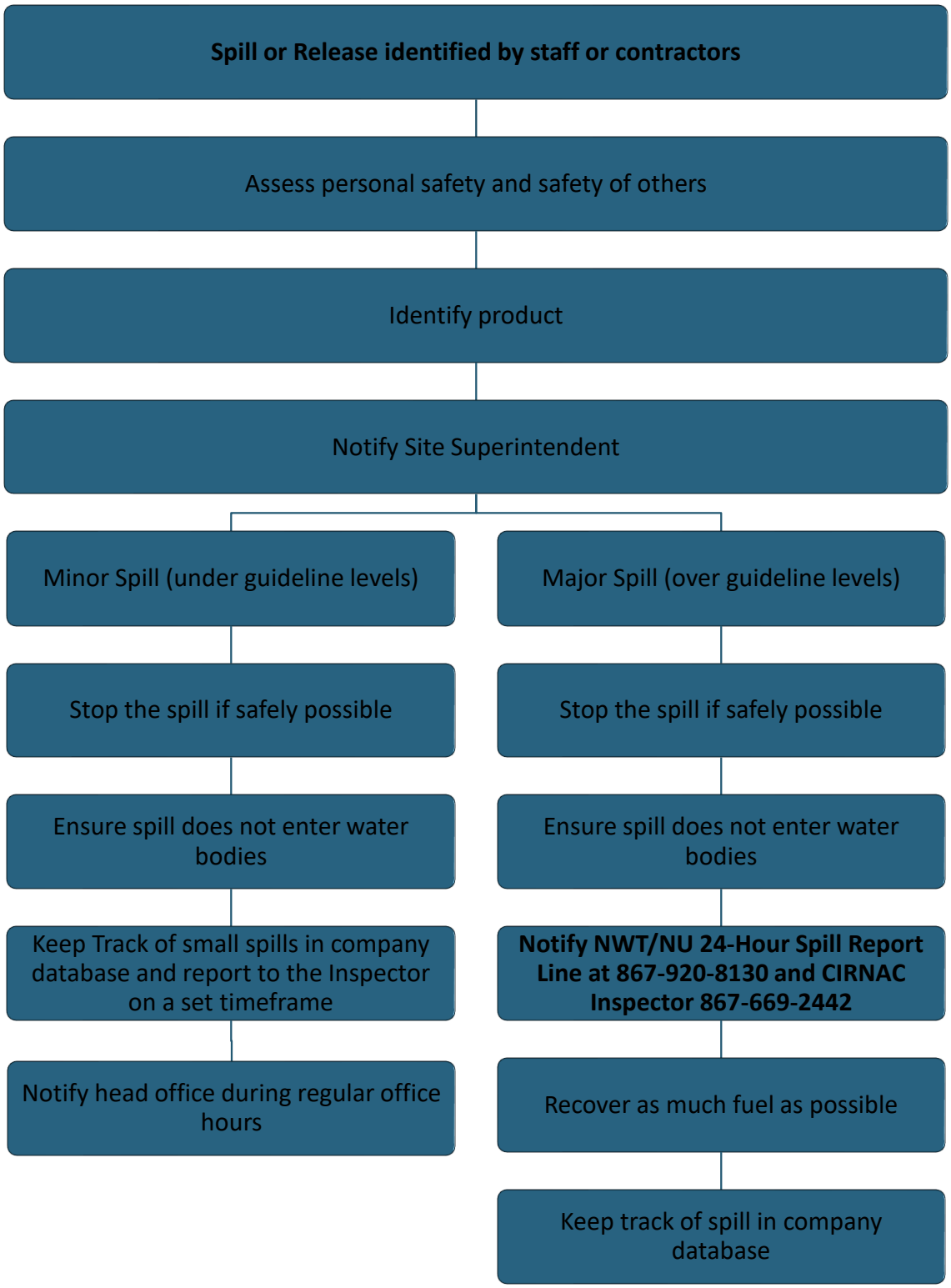
The Contractor will supplement this information with a flowchart depicting lines of communication and the response duties of each member of the response team.

Figure 1 shows the proposed organizational chart for spill response. Details of each step will be provided in the procedures for initial actions under Section 3. General duties include:

- **ENSURING SAFETY** of all persons in the vicinity - if necessary, remove staff from the area affected by the spill immediately;
- Making every effort to **IDENTIFY** the spilled product;
- Consulting appropriate MSDS and determine principal types of health and safety hazards associated with this product or material;
- Wearing appropriate PPE when working on or near the spill;
- If safe to do so, **STOPPING THE LEAK**;
- If safe to do so, **CONTAINING THE SPILL**;
- **DOCUMENTING AND REPORTING** internally and to Spill Report Line if necessary;
- **CLEANING UP SPILLED MATERIALS**;
- **DISPOSING** of materials in approved manner; and,
- **AT ALL TIMES: CONSIDER YOUR PERSONAL SAFETY AND THOSE OF YOUR CO-WORKERS BEFORE PROCEEDING WITH ANY ACTION**

An immediately reportable spill is defined as a release of a substance that is likely to be an imminent environmental or human health hazard or meets or exceeds the volumes outlined in Appendix C. It must be reported immediately to the NWT/NU 24-Hour Spill Report Line at 867-920-8130. Any spills less than these quantities do not need to be reported to the spill reporting line. Rather, these minor spills will be tracked and documented by the Contractor and submitted to the appropriate authority either immediately upon request or at a pre-determined reporting interval. The Site Superintendent will also inform CIRNAC for inclusion in the spill tracking database and notify the Project Manager in the event of media inquiries. If there is any doubt that the quantity spilled exceeds reportable levels, the spill will be reported to the NWT/NU 24-Hour Spill Report Line.

Figure 1. Flow chart of response organization



In the event of a spill involving danger to human life, emergency response personnel will also be contacted. Employees and contractors will have a communication device (i.e., two-way radios) for communication with the Site Superintendent and other staff on-site.

3.0 Action Plan

This section outlines the procedures and steps that would occur in the event of a spill or unauthorized discharge. As a component of the Final Spill Prevention Plan, the Contractor is required to provide detailed procedures and steps that would occur in the event of a spill or unauthorized discharge for the hazardous materials. The Contractor will also be required to list all hazardous materials, potential discharge events, potential discharge volumes (with worst case scenario) and direction of potential discharge.

In all cases, environmental monitoring is a vital aspect of any spill or unauthorized discharge. It ensures that the emergency response team has acted correctly and that the action plan has been effective. Sampling of liquid, soil and vegetation within a spill area may be required to determine contaminant levels, if any. Once a spill is terminated and or contained, the area may be monitored on a regular basis until results conclude that levels are below prescribed limits or additional cleanup is required. The Contractor must prepare both the initial spill report (immediately), followed by the Detailed Spill Report within 30 days of the spill, documenting the incident, response, monitoring and current conditions.

3.1 Potential Spill and Sources for Each Hazardous Material On-Site

Table 5 lists the expected hazardous materials mobilized to site, potential discharge events, potential discharge volumes (worst case scenario in brackets) and direction of potential discharge.

Table 5. Potential Spill Sources, Causes, and Direction

Material (sources)	Potential Discharge Event	Direction of Potential Discharge
Diesel Fuel (fuel storage, refueling stations, vehicles, generators)	1. Over pumping during refueling 2. Leaking of hose or fittings 3. Leaking from vehicles and equipment 4. Leaking of fuel drum(s) in/outside fuel storage area	To ground from equipment operation, fuel transfer, camp or fuel storage area(s), potential for underground seepage or overland flow.
Gasoline (pumps, power tools, vehicles)	1. Over pumping during refueling 2. Leaking of hose or fittings 3. Leaking from vehicles and equipment 4. Leaking of fuel drum(s) in/outside fuel storage area	To ground from equipment operation, fuel transfer, camp or fuel storage area(s), potential for underground seepage or overland flow.

Material (sources)	Potential Discharge Event	Direction of Potential Discharge
Propane (kitchen, stove, fridge)	1. Leaking of hose or fittings 2. Leaking of cylinder	Volatile, release into air. Managing human health/fire risks paramount. Potential explosive hazard
Aviation Fuel (aircraft refueling, storage tanks, transfer systems)	1. Over pumping during refueling 2. Leaking of hose or fittings 3. Failure of transfer equipment 4. Leaking of fuel storage tanks or drums	To ground during fuel transfer or storage activities, with potential for overland flow to low-lying areas or migration to nearby waterbodies if not contained.

3.2 Potential Environmental Impacts of Spill

Diesel fuel, gasoline, and aviation fuel are all considered potential contaminants of concern due to their ability to adversely affect soil within the active layer and, where migration pathways exist, groundwater quality. The following section outlines the general environmental conditions of the primary hazardous materials to be managed on-site.

Diesel Fuel

Environmental Impacts: Diesel may be harmful to wildlife and aquatic life. Diesel burns slowly and thus risk to the environment is reduced during recovery as a burn can be more readily contained compared with volatile fuels. Runoff into water bodies must be avoided.

Gasoline

Environmental Impacts: Gasoline may be harmful to wildlife and aquatic life. It is not readily biodegradable though is quick to volatize. Runoff into water bodies must be avoided.

Propane

Environmental Impacts: Propane may be harmful to wildlife and the surrounding environment and has the potential to accumulate. Propane is extremely volatile and is the most flammable material stored on-site, thus immediate impacts to the surrounding environment are a concern.

Aviation Fuel

Environmental Impacts: Aviation fuel may be harmful to wildlife and aquatic life. It is moderately volatile and can spread readily across soil and water surfaces, creating both contamination and vapour hazards. Aviation fuel can infiltrate soil and impact groundwater and may persist under certain conditions. Runoff into waterbodies must be prevented.

3.3 General Procedures

The following general response procedures have been outlined to facilitate spill response.

3.3.1 Procedures for Initial Actions

- Ensure safety of all personnel.
- Assess spill hazards and risks.
- Remove all sources of ignition.
- Stop the spill if safe to do so (e.g. shut off pump, replace cap, tip drum upward, patch leaking hole). Use the contents of the nearest spill kit to aid in stopping the spill. Tyvek suits and chemical master gloves will be located in the spill kit and should be worn immediately if there is any risk of chemical contact.
- No matter what the volume is, notify Site Superintendent.
- Contain the spill – use contents of spill kits to place sorbent materials on the spill or use shovel to dig dike to contain spill. Methods will vary depending on the nature of the spill. See section 3.3.3 for more details.

