Crown-Indigenous Relations and Northern Affairs Canada
Relations Couronne-Autochtones et Affaires du Nord Canada

PIN-C Bernard Harbour Remediation

February 28, 2023

Canada

PIN-C, Bernard Harbour
Distant Early Warning (DEW) Line Site
Remedial Action Plan (RAP)

Aerial photo view of the PIN-C station area.

Introductions

- Peter Martin

  Crown-Indigenous Relations and Northern Affairs Canada

  Project Role: Project Owner, Funding

- Claire Brown

  Public Services and Procurement Canada

  Project Role: Project and Contract Management

- Cathy Corrigan

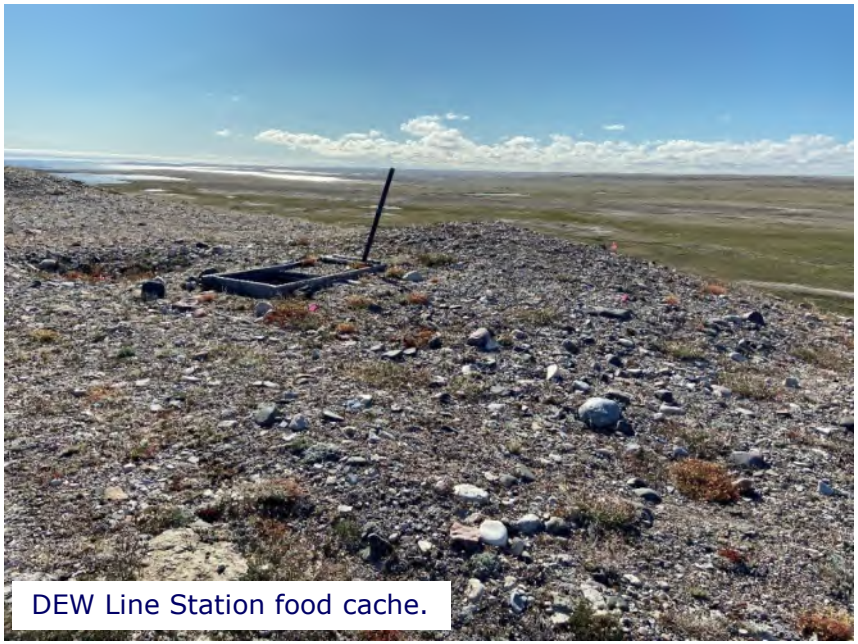
  AECOM Canada Limited

  Project Role: Consultant/Engineer hired to conduct the Phase III Environmental Site Assessment and produce the Remedial Action Plan

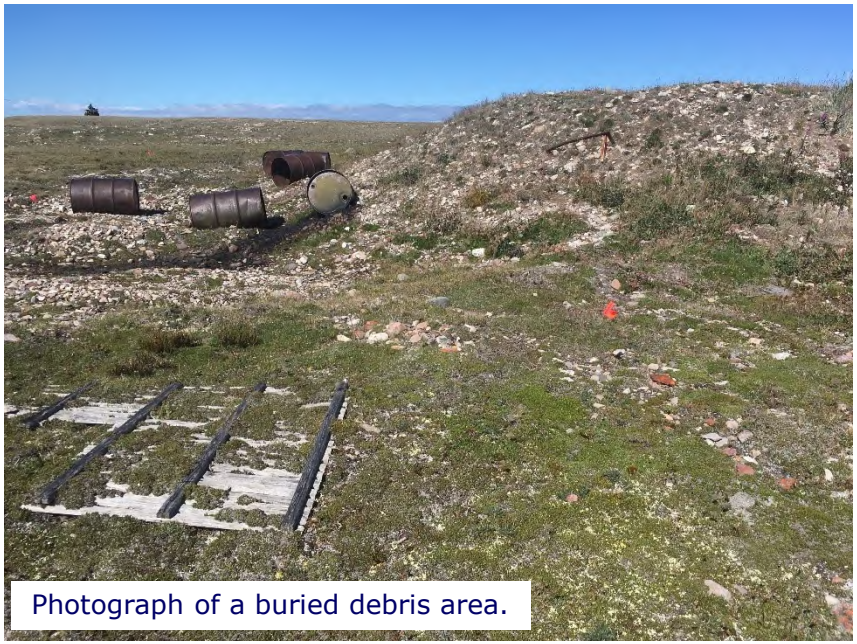
Why are we here?

Photograph of a ground squirrel on site.

- To share information
- To learn what you know about PIN-C Bernard Harbour
- To communicate our plans to clean up PIN-C Bernard Harbour
- To seek community input so we can produce a better clean up plan



DEW Line Station food cache.



Photograph of a buried debris area.

