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

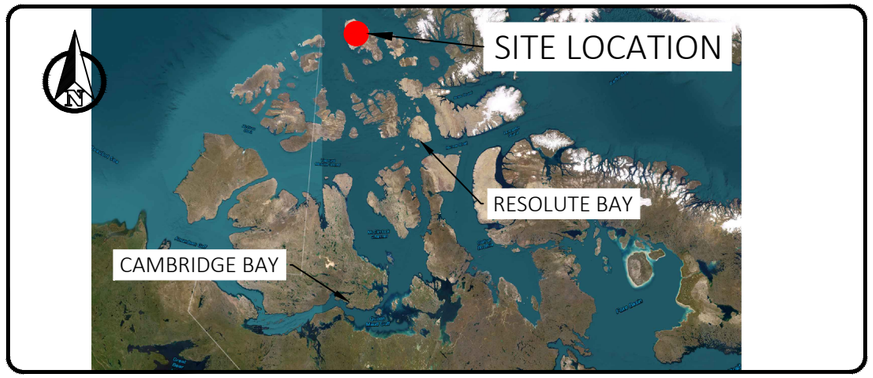
the existing Waste Disposal Areas (WDAs), construction of a camp pad and temporary waste storage area and general site regrading.

- 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

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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

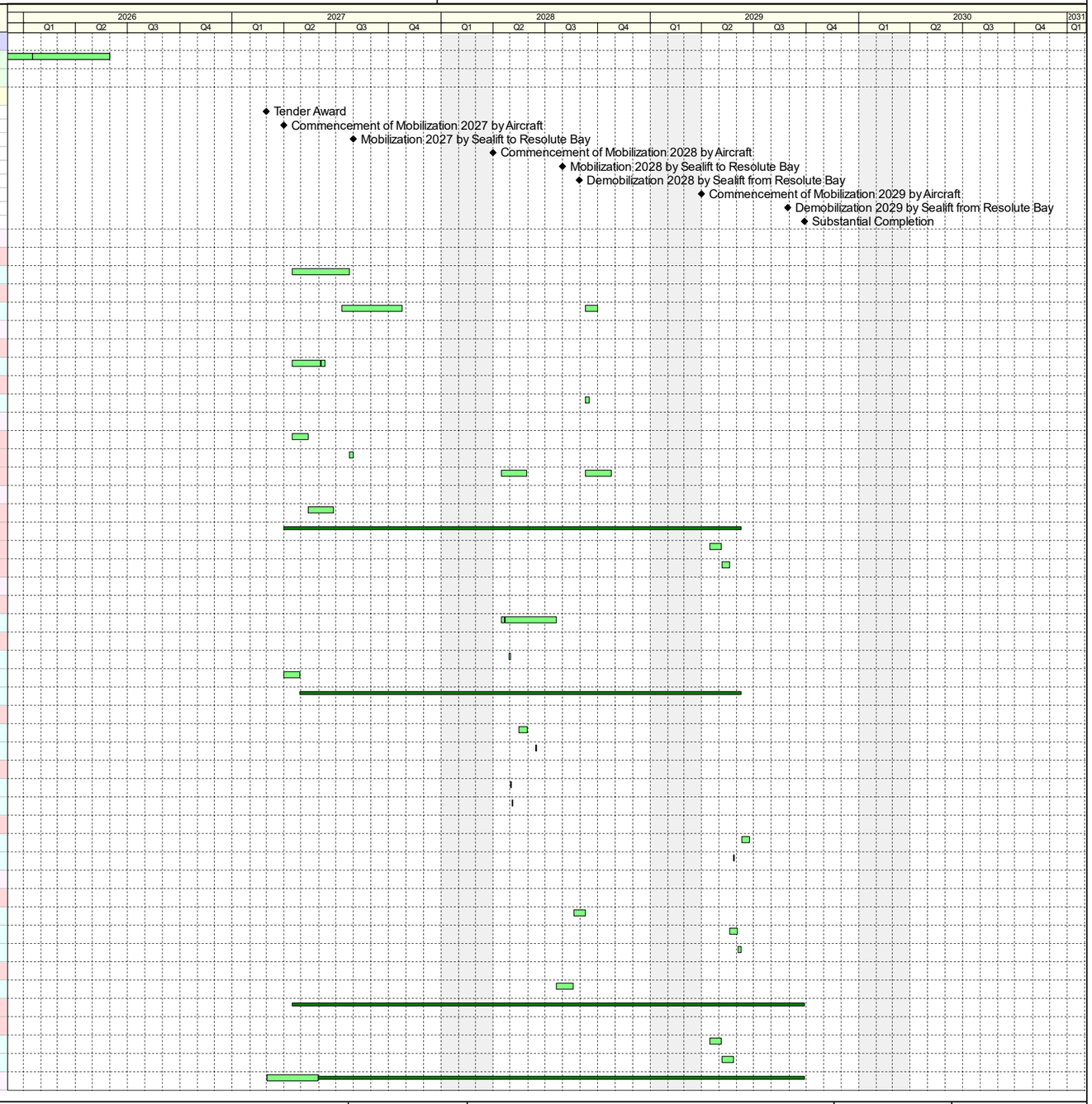
Appendix B

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

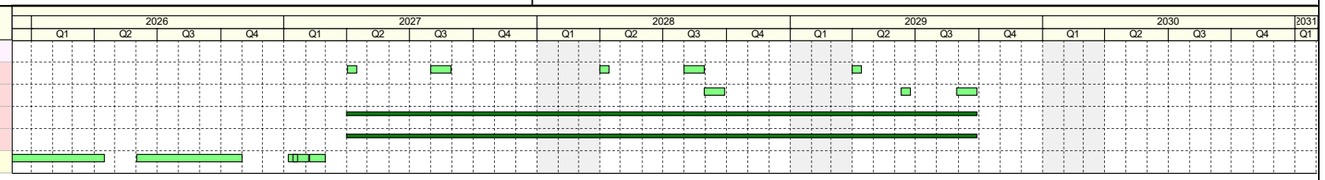
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Date	Revision	Checked	Approved
08-Dec-2025	Isachsen RAP - Overall Schedule R5	C.SADLER	M.BILLOWITS

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

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