3.3.2 Spill Reporting Procedures

Report spill immediately to Site Superintendent, who will determine if spill is to be reported to the NWT/NU 24-Hour Spill Line at 867-920-8130.

Each spill kit, as well as the site foreman, will have copies of the NWT/NU Spill Report form to be filled out (see Appendix B). Fill out the Spill Report to send to the staff of the NWT/NU 24-Hour Spill Line and report it to the CIRNAC office in Iqaluit.

3.3.3 Procedures for Containing and Controlling the Spill

- Initiate spill containment by first determining what will be affected by the spill.
- Assess speed and direction of spill and cause of movement (water, wind and slope).
- Determine best location for containing spill, avoiding any water bodies.
- Have a prevention plan ready in case spill worsens beyond control or if the weather or topography impedes containment.

3.3.3.1 Specific Spill Containment Methods for Land and Water

1) Containment of Spills on Land

Spills on land include spills on rock, gravel, soil and/or vegetation. Generally, spills on land occur during the late spring, summer or fall when snow cover is at a minimum. It is important that all measures be undertaken to avoid spills reaching open water bodies.

Silt Screens

Should a release of sediment enriched water occur on land, silt fencing may be used where flow rates are slow enough to be mitigated with surface measures. A silt fence is a sediment control device which assists in retaining sediments in place to prevent migration to waterbodies.

Sorbents

Where migration is slow and product volumes are minimal, the use of sorbent materials may be sufficient to contain a spill on land. Sorbent materials recover liquid through absorption or adsorption and fall into three general categories: organic (e.g. peat moss, sawdust), inorganic sorbents (e.g. clay, sand) and synthetic sorbents (materials designed specifically to take up oil or specific chemicals). Spill kits will contain sorbents for use in small spills. Used sorbent materials must be managed per hazardous materials (as appropriate).

Dykes

Dykes can be created using soil surrounding a spill on land. These dykes are constructed around the perimeter or down slope of the spilled product. A dyke needs to be built to a size that will ensure containment of the maximum quantity of fuel that may reach it. A plastic tarp can be placed on and at the base of the dyke such that fuel can pool up and subsequently be removed with sorbent materials or by pump into barrels or bags.

Trenches

Trenches can be dug out to contain spills as long as the top layer of soil is unfrozen. Shovels, pick axes or a loader can be used depending on the size of trench required. It is recommended that the trench be dug to the bedrock or permafrost, which will then provide containment layer for the spilled fuel. Fuel may then be recovered using a pump or sorbent materials.

2) Containment of Spills on Water

Spills on water may negatively impact water quality and aquatic life and may migrate easily. All measures must be taken to prevent and contain spills on open water.

Silt Curtains

Where the release of sediment laden water occurs, the use of silt curtains may be employed. Silt curtains are floating barriers which prevent the migration of water with elevated suspended solids. Floating nets and debris booms may also be used to contain larger solids or debris.

Booms

Booms are commonly used to recover fuel or other light non-aqueous phase liquids floating on the surface of lakes or slow-moving streams. They are typically deployed from the shoreline of a waterbody to create a containment area around a spill. If a spill occurs offshore or in an area that cannot be safely

accessed from shore, a boat may be required and will be on site to facilitate boom deployment and recovery operations. The availability and suitability of a boat for spill response activities will be evaluated as part of spill response planning. More than one boom may be used at once, providing a secondary means of containment. Booms may also be used in streams and should be set out at an angle to the current. Booms are designed to float and contain sorbent materials that absorb fuels. Fuel contained within the boom enclosure will be recovered using sorbent materials or pumps and transferred to appropriate containers for disposal.

Weirs

Weirs can be used to contain spills in streams and to prevent further migration downstream. Plywood or other materials found on-site can be placed into and across the width of the stream, such that water can still flow under the weir. Spilled fuel will float on the water surface and be contained at the foot of the weir. It can then be removed using sorbents, booms or pumps and placed into barrels or plastic bags.

Barriers

In some situations, barriers made of netting or fence material can be installed across a stream, and sorbent materials placed at the base to absorb spilled fuel. Sorbents will need to be replaced as soon as they are saturated. Water will be allowed to flow through. This is very similar to the weir option discussed above.

3.3.4 Procedures for Transferring, Storing and Managing Spill Related Wastes

In most cases, spill cleanups are initiated at the far end of the spill and contained moving toward the center of the spill. Sorbent socks and pads are generally used for small spill cleanup. A pump with an attached fuel transfer hose can suction spills from leaking containers or large accumulations on land/ice, for containerization into empty drums. Hand tools such as cans, shovels, and rakes are also very effective for small spills or hard to reach areas. Used sorbent materials are to be placed in plastic bags temporarily for future disposal. All materials mentioned in this section will be available in spill kits to be located at the fuel storage areas. Following clean-up, any tools or equipment used will be properly washed and decontaminated or replaced if this is not possible.

Spilled petroleum products and materials used for containment will be placed into empty waste oil containers and sealed for proper disposal at an approved disposal facility.

3.4 Specific Procedures

As part of the Contractor's Spill Prevention Plan, specific spill response approaches will be presented for the primary products used at site. Below are examples of procedures outlined for a diesel fuel spill, gasoline spill, and lubricating or hydraulic oil spill.

A. Diesel Fuel Spill

i. *Initial Response*: The Site Superintendent, or their designate, shall be advised of the incident and a response initiated. **ELIMINATE** ignition sources and any open flame. **STOP** the flow of products. **CONTAIN** the flow of diesel fuel by dyking with earth or other barrier, blocking any entry to waterways, construction of an oil interceptor trench or underflow dam, etc. If any spill has reached natural waters, deploy a containment boom and apply oil absorbent materials. The spill report will be filed with the 24-hour Spill Line by the Site Superintendent or his designate.

ii. *Recovery:* Recover as much free product as possible by pumping into drums or portable tanks. Excavate any contaminated soil/snow and dispose of at an approved site. Diesel fuel spilled on water can be recovered by using skimmers or absorbent booms.

iii. *Fire Response:* Use CO_2, dry chemicals, foam or water spray (fog). Use water to cool tanks. Divert the fuel to a secure area for controlled burning. If diesel fuel is escaping, get it contained as soon as possible.

iv. *Properties*: Chemical composition hydrocarbon C_9 to C_{16}. Clear to yellow with hydrocarbon odour. Diesel fuel will float on water. Flash point of diesel fuel is >52ºC.

v. *Environmental Concerns:* Diesel fuel is toxic to fish and other aquatic organisms and harmful to waterfowl.

vi. *Containers:* Diesel fuel will be stored in bladder tanks.

vii. *Personal Protection:* Wear impervious chemical resistant clothing, gloves, footwear and goggles. For confined spaces Self Contained Breathing Apparatus (SCBA) may be required. Avoid contact with strong oxidizers such as sulphuric acid and peroxides.

B. Gasoline Spill

i. *Initial Response:* The Site Superintendent, or their designate, shall be advised of the incident and response initiated. **ELIMINATE** ignition sources and any open flame. **REMOVE** all personnel not involved with the incident from the area. **STOP** the flow of products. **CONTAIN** the flow of gasoline by dyking with earth or other barrier, blocking any entry to waterways, construction of an oil interceptor trench or underflow dam, etc. If spill has reached natural waters, deploy a containment boom and apply oil absorbent materials or leave to evaporate. Gasoline contains benzene, a suspected carcinogen. Avoid breathing vapours, and if necessary, obtain an organic vapour cartridge full-face piece respirator or wear SCBA. The Spill Report will be filed with the 24-hour Spill Line by the Site Superintendent or his designate.

ii. *Recovery:* Conduct regular explosive atmosphere monitoring with an intrinsically safe instrument. Recover as much free product as possible by pumping into drums or portable tanks. Free product recovery operations should utilize an explosion proof pump and all equipment involved in the transfer must be properly grounded. Excavate any contaminated soil/snow and dispose of at an approved site. Gasoline spilled on water can be recovered by using skimmers or absorbent booms. When excavating gasoline-contaminated soils/snow, consider using a layer of compression foam to reduce the potential of explosion arising from sparks caused during excavating.

iii. *Fire Response*: Use CO_2, dry chemical, foam, or water spray (fog). Use water to cool tanks. Divert the gasoline to a secure area for controlled burning (upon approval). If gasoline is escaping, get it contained as soon as possible.

iv. *Properties:* Chemical composition hydrocarbon C_4 to C_{12} range. Light green, clear, amber colour liquid with hydrocarbon odour. Gasoline floats on water. Gasoline has a Flash Point of -40ºC. Vapours and products are highly flammable and explosive. Vapours are heavier than air.

v. *Environmental Concerns:* Gasoline is toxic to fish and other aquatic organisms and harmful to waterfowl.

vi. *Containers:* Will be transported to the site in a BATT.

vii. *Personal Protection:* Wear impervious chemical resistant clothing, gloves, footwear and goggles. For confined spaces SCBA may be required. Eliminate all sources of ignition. Restrict access and work upwind from spilled products. Avoid contact with strong oxidizers such as sulphuric acid and peroxides.

C. Aviation Fuel Spill

viii. *Initial Response:* The Site Superintendent, or their designate, shall be notified immediately and response actions initiated. Eliminate all potential ignition sources and open flames. Remove all non-essential personnel from the area and establish a safe perimeter. Stop the flow of product at the source, if it can be done safely. Contain the spill using earth, snow, or other suitable materials to prevent migration, particularly to waterbodies. Construct containment features such as berms, trenches, or underflow dams as required. If the spill has reached water, deploy containment booms and absorbent materials to limit spread. Avoid inhalation of vapours and prolonged exposure; appropriate respiratory protection (e.g., organic vapour cartridge respirator or SCBA) should be used as necessary. The spill shall be reported to the 24-hour Spill Line by the Site Superintendent or designate.

ix. *Recovery:* Monitor for flammable atmospheres using intrinsically safe equipment. Recover free product using appropriate pumping methods into approved containers such as drums or portable tanks. Ensure all equipment is rated for use in flammable environments and properly grounded. Contaminated soil or snow shall be excavated and managed in accordance with applicable regulatory requirements. For spills to water, recovery may include skimming or use of absorbent booms and pads. Excavation activities should be conducted carefully to minimize ignition risks.

x. *Fire Response*: Use foam, dry chemical, CO_2, or water spray (fog). Water may be used to cool exposed containers and surrounding equipment. Do not use direct water streams on burning fuel. If safe and approved, fuel may be diverted to a controlled area for management.

xi. *Properties:* Aviation fuel is a kerosene-type hydrocarbon fuel, typically clear to straw-coloured with a characteristic odour. It has a higher flash point (generally above 38°C) than gasoline but remains flammable. Vapours may form combustible mixtures under certain conditions.

xii. *Environmental Concerns:* Aviation Fuel is toxic to fish and other aquatic organisms and harmful to waterfowl.

xiii. *Containers:* Will be transported to the site in a BATT.

xiv. *Personal Protection:* Wear impervious chemical resistant clothing, gloves, footwear and goggles. For confined spaces SCBA may be required. Eliminate all sources of ignition. Restrict access and work upwind from spilled products. Avoid contact with strong oxidizers such as sulphuric acid and peroxides.