Project Objectives

- To minimize environmental impact to humans and wildlife
- To ensure the project complies with all legal requirements
- To ensure the project follows all Federal and/or Departmental policies
- To increase public awareness about remediation activities
- To provide employment opportunities for the local work force

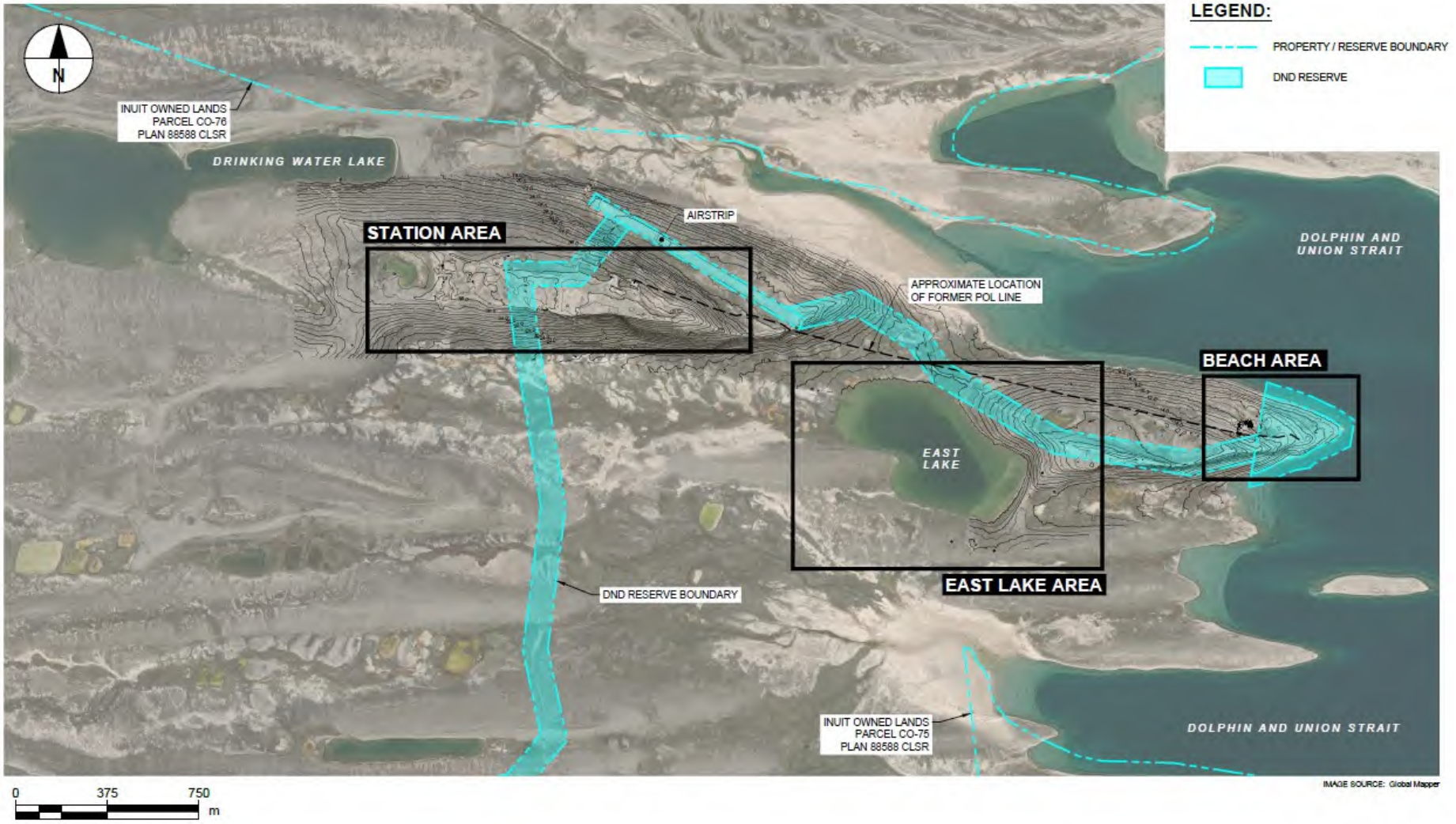
Hare on site.

Landscape photo taken on site.

Location (120 km from Kugluktuk)

Drone Tour Footage

Site Layout


LEGEND:
PROPERTY / RESERVE BOUNDARY
DND RESERVE
N
INUIT OWNED LANDS
PARCEL CO-76
PLAN 88588 CLSR
DRINKING WATER LAKE
AIRSTRIP
STATION AREA
APPROXIMATE LOCATION
OF FORMER POL LINE
DOLPHIN AND
UNION STRAIT
BEACH AREA
EAST
LAKE
EAST LAKE AREA
DND RESERVE BOUNDARY
INUIT OWNED LANDS
PARCEL CO-75
PLAN 88588 CLSR
DOLPHIN AND UNION STRAIT
0
375
750
m
IMAGE SOURCE: Global Mapper

Site History

▪ 1958	Site constructed and used as an Intermediate DEW Line site
▪ 1963	Site abandoned
▪ 1992, 2011	Environmental Study (ESG, WESA)
▪ 2022	Phase III Environmental Site Assessment (AECOM) Archaeological Assessment Geotechnical Assessment
▪ 2023 (Plan)	Remedial Action Plan Community consultation Request for proposal Permit applications

Downed antenna on site.

