



**Affaires autochtones et
Développement du Nord Canada**

**Aboriginal Affairs and
Northern Development Canada**



Overview of Contaminated Sites Program Nunavut Region

**Nunavut Mining Symposium
April 7-10, 2014**



Nunavut Contaminated Sites Program

Objectives

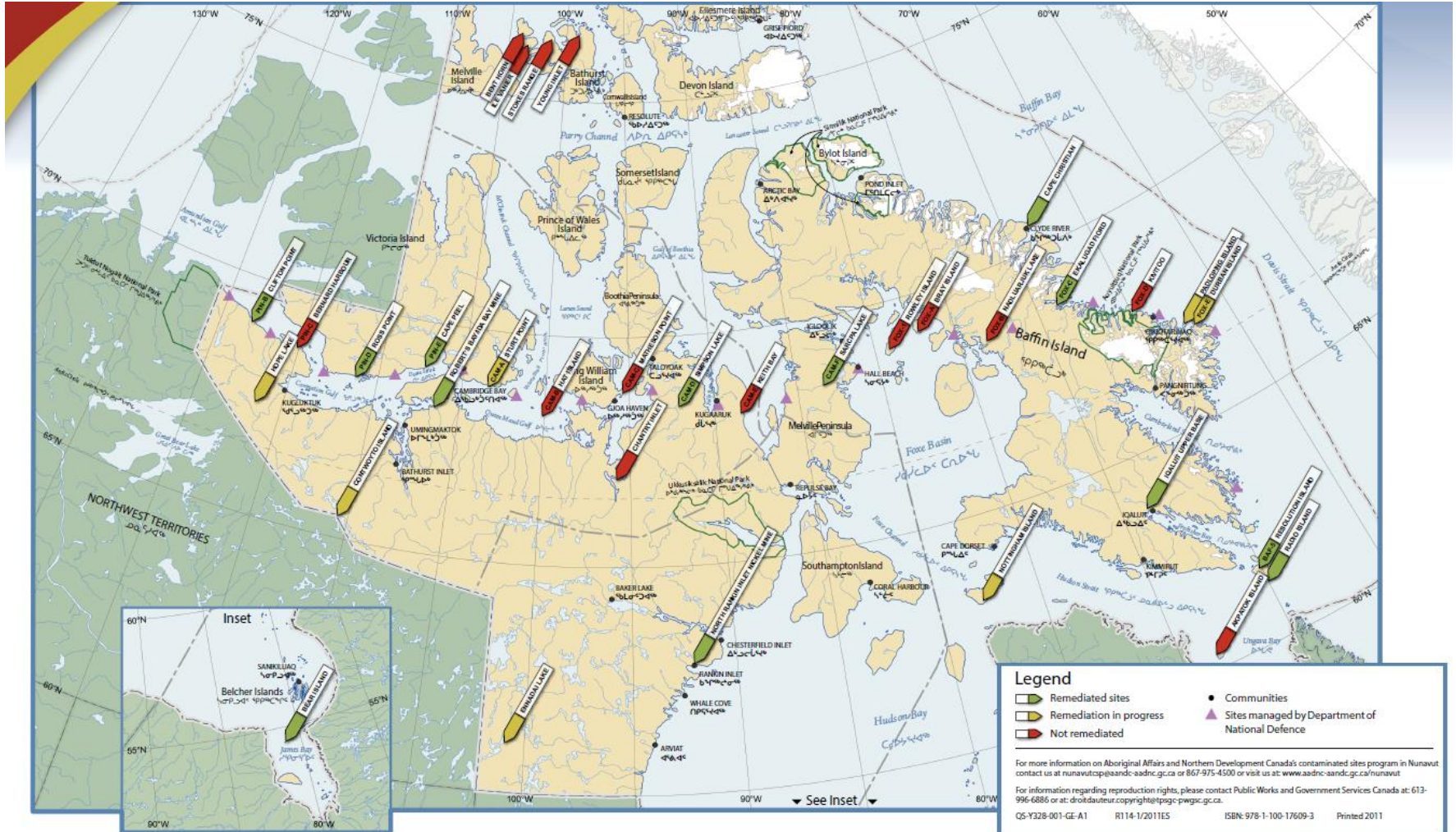
The Contaminated Sites Program (CSP) is committed to managing contaminated sites in a cost effective and consistent manner, to reduce and eliminate, where possible, risk to human and environmental health and liability associated with contaminated sites.