4.0 Spill Resource Inventory

This section is intended to describe all resources available for responding to spills. This includes personnel and an inventory of clean up materials, tools and equipment. The Primary Contractor will include, at minimum, comprehensive details on the categories below within the Spill Prevention Plan.

4.1 On-Site Resources

On-site resources may include spill kits, booms, sorbent materials, earth moving equipment, etc. The Contractor will be required to provide a list of the spill resources on-site as well as a map showing the location of resources.

The contents of a typical spill kit are listed below. Spill kit contents may vary from those listed below; however, industry standards must be maintained.

Standard Contents of Conventional Spill Kits

- Tyvek splash suits
- pairs of chemical master gloves
- 10 large bags with ties for temporary use
- 2 oil only booms (5” x 10’)
- 50 oil only mats (16” x 20”)
- sorbent socks
- 10 sorbent pads
- 2 large tarps and rolls of polyethylene sheeting
- 1 roll duct tape
- 1 utility knife
- 1 field notebook and pencil
- 1 rake
- 1 pickaxe
- 1 Shovel
- 1 instruction binder
- Empty drums (or overpack)
- Hatch removal sock

Appendix A – Material Safety Data Sheets (Primary Products)

Material Safety Data Sheet

GASOLINE - ETHANOL

1. Product and company identification

Product name : GASOLINE - ETHANOL

Synonym : SuperClean, SuperClean 94 (Montreal), GASOHOL, Regular, Mid-Grade, Plus, WinterGas, RegularClean, PlusClean, marked or dyed gasoline, Super Premium (94 RO), E-10, Ethanol blended gasoline

Code : GASOHOL

Material uses : Gasoline-Ethanol is used in spark ignition engines including motor vehicles, farm vehicles, inboard and outboard boat engines, small engines and recreational vehicles.

Manufacturer : PETRO-CANADA
P.O. Box 2844
150 – 6th Avenue South-West
Calgary, Alberta
T2P 3E3

In case of emergency : Petro-Canada: 403-296-3000
Canutec Transportation: 613-996-6666
Poison Control Centre: Consult local telephone directory for emergency number(s).

2. Hazards identification

Physical state : Clear liquid.

Odour : Gasoline

WHMIS (Canada) :



Class B-2: Flammable liquid
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : WARNING!

FLAMMABLE LIQUID AND VAPOUR. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CANCER HAZARD - CAN CAUSE CANCER. CONTAINS MATERIAL WHICH MAY CAUSE HERITABLE GENETIC EFFECTS.

Flammable liquid. Irritating to eyes, respiratory system and skin. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapour or mist. Avoid contact with eyes, skin and clothing. Can cause cancer. Risk of cancer depends on duration and level of exposure. Contains material which may cause heritable genetic effects. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.

Ingestion : Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract. Ingestion of this product may cause Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.

Skin : Irritating to skin.

Eyes : Irritating to eyes.

Potential chronic health effects

2 . Hazards identification

Chronic effects : This product contains an ingredient or ingredients, which have been shown to cause chronic toxic effects. Repeated or prolonged exposure to the substance can produce blood disorders.

Carcinogenicity : Can cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : Contains material which may cause heritable genetic effects.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure : Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated skin exposure can produce local skin destruction or dermatitis.

See toxicological information (section 11)

3 . Composition/information on ingredients

Name	CAS number	%
Gasoline	86290-81-5	90 - 97
Toluene	108-88-3	10-20
Ethanol	64-17-5	5-10
Benzene	71-43-2	0.5-1.5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First-aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : Flammable.

Extinguishing media

Suitable : Use dry chemical, CO_2, alcohol-resistant foam or water spray (fog).

Not suitable : Do not use water jet.

5 . Fire-fighting measures

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Products of combustion : Carbon oxides (CO, CO2), nitrogen oxides (NOx), lead, aldehydes, ketones, phenols, polynuclear aromatic hydrocarbons, smoke and irritating vapours as products of incomplete combustion.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on fire hazards : Extremely flammable in presence of open flames, sparks, and heat. This product can accumulate static charge and ignite. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back.

Special remarks on explosion hazards : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire. Runoff to sewer may create fire or explosion hazard.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container. Ground all equipment containing material.

7 . Handling and storage

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Ensure the storage containers are grounded/bonded.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Gasoline	**ACGIH TLV (United States).** TWA: 300 ppm 8 hour(s). STEL: 500 ppm 15 minute(s).
Toluene	**ACGIH TLV (United States).** TWA: 20 ppm 8 hour(s).
Ethanol	**ACGIH TLV (United States).** STEL: 1000 ppm 15 minute(s).
Benzene	**ACGIH TLV (United States). Absorbed through skin.** TWA: 0.5 ppm 8 hour(s). STEL: 2.5 ppm 15 minute(s).

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Recommended: polyvinyl alcohol (PVA), Viton. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

8 . Exposure controls/personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Clear liquid.

Flash point : -43°C (-45.4°F) (NFPA)

Auto-ignition temperature : Not available.

Flammable limits : Lower: 1.4% (NFPA)
Upper: 7.6% (NFPA)

Colour : Clear, undyed liquid. May be dyed for taxation purposes.

Odour : Gasoline

Odour threshold : Not available.

pH : Not available.

Boiling/condensation point : 26 to 200°C (78.8 to 392°F)

Melting/freezing point : Not available.

Relative density : 0.7 to 0.78 kg/L @ 15°C (59°F)

Vapour pressure : 41 to 107 kPa (307 to 802 mm Hg) @ 15°C (59°F)

Vapour density : 3 to 4 [Air = 1] (NFPA)

Volatility : Not available.

Evaporation rate : Not available.

Viscosity : 0.6 cSt @ 40°C (104°F)

Pour point : Not available.

Solubility : Hydrocarbon components virtually insoluble in water. Ethyl alcohol is completely soluble in water.

10 . Stability and reactivity

Chemical stability : The product is stable.

Hazardous polymerisation : Under normal conditions of storage and use, hazardous polymerisation will not occur.

Materials to avoid : Reactive with oxidising agents, acids and interhalogens.

Hazardous decomposition products : May release COx, NOx, aldehydes, ketones, phenols, polynuclear aromatic hydrocarbons, smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Gasoline	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	13600 mg/kg	-
Toluene	LD50 Dermal	Rabbit	12125 mg/kg	-
	LD50 Oral	Rat	636 mg/kg	-
	LC50 Inhalation Vapour	Rat	7585 ppm	4 hours
Ethanol	LD50 Dermal	Rabbit	>15800 mg/kg	-
	LD50 Oral	Mouse	3450 mg/kg	-

11 . Toxicological information

	LC50 Inhalation Vapour	Rat	8850 mg/m³	4 hours
Benzene	LD50 Dermal	Rabbit	>8240 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
	LC50 Inhalation Vapour	Rat	13228 ppm	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Gasoline	A3	2B	-	-	-	-
Toluene	A4	3	D	-	-	-
Ethanol	A3	-	-	-	-	-
Benzene	A1	1	A	+	Proven.	+

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : There is a wealth of information about the teratogenic hazards of Toluene in the literature; however, based upon professional judgement regarding the body of evidence, WHMIS classification as a teratogen is not warranted.

Reproductive toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1203	GASOLINE	3	II		-
DOT Classification	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Flammable liquid
Irritating material
Carcinogen

Canada

WHMIS (Canada) : Class B-2: Flammable liquid
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

Canada inventory : All components are listed or exempted.

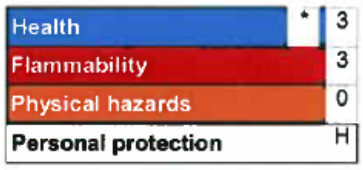
United States inventory (TSCA 8b) : All components are listed or exempted.

Europe inventory : All components are listed or exempted.

16 . Other information

Label requirements : FLAMMABLE LIQUID AND VAPOUR. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CANCER HAZARD - CAN CAUSE CANCER. CONTAINS MATERIAL WHICH MAY CAUSE HERITABLE GENETIC EFFECTS.

Hazardous Material Information System (U.S.A.) :



National Fire Protection Association (U.S.A.) :



References : Available upon request.
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Date of printing : **4/22/2010.**

Date of issue : 22 April 2010

Date of previous issue : 4/22/2010.

Responsible name : **Product Safety - RS**

Indicates information that has changed from previously issued version.

16 . Other information

For Copy of (M)SDS : Internet: www.petro-canada.ca/msds

Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228

For Product Safety Information: (905) 804-4752

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Material Safety Data Sheet

DIESEL FUEL

1 . Product and company identification

Product name : DIESEL FUEL

Synonym : Seasonal Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, D50, D60, P40, P50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special

Code : W104, W293; SAP: 120, 121, 122, 129, 135, 287

Material uses : Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining Diesel has a higher flash point requirement, for safe use in underground mines.

Manufacturer : PETRO-CANADA
P.O. Box 2844
150 – 6th Avenue South-West
Calgary, Alberta
T2P 3E3

In case of emergency : Petro-Canada: 403-296-3000
Canutec Transportation: 613-996-6666
Poison Control Centre: Consult local telephone directory for emergency number(s).

2 . Hazards identification

Physical state : Bright oily liquid.

Odour : Mild petroleum oil like.

WHMIS (Canada) :



Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2B: Material causing other toxic effects (Toxic).

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : WARNING!

COMBUSTIBLE LIQUID AND VAPOUR. CAUSES EYE AND SKIN IRRITATION.

Combustible liquid. Severely irritating to the skin. Irritating to eyes. Keep away from heat, sparks and flame. Do not get in eyes. Avoid breathing vapour or mist. Avoid contact with skin and clothing. Use only with adequate ventilation. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.

Ingestion : Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract.

Skin : Severely irritating to the skin.

Eyes : Irritating to eyes.

Potential chronic health effects

Chronic effects : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

2. Hazards identification

Fertility effects : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis.