Main station buildings.

Archeological Impact Assessment

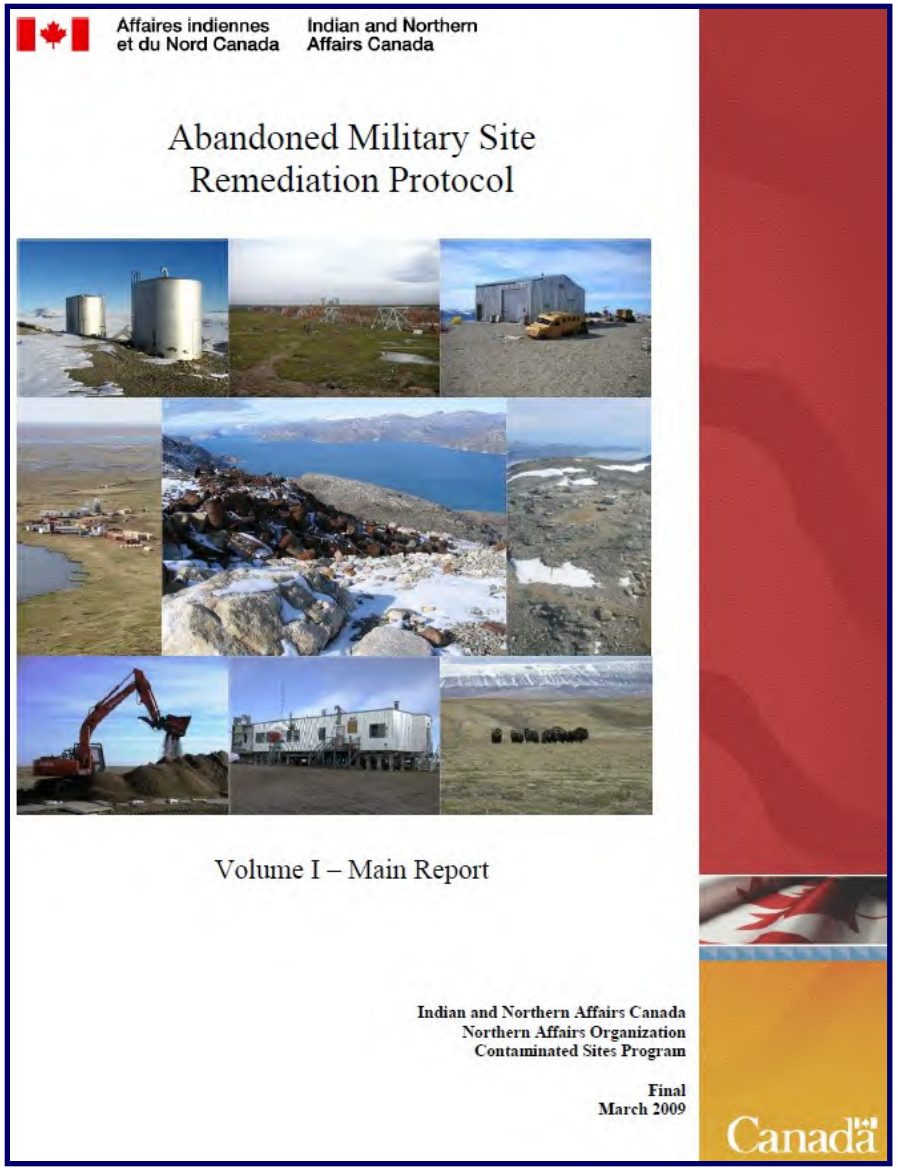
- Archeological Impact Assessment (AIA) included a research and a field component with local community members.
- Objective was to identify archaeological sites, document their location and characteristics, and develop recommendations for mitigation or avoidance.
- Used pedestrian survey and surface examination of the Project area, including locations where planned remediation activities may involve new ground disturbance.
- No affected heritage sites were identified or recorded as a result of the AIA.

St. Andrews Anglican Mission, ca. 1918.

Recent stone cairn near north edge of freshwater pond.

Abandoned Military Site Remediation Protocol (AMSRP)

- Guide to cleaning-up military sites in the north
- Backed by science and past experience on similar sites
- Balances environmental considerations and cost
- Balances environmental benefits of clean-up and potential negative physical impacts to the Arctic environment



Environmental Issues to be Addressed

1) Buried Debris Areas
   - Four buried debris areas
2) Hazardous Waste
   - Asbestos, Petroleum Products, Cylinders, PCBs, Lead, Barrel Liquids
3) Non-Hazardous Waste
   - Surface Debris, Barrels, Building Demolition Waste, Structures
4) Contaminated Soil
   - Tier I – low level contamination (lead, PCB)
   - Tier II – higher level contamination (metals, PCB)
   - Type A Hydrocarbons (lubricating oil)
   - Type B Hydrocarbons (fuel)
   - Hazardous (PCBs)

Empty stack of barrels on the beach.

Photo of the asbestos flooring, PCB painted items, and debris inside of the warehouse.