Typical types of Contaminated Sites

- **Distant Early Warning (DEW–Line) and related sites**
Resolution Island; Durban Island; Fox-E; Fox-C; CAM-F; PIN-D.
- **Weather Stations and other sites**
Crystal III (Padloping Island); Contwoyto Lake; Nottingham Island; Ennadai Lake.
- **Mining, Minerals, Oil and Gas**
North Rankin Nickel Mine; Robert's and Ida Bay Mines; Hope Lake; Bathurst Island and other oil and gas exploration sites.



Contaminated Sites Program 2013-2014





General Project Information

- Typically projects are funded through the Federal Contaminated Sites Action Plan (FCSAP) administered for Treasury Board by Environment Canada
- Nunavut projects are managed through the Contaminated Sites Program of AANDC's Nunavut Regional Office based in Iqaluit
- Remediation contract costs typically range between \$5 million to \$25 million
- Public Works and Government Services Canada (PWGSC) typically manages large consulting and construction contracts
- Inuit labour content in contract requirements varies from about 70 to 80%
- Support for training in local communities is provided



A Brief History of the DEW-Line

| | |
|------|--|
| 1952 | An MIT think tank identifies US and Canadian vulnerability to attack from north |
| 1953 | Project started in earnest in December 1954 |
| 1955 | Major construction starts |
| 1957 | DEW-Line sites operational |
| 1963 | Intermediate DEW-Line sites abandoned; some sites upgraded and maintained until replaced with the North Warning System sites in the early 1990's |