See toxicological information (section 11)

3. Composition/information on ingredients

Name	CAS number	%
Kerosine (petroleum), hydrodesulfurized/Fuels, diesel/Fuel Oil No. 2	64742-81-0/68334-30-5/68476-30-2	100

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First-aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product : Combustible liquid

Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Products of combustion : Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), sulphur compounds (H2S), smoke and irritating vapours as products of incomplete combustion.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on fire hazards : Flammable in presence of open flames, sparks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite.

Special remarks on explosion hazards : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Runoff to sewer may create fire or explosion hazard.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Ensure the storage containers are grounded/bonded.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Kerosine (petroleum), hydrodesulfurized	**ACGIH TLV (United States). Absorbed through skin.** TWA: 200 mg/m³ 8 hour(s).
Fuels, diesel	**ACGIH TLV (United States). Absorbed through skin.** TWA: 100 mg/m³, (inhalable fraction and vapour) 8 hour(s).
Fuel oil No. 2	**ACGIH TLV (United States). Absorbed through skin.** TWA: 100 mg/m³, (inhalable fraction and vapour) 8 hour(s).

Consult local authorities for acceptable exposure limits.

8 . Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Recommended: nitrile, neoprene, polyvinyl alcohol (PVA), Viton. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Bright oily liquid.

Flash point : Diesel fuel: Closed cup: ≥40°C (≥104°F)
Marine Diesel Fuel: Closed Cup: ≥60°C (≥140°F)
Mining Diesel: Closed Cup: ≥52°C (≥126°F)

Auto-ignition temperature : 225°C (437°F)

Flammable limits : Lower: 0.7%
Upper: 6%

Colour : Clear to yellow (This product may be dyed red for taxation purposes).

Odour : Mild petroleum oil like.

Odour threshold : Not available.

pH : Not available.

Boiling/condensation point : 150 to 371°C (302 to 699.8°F)

9 . Physical and chemical properties

Melting/freezing point : Not available.

Relative density : 0.80 to 0.88 kg/L @ 15°C (59°F)

Vapour pressure : 1 kPa (7.5 mm Hg) @ 20°C (68°F).

Vapour density : 4.5 [Air = 1]

Volatility : Semivolatile to volatile.

Evaporation rate : Not available.

Viscosity : Diesel fuel: 1.3 - 4.1 cSt @ 40°C (104°F)
Marine Diesel Fuel: 1.3 - 4.4 cSt @ 40°C (104°F)

Pour point : Not available.

Solubility : Insoluble in cold water, soluble in non-polar hydrocarbon solvents.

10 . Stability and reactivity

Chemical stability : The product is stable.

Hazardous polymerisation : Under normal conditions of storage and use, hazardous polymerisation will not occur.

Materials to avoid : Reactive with oxidising agents and acids.

Hazardous decomposition products : May release COx, NOx, SOx, H2S, smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Kerosine (petroleum), hydrodesulfurized	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapour	Rat	>5000 mg/m³	4 hours
Fuels, diesel	LD50 Dermal	Mouse	24500 mg/kg	-
	LD50 Oral	Rat	7500 mg/kg	-
Fuel oil No. 2	LD50 Oral	Rat	12000 mg/kg	-

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Kerosine (petroleum), hydrodesulfurized	A3	-	-	-	-	-
Fuels, diesel	A3	3	-	-	-	-
Fuel oil No. 2	A3	3	-	-	-	-

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1202	DIESEL FUEL	3	III		-
DOT Classification	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Combustible liquid
Irritating material

Canada

WHMIS (Canada) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

Canada inventory : All components are listed or exempted.

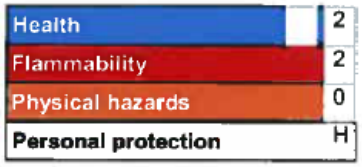
United States inventory (TSCA 8b) : All components are listed or exempted.

Europe inventory : All components are listed or exempted.

16 . Other information

Label requirements : COMBUSTIBLE LIQUID AND VAPOUR. CAUSES EYE AND SKIN IRRITATION.

Hazardous Material Information System (U.S.A.) :



National Fire Protection Association (U.S.A.) :



References : Available upon request.
TMMC Marque de commerce de Petro-Canada - Trademark

Date of printing : 12/17/2009.

Date of issue : 3 July 2009

Date of previous issue : No previous validation.

Responsible name : **Product Safety - DSR**

Indicates information that has changed from previously issued version.

For Copy of (M)SDS : Internet: www.petro-canada.ca/msds

Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228

For Product Safety Information: (905) 804-4752

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Superior Propane
A division of Superior Plus LP

MATERIAL SAFETY DATA SHEET

GUARDIAN

SECTION 1 – PRODUCT INFORMATION

Product Name:	Propane	Supplier:	Superior Propane A Division of Superior Plus LP 1111 - 49th Avenue N.E. Calgary, AB T2E 8V2 Business: (403) 730-7500
Trade Name:	LPG (Liquefied Petroleum Gas), LP-Gas		
Chemical Formula:	C_3H_8		
WHMIS Classification:	Class A – Compressed Gas Class B, Division 1 – Flammable Gas	24-Hour Emergency Contact:	Canutec (613) 996-6666

Application and Use: Propane is commonly used as a fuel for heating, cooking, automobiles, forklift trucks, crop drying and welding and cutting operations. Propane is used in industry as a refrigerant, solvent and as a chemical feedstock.

SECTION 2 – HAZARDOUS INGREDIENTS

COMPONENTS	CAS No	% VOLUME (v/v)	LD_{50} (RAT, ORAL)
Propane	74-98-6	90% -99%	Not Applicable
Propylene	115-07-1	0% - 5%	Not Applicable
Ethane	74-84-0	0% - 5%	Not Applicable
Butane and heavier hydro carbons	106-97-8	0% - 2.5%	Not Applicable

Occupational Exposure Limit:
Based upon animal test data, the acute toxicity of this product is expected to be inhalation: 4 hour LC50 = 280,000 ppm (Rat)

Note: Composition is typical for HD-5 Propane per The Canadian General Standard Board CGSB 3.14 National Standard of Canada. Exact composition will vary from shipment to shipment.

SECTION 3 – CHEMICAL AND PHYSICAL DATA

Form:	Liquid and vapour while stored under pressure	pH:	Not available
Boiling Point:	-42°C @ 1 atm	Solubility in Water :	Slight, 6.1% by volume @ 17.8°C
Freezing Point:	-188°C	Specific Gravity:	0.51 (water = 1)
Evaporation Rate:	Rapid (Gas at normal ambient conditions)	Appearance/Odour:	Colourless liquid and vapour while stored under pressure. Colourless and odourless gas in natural state at any concentration. Commercial propane has an odourant added, ethyl mercaptan, which has an odour similar to boiling cabbage.
Vapour Pressure:	1435 kPa (maximum) @ 37.8°C		
Vapour Density:	1.52 (Air = 1)		
Coefficient of Water/ Oil Distribution:	Not available	Odour Threshold:	4800 ppm

With proper handling, transportation and storage, adding a chemical odourant such as ethyl mercaptan has proven to be a very effective warning device, but all odourants have certain limitations. The effectiveness of the odourant may be diminished by a person's sense of smell, by competing odours and by oxidation which may cause a potentially dangerous situation.

SECTION 4 – FIRE OR EXPLOSION HAZARD

Flash Point: -103.4°C

Method: Closed cup

Flammable Limits: Lower 2.4%, Upper 9.5%

Auto Ignition T emperature: 432°C

Hazardous Combustion Products: Carbon monoxide can be produced when primary air and secondary air are deficient while combustion is taking place.

Fire and Explosive Hazards : Explosive air -vapour allowed to leak to atmosphere.

Sensitivity to Impact: No

Sensitivity to Static Discharge: Yes

Fire Extinguishing Precautions: Use water spray to cool exposed cylinders or tanks. Do not extinguish fire unless the source of the escaping gas that is fueling the fire can be turned off. Fire can be extinguished with carbon dioxide and/or dry chemical (BC). Container metal shells require cooling with water to prevent flame impingement and the weakening of metal. If sufficient water is not available to protect the container shell from weakening, the area will be required to be evacuated. If gas has not ignited, liquid or vapour may be dispersed by water spray or flooding.

Special Fire Fighting Equipment: Protective clothing, hose monitors, fog nozzles, self-contained breathing apparatus.

SECTION 5 – REACTIVITY DATA

Stability: Stable

Conditions T o A void: Keep separate from oxidizing agents. Gas explodes spontaneously when mixed with chloride dioxide.

Incompatibility: Remove sources of ignition and observe distance requirements for storage tanks from combustible material, drains and openings to building.

Hazardous Decomposition Products: Deficient primary and secondary air can produce carbon monoxide.

Hazardous Polymerization: Will not occur.

Superior Propane
A division of Superior Plus LP

GUARDIAN

SECTION 6 – TOXICOLOGICAL PROPERTIES OF MATERIAL

Routes of Entry: Skin Contact, Eye Contact, Inhalation

Inhalation: Simple asphyxiant. No effect at concentrations of 10,000 ppm (peak exposures). Higher concentrations may cause central nervous system disorder and/or damage. Lack of oxygen may cause dizziness, loss of coordination, weakness, fatigue, euphoria, mental confusion, blurred vision, convulsions, breathing failure, coma and death. Breathing high vapour concentrations (saturated vapours) for a few minutes may be fatal. Saturated vapours may be encountered in confined spaces and/or under conditions of poor ventilation. Avoid breathing vapours or mist.

Skin and Eye Contact: Exposure to vapourizing liquid may cause frostbite (cold burns) and permanent eye damage.

Ingestion: Not considered to be a hazard.

Acute Exposure: Contact with Liquefied Petroleum Gas may cause frostbite or cold burns. Propane acts as a simple asphyxiant as oxygen content in air is displaced by the propane. At increasing concentration levels, propane may cause dizziness, headaches, loss of coordination, fatigue, unconsciousness and death.

Chronic Exposure: No reported effects from long term low level exposure.

Sensitization to Product: Not known to be a sensitizer.

Occupational Exposure Limits: American Conference of Governmental Industrial Hygienists (ACGIH) lists as a simple asphyxiant.

ACGIH TLV: 1000 ppm

Carcinogenicity, Reproductive Toxicity, Teratogenicity, Mutagenicity: No effects reported.