Volumes of Material – Dump Truck Loads

ENVIRONMENTAL CONCERN	VOLUME (CUBIC METRES)	APPROXIMATE # OF DUMP TRUCK LOADS 
Hazardous Waste	215	22
Non-Hazardous Waste	871	88
Tier I (lead, PCB)	73	8
Tier II (metals, PCB)	293	30
Type B Hydrocarbons	942	95
Hazardous Soil	8	1

*Based on 10 cubic metres per dump truck load

**Includes the estimated volume of all material in the dumps

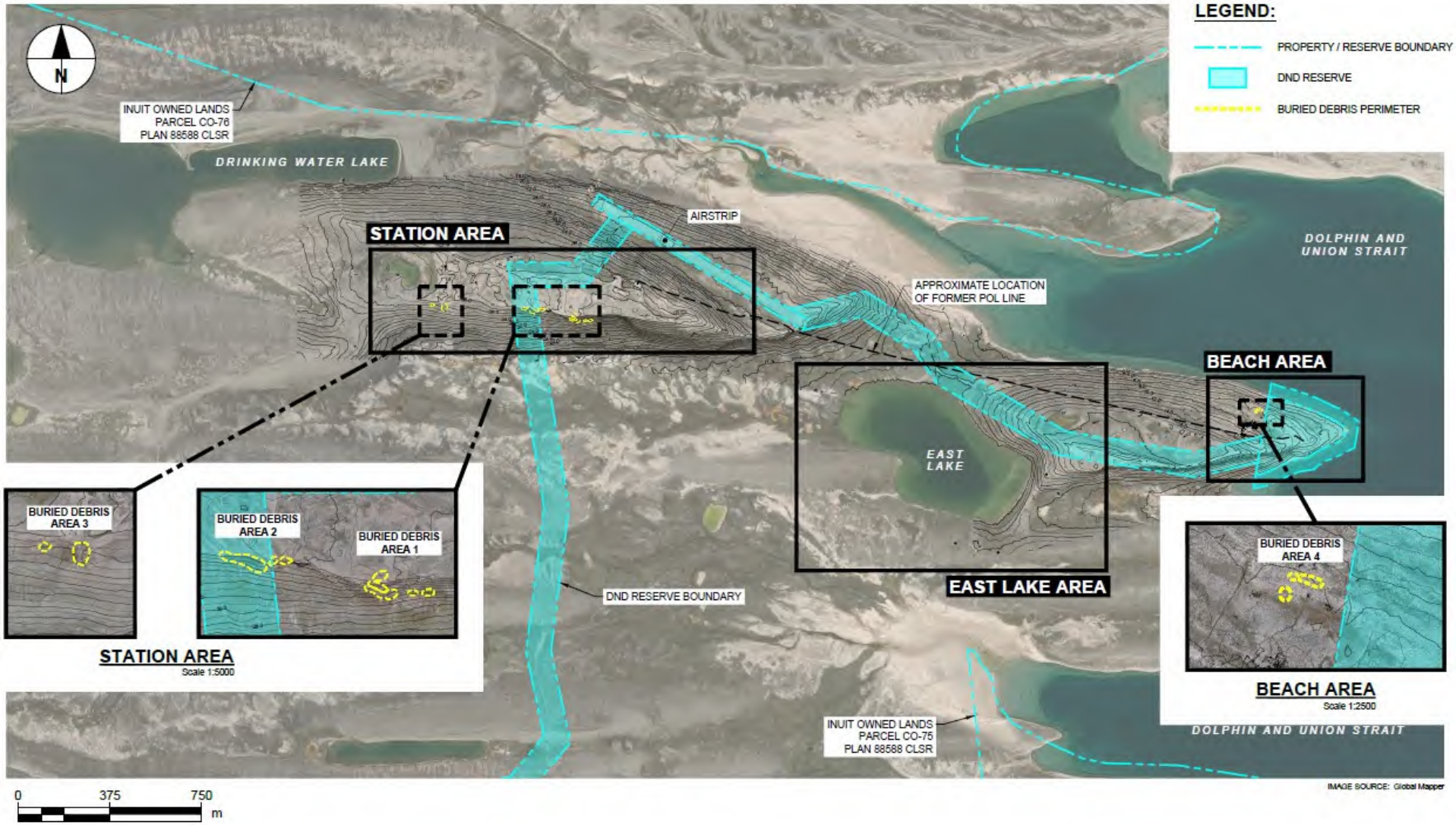
Buried Debris Remediation Options

- AMSRP defines three (3) categories:
  - **Class A**: in an unstable, high erosion area or an area that cannot be covered properly
    - **Clean-up options:**
      - Excavate and place waste in an engineered landfill
  - **Class B**: in a stable location, but there is evidence of contaminant migration
    - **Clean-up options:**
      - Install an engineered containment system
      - Excavate and place waste in an engineered landfill
  - **Class C**: in a stable location, and no evidence of contaminant migration
    - **Clean-up options:**
      - Leave in place and completely cover with clean fill

Buried debris area on site, with some debris exposed.