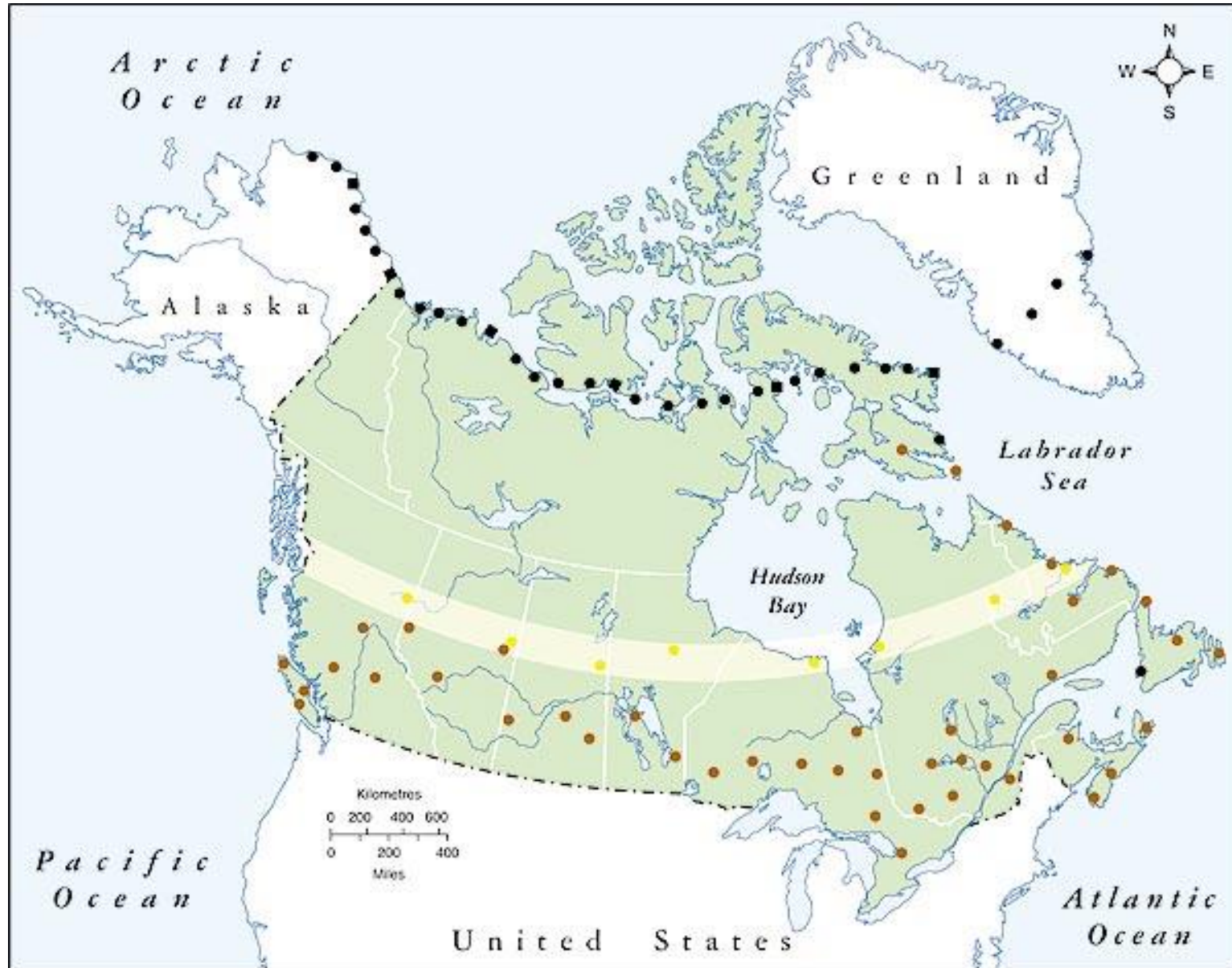


A Brief History of the DEW-Line

| 1980-1990s | Environmental assessments identify PCB's and other contaminants at DEW-Line sites |
|------------|---|
| 1996 | US agrees to contribute \$100 million to DEW-Line Clean-up |
| 1996 | Twenty-one DEW-Line sites taken by AANDC |
| 2013 | Twenty-one DEW-Line sites retained by The Department of National Defence (DND) – program has been completed |



DEW-Line, Pine-Tree Line and Mid-Canada Line Sites





DEW-Line and Other Military Sites

Remediated Sites

- Iqaluit Upper Base
- PIN-B: Clifton Point
- PIN-D: Ross Point
- PIN-E: Cape Peel
- CAM-F: Sarcpa Lake
- CAM-D: Simpson Lake
- FOX-C: Ekalugad Fjord
- Cape Christian
- Radio Island
- BAF-5: Resolution Island
- Bear Island