Other Toxicological Effects: None

SECTION 7 – PREVENTATIVE MEASURES

Eyes:	Safety glasses or chemical goggles are recommended when transferring product.
Skin:	Insulated gloves required if contact with liquid or liquid cooled equipment is expected. Wear gloves and long sleeves when transferring product.
Inhalation:	Where concentration in air would reduce the oxygen level below 18% air or exceed occupational exposure limits in section 6, self-contained breathing apparatus is required.
Ventilation:	Use in well-ventilated areas. Use with explosion proof mechanical ventilation in confined spaces or poorly ventilated areas.

SECTION 8 – EMERGENCY AND FIRST AID PROCEDURES

Eyes:	Should eye contact with liquid occur, flush eyes with lukewarm water for 15 minutes. Obtain immediate medical care.
Skin:	In case of "Cold Burn" from contact with liquid, immediately place affected area in lukewarm water and keep at this temperature until circulation returns. If fingers or hands are frostbitten, have the victim hold his hand next to his body such as under the armpit. Obtain immediate medical care.
Ingestion:	None considered necessary.
Inhalation:	Remove person to fresh air. If breathing is difficult or has stopped, administer artificial respiration. Obtain immediate medical care.
Spill or Leak:	Eliminate leak if possible. Eliminate source of ignition. Ensure cylinder is upright. Disperse vapours with hose streams using fog nozzles. Monitor low areas as propane is heavier than air and can settle into low areas. Remain upwind of leak. Keep people away. Prevent vapour and/or liquid from entering into sewers, basements or confined areas.

SECTION 9 – TRANSPORTATION, HANDLING AND STORAGE

- Transport and store cylinders and tanks secured in an upright position in a ventilated space away from ignition sources (so the pressure relief valve is in contact with the vapour space of the cylinder or tank).
- Cylinders that are not in use must have the valves in the closed position and be equipped with a protective cap or guard.
- Do not store with oxidizing agents, oxygen, or chlorine cylinders.
- Empty cylinders and tanks may contain product residue. Do not pressurize, cut, heat or weld empty containers.
- Transport, handle and store according to applicable federal and provincial codes and regulations.

Transportation of Dangerous Goods (TDG)
TDG Classification: Flammable Gas 2.1

TDG Shipping Name: Liquefied Petroleum Gas (Propane)

PIN Number: UN1075

SECTION 10 – PREPARATION INFORMATION

Prepared by: Superior Propane
Health Safety and Environment Team

Telephone: (403) 730-7500
Revision: March 1, 2008
Supersedes: March 24, 2005

The information contained herein is believed to be accurate. It is provided independently of any sale of the product. It is not intended to constitute performance information concerning the product. No express warranty, implied warranty of merchantability or fitness for a particular purpose is made with respect to the product information contained herein.

SAFETY DATA SHEET

JET A/A-1 AVIATION TURBINE FUEL

000003001081

Version 2.0 | Revision Date 2016/07/20 | Print Date 2016/07/20

SECTION 1. IDENTIFICATION

Product name	:	JET A/A-1 AVIATION TURBINE FUEL
Synonyms	:	Jet A-1; Jet A-1-DI; Aviation Turbine Kerosene (ATK); JP-8; NATO F-34; Jet F-34; Aviation Turbine Fuel, Kerosene Type (CAN/CGSB 3.23 & CAN/CGSB 3.24)
Product code	:	101851, 100123
Manufacturer or supplier's details		Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary Alberta T2P 3E3 Canada
Emergency telephone number		Suncor Energy: +1 403-296-3000; Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use	:	Used as aviation turbine fuel. May contain a fuel system icing inhibitor. In the arctic, Jet A-1 may also be used as diesel fuel (if it contains a lubricity additive) and heating oil.
Prepared by	:	Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Clear liquid.
Colour	Clear and colourless
Odour	Kerosene-like.

GHS Classification

Flammable liquids	:	Category 3
Skin irritation	:	Category 2
Reproductive toxicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 3 (Central nervous system)
Aspiration hazard	:	Category 1

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GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
May cause drowsiness or dizziness.
Suspected of damaging fertility or the unborn child.

Precautionary statements : **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ eye protection/ face protection.
Use personal protective equipment as required.
Response:
IF SWALLOWED: Immediately call a POISON CENTER/doctor.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
Do NOT induce vomiting.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Storage:
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Primary Routes of Entry : Eye contact
Ingestion
Inhalation

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Skin contact

Inhalation	:	Inhalation may cause central nervous system effects. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
Skin	:	May irritate skin.
Eyes	:	May irritate eyes.
Ingestion	:	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Aspiration hazard if swallowed - can enter lungs and cause damage.
Aggravated Medical Condition	:	None known.

Other hazards

None known.

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
kerosine (petroleum)	8008-20-6	90 - 100 %
2-(2-methoxyethoxy)ethanol	111-77-3	0 - 0.2 %

SECTION 4. FIRST AID MEASURES

If inhaled	:	Move to fresh air. Artificial respiration and/or oxygen may be necessary. Seek medical advice.
In case of skin contact	:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing

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		and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash clothing before reuse. Seek medical advice.
In case of eye contact	:	Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
If swallowed	:	Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice.
Most important symptoms and effects, both acute and delayed	:	First aider needs to protect himself.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Carbon dioxide (CO2) Water fog. Foam
Unsuitable extinguishing media	:	Do NOT use water jet.
Specific hazards during firefighting	:	Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.

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Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Non-sparking tools should be used. Ensure adequate ventilation. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Avoid contact with skin, eyes and clothing. Do not ingest. Keep away from heat and sources of ignition. Keep container closed when not in use.
Conditions for safe storage	:	Store in original container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in a dry, cool and well-ventilated place. Keep in properly labelled containers. To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
kerosine (petroleum)	8008-20-6	TWA	100 mg/m3	NIOSH REL
		TWA	500 ppm 2,000 mg/m3	OSHA Z-1
		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
		TWA	400 ppm 1,600 mg/m3	OSHA P0

Engineering measures	:	Use only in well-ventilated areas. Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

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Respiratory protection	:	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Filter type	:	A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.
Hand protection		
Material	:	polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
Remarks	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	:	Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	Wash contaminated clothing before re-use.
Hygiene measures	:	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear liquid.
Colour	:	Clear and colourless
Odour	:	Kerosene-like.
Odour Threshold	:	No data available

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pH	:	No data available
Pour point	:	-51 °C (-60 °F)No data available
Boiling point/boiling range	:	140 - 300 °C (284 - 572 °F)
Flash point	:	> 38 °C (100 °F) Method: Tagliabue
Auto-Ignition Temperature	:	210 °C (410 °F)
Evaporation rate	:	No data available
Flammability	:	Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite. May accumulate in confined spaces.
Upper explosion limit	:	5 %(V)
Lower explosion limit	:	0.7 %(V)
Vapour pressure	:	5.25 mmHg (20 °C / 68 °F)
Relative vapour density	:	4.5
Relative density	:	0.775 - 0.84 (15 °C / 59 °F)
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Viscosity, kinematic	:	1.0 - 1.9 cSt (40 °C / 104 °F)
Explosive properties	:	Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	:	Hazardous polymerisation does not occur. Stable under normal conditions.
Conditions to avoid	:	Extremes of temperature and direct sunlight.

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Incompatible materials	:	Reactive with oxidising agents, acids and alkalis.
Hazardous decomposition products	:	May release COx, NOx, SOx, aldehydes, acids, ketones, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity	:	Remarks: No data available
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	Remarks: No data available

Components:

kerosine (petroleum):

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg,
Acute inhalation toxicity	:	LC50 (Rat): > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg,

Skin corrosion/irritation

Product:
Remarks: No data available

Serious eye damage/eye irritation

Product:
Remarks: No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

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Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to algae	:	Remarks: No data available
Toxicity to bacteria	:	Remarks: No data available

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labelled prior to recycling or disposal. Send to a licensed waste management company. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

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Contaminated packaging : Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 1863
Proper shipping name	:	Fuel, aviation, turbine engine
Class	:	3
Packing group	:	III
Labels	:	Class 3 - Flammable Liquid
Packing instruction (cargo aircraft)	:	366

IMDG-Code

UN number	:	UN 1863
Proper shipping name	:	FUEL, AVIATION, TURBINE ENGINE
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

National Regulations

49 CFR

UN/ID/NA number	:	UN 1863
Proper shipping name	:	Fuel, aviation, turbine engine
Class	:	3
Packing group	:	III
Labels	:	Class 3 - Flammable Liquid
ERG Code	:	128
Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION

The components of this product are reported in the following inventories:

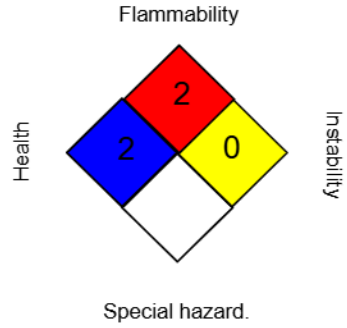
DSL	On the inventory, or in compliance with the inventory
TSCA	All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
EINECS	On the inventory, or in compliance with the inventory

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SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	2
PHYSICAL HAZARD	0
PERSONAL PROTECTION	H

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

For Copy of (M)SDS : Internet: www.petro-canada.ca/msds
Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228
For Product Safety Information: 1 905-804-4752

Prepared by : Product Safety: +1 905-804-4752

Revision Date : 2016/07/20

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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Appendix B – NT/NU Spill Report Form

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND
OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
Tel: (867) 920-8130 • Fax: (867) 873-6924 • Email: spills@gov.nt.ca

REPORT LINE USE ONLY

A	Report Date: MM | DD | YY	Report Time:	☐ Original Spill Report OR ☐ Update # _____ to the Original Spill Report	**Report Number:**
B	Occurrence Date: MM | DD | YY	Occurrence Time:		
C	Land Use Permit Number (if applicable):		Water Licence Number (if applicable):	
D	Geographic Place Name or Distance and Direction from the Named Location:		Region: ☐ NT ☐ Nunavut ☐ Adjacent Jurisdiction or Ocean	
E	Latitude: _____ Degrees _____ Minutes _____ Seconds		Longitude: _____ Degrees _____ Minutes _____ Seconds	
F	Responsible Party or Vessel Name:		Responsible Party Address or Office Location:	
G	Any Contractor Involved:		Contractor Address or Office Location:	
H	Product Spilled: ☐ Potential Spill	Quantity in Litres, Kilograms or Cubic Metres:	U.N. Number:	
I	Spill Source:	Spill Cause:	Area of Contamination in Square Metres:	
J	Factors Affecting Spill or Recovery:	Describe Any Assistance Required:	Hazards to Persons, Property or Environment:	
K	Additional Information, Comments, Actions Proposed or Taken to Contain, Recover or Dispose of Spilled Product and Contaminated Materials:			

L	Reported to Spill Line by:	Position:	Employer:	Location Calling From:	Telephone:
M	Any Alternate Contact:	Position:	Employer:	Alternate Contact Location:	Alternate Telephone:

REPORT LINE USE ONLY

N	Received at Spill Line by:	Position:	Employer:	Location Called:	Report Line Number:

Lead Agency: ☐ EC ☐ CCG/TCMSS ☐ GNWT ☐ GN ☐ ILA ☐ AANDC ☐ NEB ☐ Other: _____

Significance: ☐ Minor ☐ Major ☐ Unknown

File Status: ☐ Open ☐ Closed

Agency:	**Contact Name:**	**Contact Time:**	**Remarks:**
Lead Agency:			
First Support Agency:			
Second Support Agency:			
Third Support Agency:			

Instructions for Completing the NT-NU Spill Report Form

This form can be filled out electronically and faxed to the spill line at 867-873-6924. Commencing on January 2, 2007, the form can also be e-mailed as an attachment to spills@gov.nt.ca. Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call. Spills can still be phoned in by calling collect at 867-920-8130.