Barrels at the toe of a buried debris area on site.

Buried Debris Locations at PIN-C



Buried Debris Remediation at PIN-C

- 4 Buried Debris Areas at PIN-C (that require remediation):
- **Class A: (Areas 1a, 1b, 4a, 4b)**
  - Due to location on steep slope too challenging to cover (1a, 1b) or at a location subject to potential future erosion with climate change (4a, 4b), recommended option:
    - **Excavate, package and ship to a southern engineered landfill**
      - » Cost effective, environmentally suitable
- **Class B: (None)**
- **Class C: (Areas 1c, 1d, 2a, 3a, 3b)**
  - Due to location on location of geotechnical stability and no evidence of leaching, recommended option:
    - **Leave in place and cover with 0.5 - 0.75 metres of granular material**
      - » Low environmental impact/risk, cost effective

Steep Buried Debris Area along the slope

Buried Debris Area near the beach.

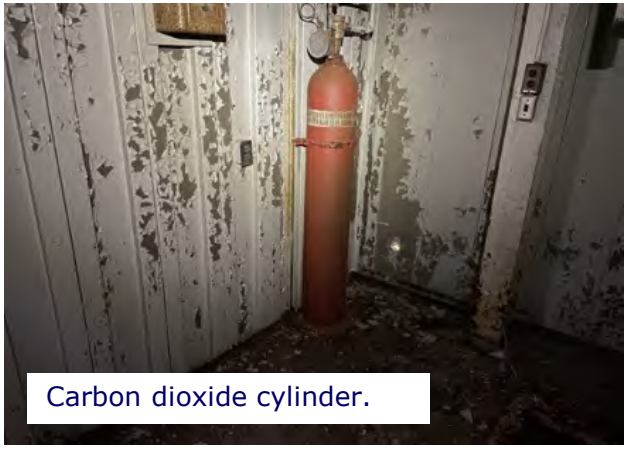
Hazardous Waste Remediation

- **About 22 truck loads.**
- **Hazardous Waste is regulated so there are no remedial options.**

- **Asbestos in building materials**
  - **Clean-up requirements:**
    - **Remove safely and double bag for disposal**
- **PCB paint on building components**
  - **Clean-up requirements:**
    - **Remove PCB painted items safely, package and ship to a licensed disposal facility**
- **Petroleum products (i.e. fuel, oil) in barrels or tanks**
  - **Clean-up options:**
    - Incinerate on-site under appropriate emission controls
    - Package and ship to a licensed disposal facility
  - Recommended options:
    - **This is usually up to the contractor to decide, likely taken off site due to very small volume**
- **Compressed gas cylinders**
  - **Clean-up requirements:**
    - **Vent cylinders with contents and dispose of empty cylinder with non-hazardous waste**

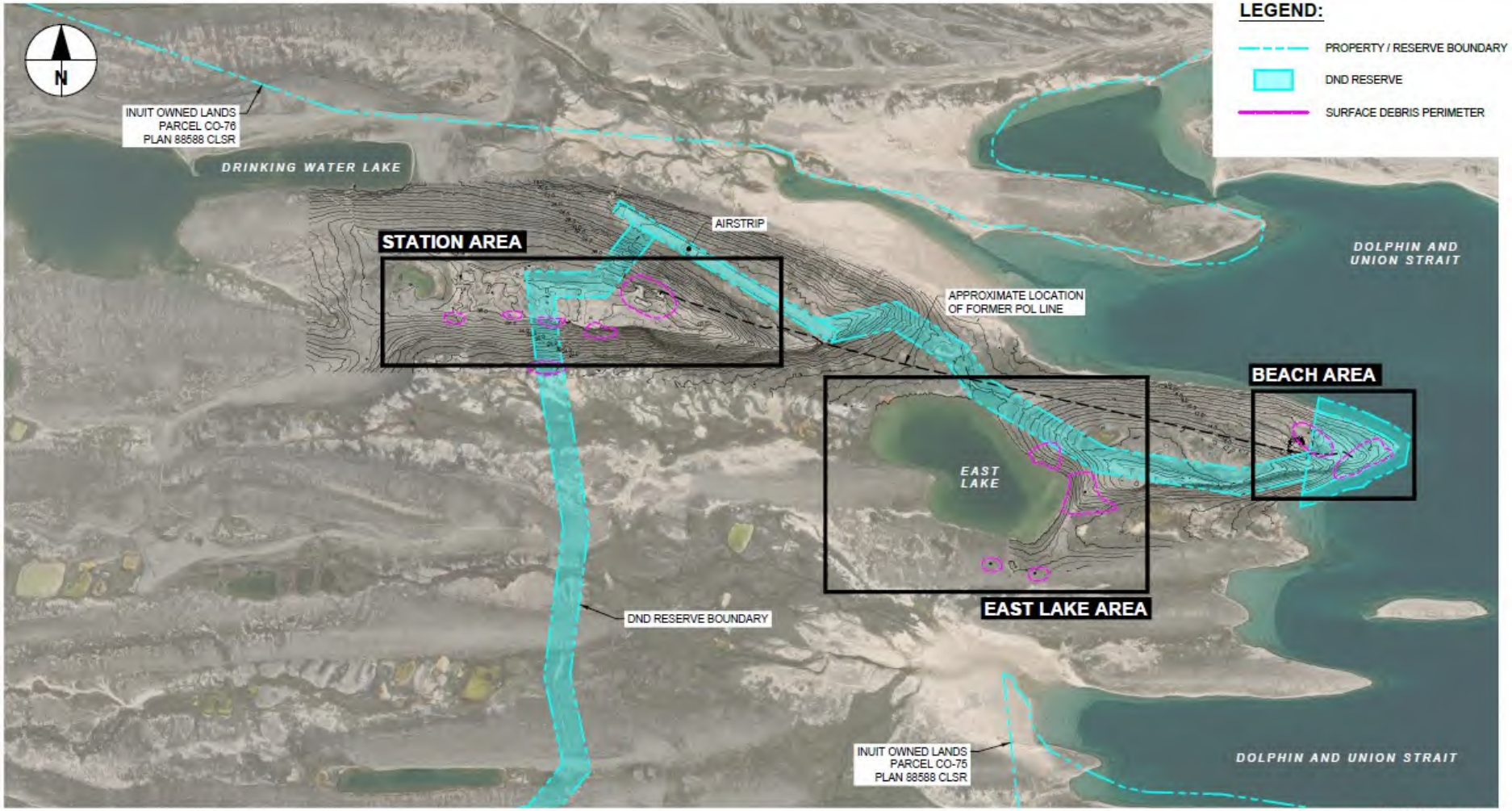
PCB painted walls and asbestos wrapped pipes.