Ongoing Remediation

- FOX-E: Durban Island
- CAM-A: Sturt Point

Remediation Planned

- FOX-D: Kivitoo
- CAM-C: Matheson Point
- CAM-E: Keith Bay





DEW-Line Video

Excerpts, various Western Electric
Company videos mid-late 1950's



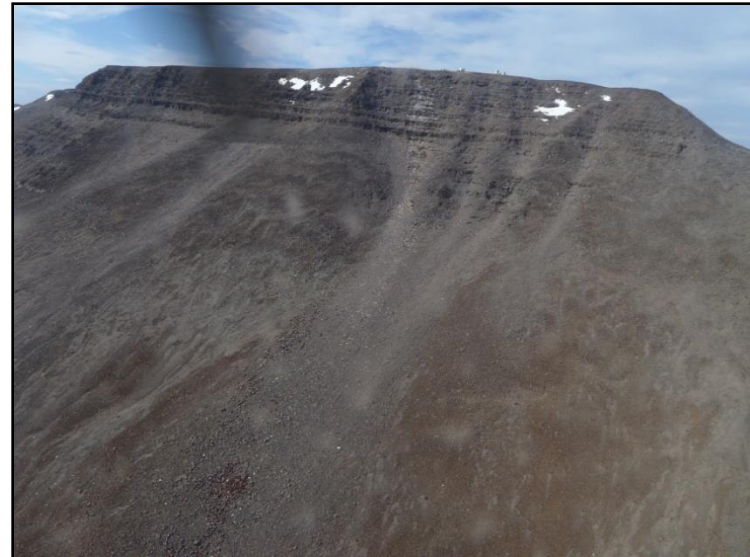


Durban Island - Sewage Discharge in winter 1959/60





Durban Island - Dump A





FOX-C Ekalugad Fjord - Debris and Module Train





Padloping Island - Vehicle Dump





FOX-C - Vehicle Dump





FOX-E Durban Island - 6 x 6



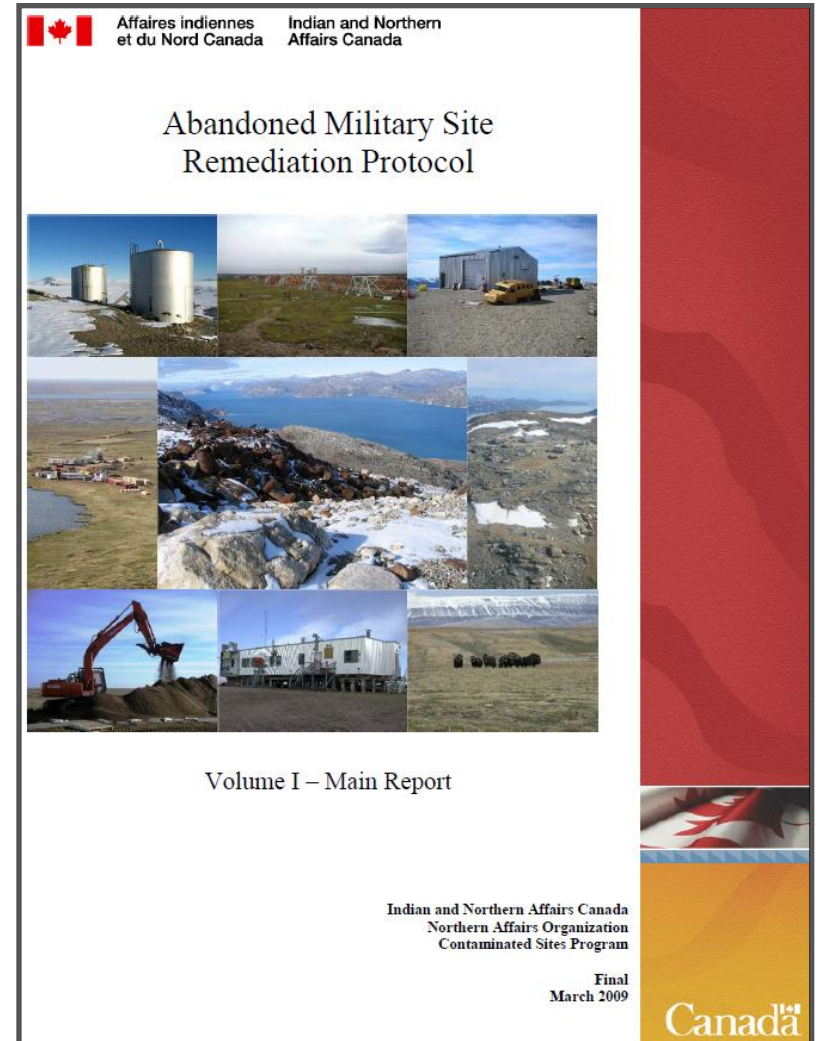
Photos provided by Martin Allinson from August 1960





Abandoned Military Site Remediation Protocol

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





Hazardous Wastes

Batteries, compressed gas cylinders, equipment with PCB's, asbestos, lead and PCB paint, unexploded ordinance (UXO).