A. Report Date/Time	The actual date and time that the spill was reported to the spill line. If the spill is phoned in, the Spill Line will fill this out. **Please do not fill in the Report Number**: the spill line will assign a number after the spill is reported.
B. Occurrence Date/Time	Indicate, to the best of your knowledge, the exact date and time that the spill occurred. Not to be confused with the report date and time (see above).
C. Land Use Permit Number /Water Licence Number	This only needs to be filled in if the activity has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been issued. Applies primarily to mines and mineral exploration sites.
D. Geographic Place Name	In most cases, this will be the name of the city or town in which the spill occurred. For remote locations – outside of human habitations – identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. **You must include the geographic coordinates** (Refer to Section E).
E. Geographic Coordinates	This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.
F. Responsible Party Or Vessel Name	This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. **Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.**
G. Contractor involved?	Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.
H. Product Spilled	Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B)
I. Spill Source	Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m^2)
J. Factors Affecting Spill	Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or equipment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.
K. Additional Information	Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. **Please number the pages to ensure that recipients can be certain that they received all pertinent documents.** If only the spill report form was filled out, number the form as "Page 1 of 1".
L. Reported to Spill Line by	Include your full name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space.
M. Alternate Contact	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
N. Report Line Use Only	**Leave Blank**. This box is for the **Spill Line's use only.**

Appendix C – Immediately Reportable Spill Quantities

Reportable Quantities for NU Spills

Note: L = litre; kg = kilogram; PCB = Polychlorinated Biphenyls; ppm = parts per million

Substance	Reportable Quantity	TDG Class
Compressed gas (Flammable)	Any amount of gas from containers with a capacity grater than 100L	2.1
Flammable liquid	≥100 L	3.1/3.2/3.3
Other contaminants--for example, crude oil, drilling fluid, produced water, waste or spent chemicals, used or waste oil, vehicle fluids, wastewater.	≥ 100 L or 100 kg	None
Reported releases or potential releases of any size that: are near or in an open water body; are near or in a designated sensitive environment or habitat; Pose an imminent threat to human health or safety; or Pose an imminent threat to a listed species at risk or its critical habitat	Any amount	None

Management Plan

Erosion and Sediment Control Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut (Kuukyoak, 2026)

KUUKYOAK

NUNAVUT IMPACT REVIEW BOARD (NIRB)

Erosion and Sediment Control Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut

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

September 2026

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1.0 Introduction

1.1 Key Information

This management plan applies to the operations as part of remediation work being carried out at the Isachsen High Arctic Weather Station (HAWS) Remediation Project (the Project) by Environment and Climate Change Canada (ECCC), and their contractors. This Erosion and Sediment Control Plan (Plan) is being submitted to support the Nunavut Impact Review Board (NIRB) review process. The contracting authority for this project is Public Services and Procurement Canada (PSPC). This current version of the Plan is conceptual in nature, and a more comprehensive plan will be submitted by the successful Remediation Contractor with specific means and methods. This current plan is considered as the minimum standard that submittals will be measured against.

Table 1 provides key information relating to the project.

Table 1. Key Project Information

Project Name and Location	Isachsen High Arctic Weather Station (HAWS) Remediation Project (the Project) 78° 46’ 40” N, 103° 31’ 40” W
Federal Department	Environment and Climate Change Canada
Contact	Owen Wade Tel: 613-981-8652 owen.wade@ec.gc.ca
Project Office Location	351 St. Joseph Boulevard, 18th Floor, Gatineau, QC K1A 0H3
Contractor	TBC
Contractor Contact Information	TBC
Contractor Address	TBC

1.2 Site Description

The Isachsen HAWS property (Site) is within the Directory of Federal Real Property (DFRP) land reserve (DFRP # 075272) which has a total area of approximately 450 hectares (ha). The Site is centered at a latitude of 78 degrees 46 minutes 40 seconds N and longitude of 103 degrees 31 minutes 40 seconds W

facing Louise Bay, on the west-facing side of Ellef Ringnes Island, NU. The Site is occupied by approximately 22 permanent structures with associated infrastructure, equipment, and supplies. Other features previously identified at the Site, in addition to the 22 structures, include a 1,500-metre-long runway, former water and sewage infrastructure, fuel storage and distribution facilities, power generation equipment, two on-site waste disposal areas (WDAs), fuels tanks, thousands of empty/partially empty drums, other abandoned equipment, and debris.

Originally established in 1947 as one of five joint Canadian–American High Arctic Weather Stations, the Site supported meteorological monitoring, including upper-atmosphere observations using weather balloons. Operations transitioned fully to Canada in 1972 and continued until the station was decommissioned in 1978. Since then, the site has operated as an automated weather station and has intermittently supported scientific research and training activities. Due to its extreme remoteness, access has been almost exclusively by air.

1.3 Project Description

The Project is expected to span until 2030. A summary of the Project related activities is provided in the below:

- Mobilization of personnel, equipment, materials and support facilities, including fuel;
- Collection of borrow material (aggregate) to produce airstrip upgrades, road upgrades, construct a new engineered on-site landfill, cap the existing waste disposal areas, construct a camp pad and temporary waste storage area, and general site re-grading.
- Construction of a temporary accommodations camp;
- Construction of a new engineered landfill designed to accommodate the existing waste on site.
- Demolition of structures and buildings including removal and management of hazardous materials;
- Collection, cleaning and crushing of barrels;
- Collection and sorting of debris;
- Segregation, consolidation, packaging and containerization of all equipment, materials and debris (hazardous and non-hazardous);
- Deconstruction of the temporary accommodations camp and packaging for removal;
- Demobilization of unused fuel brough to site for project activities, materials and equipment off-site including transportation of containerized soil and hazardous/non-hazardous waste and debris; and,
- Disposal of waste materials in the on-site engineered landfill or off-site facilities.

1.4 Roles and Responsibilities

Table 2 outlines the roles and responsibilities for personnel working on-site with respect to the management of the potential risks associated with erosion and sediment control.

Table 2. Roles and Responsibilities

Role	Responsibility
Contractor Project Manager	Design and oversee work methods to control erosion and sediment generation on site and ensure the necessary resources are available to implement this plan.
Site Supervisor	Implement and supervise the work at the site as set out in this plan.
	Ensure that monitoring inspections are conducted throughout the day and at the beginning and end of every workday.
	Consult with Project Manager for mitigation measures in response to potential issues.
	Maintain communications with Project Manager to ensure monitoring and control measures are appropriate.
Employees, sub-contractor, and visitors	Follow the requirements set out in this plan.

1.5 Key Contacts

Table 3 provides contact information for key personnel related to the Project.

Table 3. Key Contacts

Name	Position	Contact #	Organization
Owen Wade	ECCC Project Manager	Tel: 613-981-8652 Owen.wade@ec.gc.ca	ECCC - 351 St. Joseph Boulevard, 18th Floor, Gatineau, QC K1A 0H3
Ryan Breivik	PSPC Project Manager	Tel: 587-443-2699 Ryan.breivik@tpsgc-pwgsc.gc.ca	PSPC - 9700 Jasper Avenue, Edmonton, AB T5J 4C3

Name	Position	Contact #	Organization
TBC	Contractor Project Manager		
TBC	Contractor Environment, Health, and Safety Coordinator		
TBC	Site Supervisors		

1.6 Purpose and Scope

The purpose of this Plan is to outline general measures to minimize soil erosion and sediment transport during remediation activities at the Site. This Plan is intended to reduce the potential for sediment migration to surrounding land and waterbodies during ground disturbance, excavation, material handling, and grading activities.

This Plan is conceptual in nature and is intended to define the minimum standard for erosion and sediment control. Detailed, site-specific erosion and sediment control measures, including locations, materials, and installation methods, will be developed and implemented by the Contractor based on final design and site conditions.

1.7 Training

Employees and subcontractors will be trained on the sediment and erosion control measures outlined in this Plan and will be responsible for installing the measures as required under the direction of the Site Supervisor. Personnel will also be required to be trained on any Safe Work Procedures that are associated with the installation of these sediment and erosion control measures. Visitors to the site will be given an induction on any erosion and sediment control measures relevant to their work.

2.0 Erosion and Sediment Control Measures

2.1 Potential Risk Scenarios

The following scenarios have the potential to cause erosion and sediment migration on this Project:

- Erosion due to wind action on exposed soil
- Erosion due to rainstorm events
- Erosion associated with demolition, access road construction and hauling activities
- Erosion from excavated and stockpiled material

- Work near water
- Erosion due to other reclamation activities

Prior to remediation activities, an assessment of sensitive areas shall be conducted, with follow up recommendations on control measures and monitoring frequency. The various erosion and sediment control measures are discussed in Section 2.4.