Empty barrels.



Carbon dioxide cylinder.

Non-Hazardous Waste – Surface Debris



Non-Hazardous Waste – Structure Demolition

Worker accommodations building.

Downed antenna.

Main station buildings.

Non-Hazardous Waste Remediation

- **Non-hazardous wastes at PIN-C include**:
  - Surface debris (including empty barrels, cabin debris)
  - Buildings and structures to be demolished
  - Waste from buried debris excavation
  - Approximately 88 truck loads of debris
- **Clean up involves:**
  - Collecting surface debris from around the site
  - Demolishing the buildings and structures (5)
- **Disposal options include:**
  - Package and ship off-site for disposal in a commercial landfill down south
  - Construct an on-site engineered landfill for waste disposal
  - Burn untreated, unpainted wood waste


Warehouse and module train.


Surface debris near the beach.


Debris area.

Non-Hazardous Waste Remediation

- **Recommended disposal option:**
  - **Package and ship off-site for disposal in a landfill down south and burn untreated and unpainted wood**
    - » Removes waste from contact with the environment
    - » No long-term monitoring required
    - » No residual risk

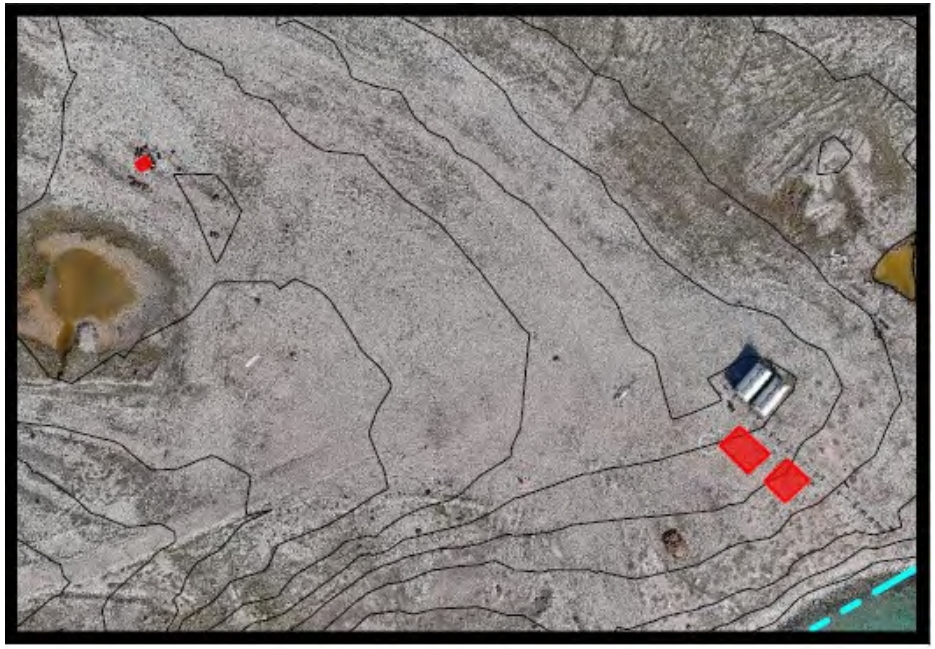
Non-DEW Line cabin debris present on site.

Example photo of debris containerization.