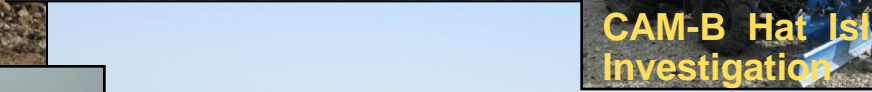
Forty-Five Gallon Drums





Contaminated Soil

PHC's, PCB's, metals



Durban Island - Excavation



CAM-B Hat Island - Soil Investigation



Bear Island - Packaged for Shipment
2010-09-21

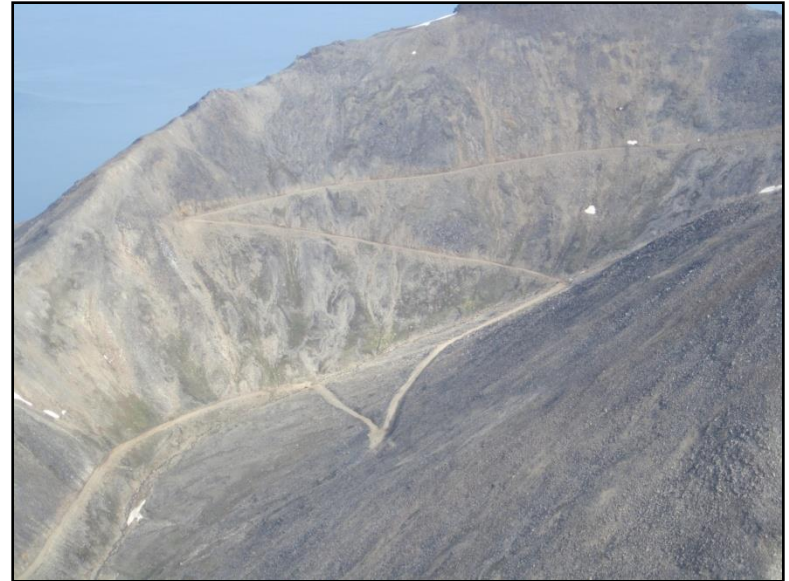


Durban Island - Hauling



Some Challenges

- Access to site
- Access on site
- Weather





Resolution Island

Tropospheric Scatter Dish
View from Radome Building



Airstrip





Sarcpa Lake - CAT-Trains





Mining

- Earliest mining – Martin Frobisher between 1576-1578
- Later mining that resulted in work on abandoned sites by the CSP

North Rankin Nickel Mine

- Established in the late 1950's originally using an open pit, later underground mining
- Produced approximately 370,000 tons of nickel and copper ore
- Mine closed in late 1962
- Rehabilitated in 1992-1994 under the federally sponsored Arctic Environmental Strategy Program by the Government of the Northwest Territories which focused on impounding tailings
- Exposed tailings noted in early 2006 and CSP investigated
- As a result of this investigation, additional tailings cover was placed, and new shaft caps were poured





North Rankin Nickel Mine



Photo provided by Department of Culture, Language, Elders and Youth, Government of Nunavut

Credit: Weymouth, C. 1959



North Rankin Nickel Mine (Circa 1957-1962)





More Mining, Oil and Gas

Robert's Bay and Ida Bay Mines

- Silver mines that operated south of Cambridge Bay in the 1970's
- Currently, Robert's Bay is under Long-term Monitoring



Hope Lake

- Near Cambridge Bay
- Small Exploration site





More Mining Oil and Gas (continued)

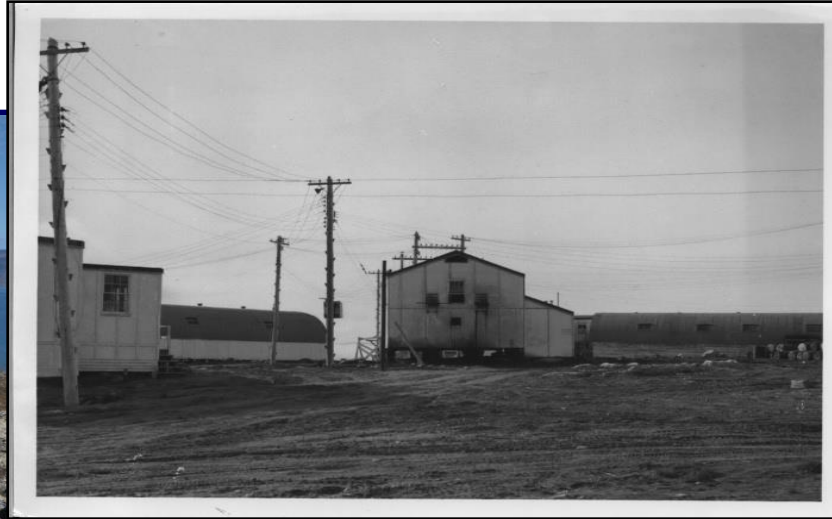
Various Oil and Gas Sites

- Sites on Crown Land in high arctic currently being reviewed by CSP to determine remedial action required





Padloping Island



Archival photos provided by Department of Culture, Language, Elders and Youth, Government of Nunavut



Ennadai Lake





Stephen Hooey
Aboriginal Affairs and
Northern Development Canada
867-975-4731
stephen.hooey@aadnc-aadnc.gc.ca