2.2 Water Management

To effectively control and manage surface water on the site, particular attention must be given to how water enters, traverses, and leaves the site. Additionally, emphasis must be placed on events that are associated with increased volumes of water such as significant weather events, freshet and intermittent snowmelt. To effectively manage the surface water on site, ECCC and the remediation contractor will adhere to the water management practices set out in this plan. The following high-level mitigations should be implemented during project execution with respect to water management:

- All activities performed around an area of environmental concern (e.g. waterbody) should be scheduled to occur during periods associated with a lower risk of erosion, such as dry periods.
- Materials likely to increase sediment load, such as topsoil and fine-grained material, should not be moved during heavy rain events (if possible).
- Areas with high potential for erosion will be inspected to ensure controls are in place and maintained prior to anticipated rain events.
- Ponding or any other standing water should be controlled and eliminated whenever possible. If standing water is observed on the site, a plan should be developed and implemented by the Site Supervisor for its removal.
- Features located near the shoreline should not be disturbed until adequate erosion controls are in place to prevent the mobilization of sediment. Any work performed near the shoreline should be monitored.
- Work shall be conducted in a manner that limits the alteration of existing water flow paths and avoids installation of non-essential erosion and sediment controls.

Water that originates from within the site boundaries through precipitation or groundwater discharge shall be regularly assessed for turbidity. Any sediment laden water in exceedance of the discharge criteria will be contained or filtered to prevent the release of sediments off-site. Any methods for containment or retention of sediment laden water shall be implemented under the direction of the Site Supervisor, and may include the following:

- Diverting surface run-off via diversion berms or ditches to sediment traps or sumps
- Pumping of sediment laden water in small quantities to a vegetated surface which has been prepared with filtration measures, such as dewatering bags, to allow for natural infiltration
- Installation of silt fencing or wattles to prevent surface flow from leaving the Project footprint without interception

2.3 Stockpile Management

Based on the volume of aggregate required as part of the overall remediation, stockpiles will likely be required to temporarily store aggregate produced from the on-site borrow source. As stockpiles are generally composed of uncompacted material that sits above grade, there is an increased risk of erosion, particularly if the aggregate is composed of fine-grained material. To mitigate risk associated with stockpiles, the following measures will be implemented under the direction of the Site Supervisor:

- Material will be stockpiled and placed in a suitable designated location where erosion potential is minimized through the addition of erosion and sediment control measures to prevent the mobilization and transport of the stored material.
- If stockpiles are utilized for extended periods and the potential for soil transport exists, erosion and sediment control measures will be installed around the toe of the stockpile to prevent soil transport.
- Where soil is stored in a berm or large stockpile, gaps in the berm should be installed to facilitate seepage and runoff. Erosion and sediment control measures should be installed to control this runoff.

2.4 Site-Specific Control Measures

The Site is located in a High Arctic environment characterized by limited vegetation cover, exposed soils, permafrost conditions, and short active seasons. Natural drainage patterns may be poorly defined, and erosion risk is typically associated with localized disturbance, snowmelt, precipitation events, and wind.

Due to these conditions, erosion and sediment control measures will focus on minimizing disturbance, protecting permafrost, managing surface runoff, and stabilizing exposed materials. Table 4 presents a list of the general measures to be implemented.

Table 4. General Erosion and Sediment Control Measures

Measure	Details
Minimization of Disturbance	Disturbance of soils will be limited to areas required for remediation activities. Previously disturbed areas will be used where practicable.
Material Stockpiling	Where excavation is required, soils will be temporarily stockpiled in stable areas located outside of natural drainage pathways and away from waterbodies to reduce the potential for erosion and sediment transport.
Waterbody Setbacks	A minimum setback distance of 100 m will be maintained from waterbodies for soil disturbance, stockpiling, and material handling activities, where feasible. Direct discharge of sediment-laden water to waterbodies will not be permitted.

Measure	Details
Sediment Control	Where required, temporary controls such as silt fencing, berms, snow or soil windrows, or other suitable barriers will be installed downgradient of disturbed areas to intercept and contain sediment.
Snow Management	Snow will not be stockpiled in locations where meltwater may mobilize sediment into surrounding areas or waterbodies. Snow management will consider anticipated meltwater flow paths.

In addition to the high-level erosion and sediment control measures listed in Table 4, the following sections describe specific control measures in more detail, including considerations for selection and installation.

2.4.1 Silt Fencing

Silt fencing is a class of products comprised of woven geotextile mounted vertically with rods or stakes, which acts to intercept surface water runoff and prevents the passage of sediments while allowing water to pass. This type of fencing is suitable for areas which see sediment laden water in non-concentrated surface flows. The type of fencing installed should be based on the amount of surface runoff expected at each location based on the manufacturers' instructions. Sediment accumulating at the base of a silt fence should be removed on a regular basis to maintain function.

2.4.2 Sediment Traps

Sediment traps may be used to retain sediment laden water on-site to allow sediment to drop out of suspension. Sediment traps are typically located at the end of ditch lines or diversion berms, and prior to water leaving the site. Sediment traps may require armouring at the inlet and should involved either a rock apron or filtration measure such as wattles or spring berms at the outlet point. Accumulated sediments should be removed on a regular basis to ensure the sediment trap maintains capacity.

2.4.3 Fibre Logs (Wattles)

Fibre logs (wattles) may be used similarly to silt fencing to intercept non-concentrated sheet flows and should be installed as directed by the manufacturers' instructions. Wattles are typically made from straw or wood fibres. Small sections of wattles may be used as temporary check dams in ditches, or as filters at the outlet of sediment traps. Wattles and logs may also be used to divert small amount of surface flow to sediment traps.

2.4.4 Spring Berms

Spring berms are a fabric around a tubular frame with skirts extending from both the upstream and downstream sides of the tube. Spring berms may be used as check dams, energy dissipators, and

filtration devices (similarly to wattles) on the site. Spring berms should be installed in accordance with the manufacturers' instructions.

2.4.5 Rolled Erosion Control Products (RECPs)

RECPs include products that are made of either natural fibres or synthetic materials formed into a blanket or mat. RECPs may be placed on slopes or edges of features or in ditches to prevent sediment mobilization. RECPs should be installed in accordance with the manufacturers' instructions. When used in ditches or in areas encountering higher flows, check slots should be incorporated into the installation.

2.4.6 Drainage Ditches

Ditches may be used on-site to transport larger quantities of water to a sump or sediment trap. Ditches are best utilized to intercept the flow of water and redirect it to a location where it may be retained and released gradually. Drainage ditches should consist of a channel and an appropriately sized berm on the downslope side. Ditches should be designed to include a stable outlet into a sediment trap or sump and should not concentrate surface flows beyond the capacity of the receiving erosion and sediment control measure. Check dams may be required within ditches to control water velocity and erosion potential. Temporary drainage ditches should be of a sufficient size to accommodate a 10-year rain event.

2.4.7 Berms

Berms may be utilized to prevent the passage of water to a feature, or to redirect water to an erosion and sediment control structure. Berms may be constructed at the crest of a slope to prevent excess water from passing over the slope, reducing the risk of erosion. Berms should be installed along with a sediment trap or sump.

2.4.8 Check Dams

Check dams may be constructed out of sandbags, rocks, poly ridges or other devices such as spring berms. Check dams are installed in ditches and drainage channels to reduce the velocity of water and prevent scouring and erosion of the ditch. Clean non-acid generating aggregate that has been approved by the Owner's Representative may also be used for check dam construction. Check dams should be inspected regularly and cleaned as needed by a trained crew.

2.4.9 Dust Control

Dust production on all access trails and stockpiles should be kept to a minimum throughout project execution. During dry periods with excessive dust generation potential, water should be sprayed onto travel surfaces to reduce the risk of airborne particulates.

2.4.10 Winterization

Project work is expected to occur over a multi-year period, therefore the impact of winter climate conditions needs to be considered with respect to erosion and sediment control measures. Erosion and sediment control measures should address the possibility of periods of melting and frost heave. Snow accumulation on the site may also be managed to reduce the amount of potential melt, as this may help reduce the erosion risk during freshet. Prior to melt, particular notice should be taken of any installed erosion and sediment control measures that may have been damaged by snow loading over the winter.

2.4.11 Freshet

Prior to the onset of freshet each year, erosion and sediment control measures must be installed to manage the increased surface runoff associated with this period. It is typically during this melt period when the ground softens and the potential for erosion on the site is greater. Additional site inspections during freshet should be performed as required to verify the function of erosion and sediment control measures.

3.0 Inspection and Maintenance

Disturbed areas and erosion and sediment control measures will be inspected on a regular basis during active work and following significant precipitation or snowmelt events. Inspections will focus on identifying evidence of erosion, sediment migration, and effectiveness of installed controls. Any deficiencies or failures in control measures will be addressed promptly through repair, replacement, or implementation of additional measures as required. Accumulated sediment will be removed from control features as necessary to maintain effectiveness.

A monitoring program will be put in place to ensure the effectiveness of all erosion and sediment control measures. An erosion assessment will first be performed prior to commencement of work to determine the risk of erosion, determine control measures to put in place, type of monitoring and frequency of monitoring required during the work. The assessment includes an evaluation of the likelihood of erosion and then recommends erosion and sediment control measures including the type of controls to install, type of monitoring required and the frequency of the monitoring required.

Copies of documentation related to erosion and sediment control will be maintained on-site for the duration of the Project. A close-out assessment will be conducted to evaluate the stabilization of work areas following the remediation to determine if further monitoring and/or erosion protection will be required. The close-out assessment will be conducted by a team composed of the Site Supervisor and Owner's Representative. If the assessment concludes that all work areas have been adequately stabilized, erosion and sediment controls can be removed. If the assessment concludes that further monitoring is required to verify stability of the area, a monitoring plan will be developed and incorporated into the overall Long-Term Monitoring for the Site.

4.0 Adaptive Management

Erosion and sediment control measures will be adapted as required based on observed site conditions, weather events, and the effectiveness of implemented controls. The Contractor will be responsible for refining and implementing site-specific measures to ensure effective erosion and sediment control throughout the Project.

The remediation contractor will keep contingency supplies readily available on-site. The Site Supervisor will determine the type and quantity of supplies based on the type of work and the extent of disturbed areas.

Management Plan

Emergency Response Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut (Kuukyoak, 2026)

KUUKYOAK

NUNAVUT IMPACT REVIEW BOARD (NIRB)

Emergency Response Plan: Isachsen High Arctic Weather Station (HAWS), Nunavut

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

September 2026

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1.0 Introduction

This management plan applies to the operations as part of remediation work being carried out at the Isachsen High Arctic Weather Station (HAWS) Remediation Project (the Project) by Environment and Climate Change Canada (ECCC), and their contractors. This Emergency Response Plan (Plan) is being submitted to support the Nunavut Impact Review Board (NIRB) review process. The contracting authority for this project is Public Services and Procurement Canada (PSPC). This current version of the Plan is conceptual in nature, and a more comprehensive plan will be submitted by the successful Remediation Contractor with specific means and methods. This current plan is considered as the minimum standard that submittals will be measured against.