Contaminated Soil Remediation

Contaminated Soil Areas of the Site

STATION AREA
Scale 1:2500

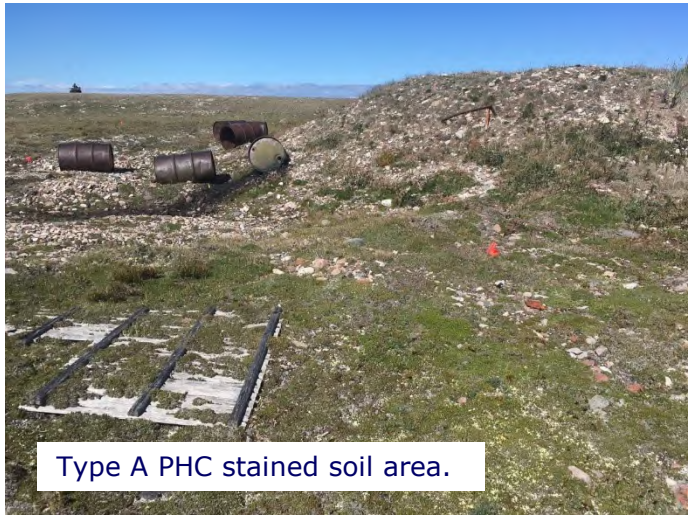


BEACH AREA
Scale 1:2500

Contaminated Soil Remediation

- AMSRP defines four (4) types of contaminated soil:
  - **Tier I/Type A PHCs**: low level contamination (lead, PCB, Type A PHCs), approximately 8 truck loads
    - **Clean-up options:**
      - Cover with minimum 0.3-0.5 metres of granular fill
      - Excavate and use as intermediate fill in on-site non-hazardous waste landfill
    - Recommended option:
      - **Cover with minimum 0.3-0.5 m of granular fill**
        - » Isolated from Arctic environment
        - » Cost effective
        - » Total surface area to be covered is around 250 m^2

Digging test pit for sampling soil by the former fuel storage tank.



Type A PHC stained soil area.

Contaminated Soil Remediation

- **Tier II**: high level contamination (metals, PCB), approximately 30 truck loads
  - **Clean-up requirements: excavate**
  - **Disposal options:**
    - Construct an on-site Secure Soil Disposal Facility for the disposal of Tier II soil
    - Package and ship to a southern engineered landfill
  - **Recommended disposal option**:
    - **Package and ship to a southern engineered landfill**
      - » Completely removes soil from site and no long-term monitoring is required
      - » Small volume of soil so shipping south is a more cost-effective option

Sampling for contaminated soil by module train.

Contaminated Soil Remediation

- **Hazardous Contaminated Soil**: approximately 1 truck load
- Regulated so no remedial options.
  - **Clean-up and Disposal Requirements:**
    - **Excavate, package and ship to a southern licensed disposal facility**

Contaminated soil sampling.

Example of off-site transport of contaminated soil from FOX-C remediation.

Example contaminated soil excavation and containerization from PIN-E remediation.

Contaminated Soil Remediation

- **Type B Hydrocarbons**: mobile (diesel fuel, gasoline), approximately 95 truck loads
- **Clean-up and disposal options:**
  - Treat in place using biological or chemical methods
  - Excavate and treat on-site using biological methods (such as landfarming)
  - Excavate, package and ship off-site for treatment or disposal at a licensed facility
- Recommended option:
  - **Excavate and treat on-site using biological methods**
    - » Contaminant levels reduced to an acceptable level
    - » Cost effective
    - » Post treatment soil can be used as borrow material or left on site (regraded)

Contaminated soil sampling downslope from the station fuel storage area.

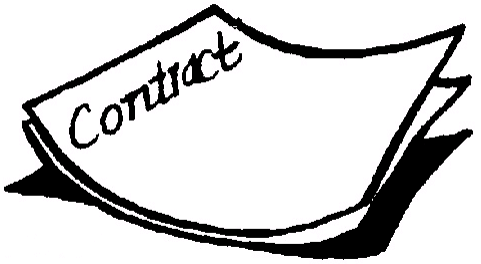
Test pit for soil sampling by former fuel tank at the beach.

Example landfarming operation.

Potential Landfarm Locations

Project Procurement

- Use a Request for Proposal (RFP) process
- Project will be posted on CanadaBuys (new federal procurement website)
- Proposals are evaluated based on:
  - Technical
  - Management
  - Indigenous Opportunity Considerations
  - Cost



Workers trained in barrel content treatment – from CAM-E remediation

Preliminary Schedule

MILESTONE	COMPLETION DATE
Finalize Remedial Action Plan	March 2023
Request for Proposal	Fall 2023
Bidder's Conference/Site Visit	Fall 2023
Regulatory Submissions	Fall/Winter 2023
Award Contract	Spring 2024
Mobilization*	Summer/Fall 2024
Site Remediation*	Fall 2024 – 2025 (2026 if required)
Demobilization*	Fall 2025 (or 2026)

* These timelines are dependant on sealift/barge schedules, site weather conditions, and available funding.

The dates are rough estimates and will be refined once we select a contractor.