1.1 Purpose and Scope

The purpose of this Plan is to provide a plan of action for unforeseeable emergency events during the Project. The Plan identifies key response personnel and their roles and responsibilities in the event of an emergency, as well as the equipment and other resources available to respond. The Plan has been prepared to ensure quick access to information required in responding to an emergency. This document is considered to be the minimum standard for emergency response that Kuukyoak requires of itself and its contractors for the duration of the Project.

All personnel will be made familiar with the Plan through a formal orientation prior to accessing site. Knowledge of site-specific emergency response procedures will be enhanced by separate and regularly scheduled safety meetings. Training sessions will be provided by the Contractor to ensure employees understand the steps to be undertaken in the event of an emergency and how to make use of the available equipment and supplies.

The Contractor will be required to submit a Site-Specific Health and Safety Plan (SSHSP) to Kuukyoak for review following contract award. This Plan is considered a component of the SSHSP and is required to contain the following minimum information:

- A description of pre-emergency planning.
- Personnel roles, lines of authority and communication, emergency phone numbers.
- Emergency alerting and response procedures.
- Evacuation routes and procedures, safe distances and places of refuge.
- Directions/methods of getting to nearest medical facilities.
- Emergency decontamination procedures.
- Emergency medical treatment and First Aid.

- Emergency equipment and materials: Include and provide at minimum booms (sorbent and containment), sorbents for cleanup, fire extinguishers for A-B-C fires, overpacks for contaminated soils, pumps, hand shovels, picks and containment barriers, such as plastic sheeting.
- Emergency protective equipment: Include at minimum clothing, protective suits, respirators, etc. to comply with potential emergency conditions and in accordance with NIOSH guidelines.
- Procedures for reporting incidents.
- Spill response and containment plans for all materials that could potentially be spilled.

1.2 Site Description

The Isachsen HAWS property (Site) is within the Directory of Federal Real Property (DFRP) land reserve (DFRP # 075272) which has a total area of approximately 450 hectares (ha). The Site is centered at a latitude of 78 degrees 46 minutes 40 seconds N and longitude of 103 degrees 31 minutes 40 seconds W facing Louise Bay, on the west-facing side of Ellef Ringnes Island, NU. The Site is occupied by approximately 22 permanent structures with associated infrastructure, equipment, and supplies. Other features previously identified at the Site, in addition to the 22 structures, include a 1,500-metre-long runway, former water and sewage infrastructure, fuel storage and distribution facilities, power generation equipment, two on-site waste disposal areas (WDAs), fuels tanks, thousands of empty/partially empty drums, other abandoned equipment, and debris.

Originally established in 1947 as one of five joint Canadian–American High Arctic Weather Stations, the Site supported meteorological monitoring, including upper-atmosphere observations using weather balloons. Operations transitioned fully to Canada in 1972 and continued until the station was decommissioned in 1978. Since then, the site has operated as an automated weather station and has intermittently supported scientific research and training activities. Due to its extreme remoteness, access has been almost exclusively by air.

1.3 Project Description

The Project is expected to span until 2030. A summary of the Project related activities is provided in the below:

- Mobilization of personnel, equipment, materials and support facilities, including fuel;
- Collection of borrow material (aggregate) to produce airstrip upgrades, road upgrades, construct a new engineered on-site landfill, cap the existing waste disposal areas, construct a camp pad and temporary waste storage area, and general site re-grading.
- Construction of a temporary accommodations camp;
- Construction of a new engineered landfill designed to accommodate the existing waste on site.
- Demolition of structures and buildings including removal and management of hazardous materials;

- Collection, cleaning and crushing of barrels;
- Collection and sorting of debris;
- Segregation, consolidation, packaging and containerization of all equipment, materials and debris (hazardous and non-hazardous);
- Deconstruction of the temporary accommodations camp and packaging for removal;
- Demobilization of fuel, materials and equipment off-site including transportation of containerized soil and hazardous/non-hazardous waste and debris; and
- Disposal of waste materials in the on-site engineered landfill or off-site facilities.

2.0 Organization and Responsibilities

2.1 Emergency Response Coordinator (ERC)

The on-site Health and Safety Coordinator is appointed the ERC. The ERC is responsible for implementing the Plan, coordinating the response and communication. In the absence of the on-site Health and Safety Coordinator, the Site Superintendent assumes the role of the ERC.

2.2 Emergency Communications and Contact Information

If there is an emergency situation, the site radio will be used to inform the ERC, Site Superintendent and Wildlife Monitor. All other personnel are to stop work and wait for instructions. A team member other than the EMT will notify the Kuukyoak Project Manager and back-up Project Manager by satellite phone when an emergency incident has or is occurring. A copy of the emergency contact list will be with every satellite phone.

The on-site communication procedures for emergency situations are outlined below. Additional details will be provided by the Contractor.

Polar Bear:

Radio call – “Bear, Bear, Bear”

Wildlife Monitor will respond, assess the situation and provide further instruction to the work crew. Deterrents will be used to encourage the bear to leave the work area.

Medical Emergency:

Radio call – “Medical Emergency, Medical Emergency, Medical Emergency”

ERC will respond with Emergency Medical Technician (EMT). EMT will assess and determine if off-site medical attention is required. If it is required, an air ambulance will be called to transport the injured party to Resolute Bay, and then to the Qikiqtani General Hospital in Iqaluit, NU.

Hazardous Material Spill/Fire

Radio call – "Spill, Spill, Spill" or "Fire, Fire, Fire"

ERC will respond, assess the situation and provide further instructions. Initial response will include:

- Ensure safety of all personnel.
- Assess spill hazards and risks.
- Remove all sources of ignition.
- Stop the spill if safe to do so (e.g. shut of pump, replace cap, tip drum upward, patch leaking hole). Use the contents of the nearest spill kit to aid in stopping the spill. Tyvek suits and chemical master gloves will be located in the spill kit and should be worn immediately if there is any risk of chemical contact.
- Contain the spill – use contents of spill kits to place sorbent materials on the spill or use shovel to dig dike to contain spill. Methods will vary depending on the nature of the spill.
- Report spill immediately to Site Superintendent, who will determine if spill is to be reported to the NWT/NU 24-Hour Spill Line at 867-920-8130.

Table 1 provides a list of emergency contacts for this project. It will be updated by the Contractor.

Table 1. Emergency Contacts

Name	Contact Information
NWT/NU 24-Hour Spill Line	867-920-8130
GNU Fire Marshall Emergency	867-979-6262
Resolute Bay Health Centre	867-252-3844
Qikiqtani General Hospital (Iqaluit)	867-975-8600
RCMP – Resolute Bay	867-252-1111
PSPC Project Manager	Ryan Breivik – (403) 479-8933
Kuukyoak Project Manager	Michael Billowits – (613) 295-4665
Medi-Vac	Air Inuit – Air ambulance - 1 866 661-8456
Nearest Hospital	Qikiqtani General Hospital - (867) 975-8600

3.0 Emergency Response

3.1 Emergency Response Accident and Injury Procedures

In the event of personnel accident or injury at the site, the following general accident and emergency response procedures are to be followed by all personnel.

1) *Initial Notification and Response*
    a. Signal all crew members of the emergency (by Radio);
    b. Congregate at the Muster Station on-site if safe to do so; and,
    c. Contact Kuukyoak Project Manager / Back-up Project Manager Immediately
2) *Size-Up Situation*
    a. Determine what has happened and whether there have been any casualties;
    b. Locate and assess the condition of the casualties;
    c. Assist with stabilization/treatment of casualties, as needed; and,
    d. Assess methods for decreasing potential hazards to other personnel.
3) *Initiate Rescue Response*
    a. Assist in the removal of casualties from the incident area;
    b. Assist with the transport of victims to medical facilities; and,
    c. Bring the cause of the emergency situation under control.
4) *Follow-Up*
    a. Notify appropriate Kuukyoak and PSPC representative (listed on contact sheet);
    b. Notify the WSCC and,
    c. Review and revise Health and Safety Plan and Emergency Response Procedures accordingly.

3.2 Emergency Response Fire Procedures

In the event of a fire emergency at the site, the following general accident and emergency response procedures are to be followed by all personnel.

1) *Initial Notification and Response*
    a. Signal all crew members of the fire (by Radio);
    b. Congregate at the Muster Station on-site if safe to do so; and,
    c. Contact Kuukyoak Project Manager / Back-up Project Manager Immediately
2) *Size-Up Situation*
    a. Locate all crew members and whether there have been any casualties and assist with stabilization/treatment of casualties, as needed;
    b. Determine where the fire is occurring, whether it is approaching and what evacuation procedures or on-site shelter will be required;
    c. Determine safe zones for people and equipment;

3) *Evacuation Response*
    a. All employees will check-in via radio communication and assemble at the muster point, as soon as possible;
    b. Rescue and firefighting services will be contacted in the event of a newly detected fire (See Table 1 for contact information).
    c. ERC or alternate will perform a head count and assign fire evacuation positions;
    d. Escape routes will be determined and verified;
    e. Crews will be mobilized to camps as soon as all members have been accounted for, and if conditions are deemed safe;
    f. In the event that on-site shelter is required, the safest option will be determined and utilized until evacuation is possible;
4) *Follow-Up*
    a. Notify appropriate Kuukyoak and PSPC representative (listed on contact sheet);
    b. Review and revise Health and Safety Plan and Emergency Response Procedures accordingly.

3.3 Emergency Response Environmental Procedures

In the event of an uncontrolled release of a deleterious substance or controlled product, the procedures outlined in the Spill Contingency Plan shall be followed (included under a separate cover).

3.4 Emergency Medical Services

Standard first aid will be administered immediately on-site by the EMT. Additional medical care (if required) will be provided by mobilizing the injured party back to the Health Centre in Resolute Bay, NU. The Resolute Bay Health Centre will be contacted as the field team is mobilizing to the facility. If sufficient care cannot be provided at the Resolute Bay Health Centre, an air ambulance will be called to transport the injured party to the Qikiqtani General Hospital in Iqaluit, NU.

3.5 Accident Investigation Reporting

Following an emergency incident, a Kuukyoak standard Incident Report Investigation Form will be completed by the Project Manager. Personnel that witnessed the episode will be questioned as necessary. All incident reports will be retained by the Project Manager. The Kuukyoak Project Manager will forward the Incident Report Investigation Form to the PSPC Project Manager with 24-hours of occurrence, unless an alternative timeline is mutually agreed based on the circumstances of the incident.