THANK YOU

Questions?

Contact Information:

Crown-Indigenous Relations and Northern Affairs Canada

Peter Martin
Contaminated Sites Project Manager

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E-mail: peter.martin4@rcaanc-cirnac.gc.ca

Charlotte Lamontagne
Regional Director, Contaminated Sites Nunavut

E-mail: charlotte.lamontagne@rcaanc-cirnac.gc.ca

Minutes

Meeting name
Kugluktuk Community Meeting: Presentation of Draft Remedial Plan - PIN-C, Bernard Harbour

Meeting date
2023-02-28

Attendees
Attendance List Attached

64 Participants

Time
18:00 - 19:00

Location
Kugluktuk Community Complex

Project name
PIN-C, Bernard Harbour

Prepared by
Paula Petkovic

Government and Consulant Team Members:

- Claire Brown (PSPC, Project Manager for PIN-C)
- Dele Morakinyo (CIRNAC, Project Manager proxy for PIN-C)
- Cathy Corrigan (AECOM, Project Consultant)
- Paula Petkovic (AECOM, Project Consultant)

Minutes

Ref	Item	Action
01	Introductions	N/A
02	Presentation for PIN-C. • Dele presented introductory slides discussing the purpose. • Cathy presented the technical slides (site description, items requiring remediation, remedial options and technical recommendation) • Claire discussed the procurement strategy.	N/A
03	Question Period. Questions and answers below.	N/A
04	Q: Are they estimates or measured? [asking about the volumes of material] A: Yes, these are the design volumes of the items found on site.	N/A
05	Q: In the springtime does all the contamination spread/migrate? A: We found that the buried debris did not have any contamination leaching from it.	N/A
06	Q: Have samples been taken to track contamination migration? Especially into the ocean? A: We have sampled and have not found contaminant migration from the buried debris.	N/A
07	Q: What animals did you see around site? A: The field crew saw caribou and hare in the area.	N/A
08	Q: Did you see or find any dead animals in the area? A: No dead animals were found in the area.	N/A

Ref	Item	Action
09	Q: Allen – When I used to camp over the summers in that area we used to hunt and fish there. The site used to be absolutely covered with barrels but I spent 8 summers rolling the barrels away and stacking them up near the island. Including pulling some out of the creek. They are now stacked up in Inuit Owned Lands. Will these also be cleaned up? A: (Dele) There will have to be an inquiry into whether those are DEW line barrels. If they are, they will be removed/cleaned up.	Further investigation into barrels, possibly at time of remediation. To be discussed.
10	Q: Allen – those Cabins used to be the old RCMP station. Q: Margret – The cabins were used by the community as an outpost camp. They weren't owned and were shelters set up by INAC. There are people from the Community that were involved in this process.	Have additional discussions with Community members to see what information is known about the cabins.
11	Q: Are you tearing down the old buildings? They are haunted. A: Yes, the main station and Inuit worker accommodations will be demolished.	N/A
12	Q: Will the clean up crew be wearing HazMat suits? A: When doing the hazardous material abatement the workers will be wearing HazMat suits and respirators.	N/A
13	End of question period. No further questions.	N/A

Kugluktuk Community Meetings – Attendance List

1. Dele Morakinyo (CIRNAC)
2. Cathy Corrigan (AECOM)
3. Paula Petkovic (AECOM)
4. Claire Brown (PSPC)
5. Bobby Hikhaitok
6. Agnes Allen
7. Marshall Kukilukak
8. Lance Ahegona
9. Molly Kukilukak
10. Cameron Ateteherb
11. Sophie Kokak
12. Destiny Hala
13. Kerstin Kaklun
14. Clifton
15. Lena
16. Brooklin
17. Alex
18. Kylor
19. Braxton
20. Brenda Kokak
21. Faith Kokak
22. Robert Havioyak
23. Sarah Elatiak
24. Sarah Egotak
25. Joann Kigluna
26. Jayko Peloyayak
27. Allen Ahegona
28. Tacerie Ahegona
29. Anissa Ayalihak
30. Betty Ann Kadluk
31. Colin Kuneluk
32. Talya Klengenberg
33. Kyra A
34. Calden Stirrett
35. Nate Kamingoak
36. Nohan Toasi
37. Gabriel Hikhaitok
38. Diana Evaglot
39. Simon Hana
40. Lawrence Allukpik
41. Agnes Kokak
42. Joyce Kengua
43. Johnny Keaduk
44. Morgan Evaglok
45. Maggie Bolt
46. Ocean Avaligak
47. Michelle Hikhaitok
48. Leona Hikhaitok
49. Sherina Hikhaitok
50. Charmaine Kigiuna
51. Donovan Anablak
52. Margaret Haviapak
53. Wyatt Atatahak
54. Fred Algona
55. Chaz Kudlak
56. Charles Sitatak
57. Robert Angivrana
58. Jarrett Miyok
59. Shirley Hatogina
60. Anthony Ilgok
61. Bertram Elatiak
62. Cecilia Algiak
63. Alison Avaligak
64. Leila Hikhaitok