



**Nunavut
Tunngavik Incorporated
Discussion Paper**

Contaminated Sites in Nunavut

**Remediation of
Abandoned Military and
Other Contaminated Sites**

**Presented to Paul Mayer
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Department of Indian Affairs &
Northern Development
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*Resolution Island*¹

Contaminated Sites in Nunavut

There are hundreds of contaminated and waste sites throughout Nunavut. Arrangements for these sites will be an important component of devolution discussions, not only for reasons of liability, but as part of the process of meeting the objectives of the NLCA.

The Nunavut Planning Commission has inventoried 99 waste sites in the West Kitikmeot.² Regarding those sites for which DIAND is directly responsible, a 2005 presentation states that there

¹ Photo from *Update on the Clean-up of Resolution Island (BAF-5)*, DIAND, March, 2005.

² List compiled pursuant to Article 11.9.1 of the NLCA.

are 295 contaminated and waste sites in Nunavut.³ Of the 295 sites, further information indicates that 133 of these have been assessed, and 162 sites are "suspected". Of the 133 assessed sites, 26 are described as contaminated and 107 as "physical hazard". Of the 162 suspected sites, 117 are described as contaminated and 46 are physical hazard. A 2006 publication raises the total of DIAND waste and contaminated sites to approximately 330.⁴

DEW Line Sites

The most significant contaminated sites in Nunavut are the former Distant Early Warning Line (DEW Line) sites, on which the Government of Canada's current remediation activities are focused.

Partial Representation of DEW LINE Sites - Nunavut and Neighbouring Jurisdictions



The DEW Line came into operation in 1957 and comprised a chain of sixty-three radar and communication stations stretching from Alaska to Greenland, including forty-two stations in the Canadian Arctic. Thirty-two of these are located in Nunavut. The DEW Line's purpose was to provide front-line surveillance against the approach of airborne threats over the polar region; the legacy has been of point-source contamination of Nunavut and neighbouring Arctic jurisdictions.

³ *Contaminated Sites Program (CSP) Long Term Plan*; DIAND, Nunavut Regional Office, March 15, 2005.

⁴ *The Big Picture: Contaminated Sites in Nunavut*; DIAND, Ottawa, 2006, P. 1.

Some DEW Line sites received more sustained use than others but they all present a similar pattern of waste and contamination: abandoned buildings and other infrastructure, landfills, debris (both hazardous and non-hazardous), barrels, asbestos, and soil contaminated with heavy metals (lead, copper, zinc, cadmium and others), hydrocarbons and PCBs.

Responsibility for the administration of the decommissioned DEW LINE sites, and consequently for their remediation, is divided between the Department of National Defence (DND) and the Department of Indian Affairs and Northern Development (DIAND).

Department of National Defence Responsibilities

DND is responsible for the remediation of three Main and twelve Auxiliary DEW Line sites that were decommissioned in 1993, when the North Warning System (NWS) officially replaced the remainder of the DEW Line network.

DND began the remediation of its DEW Line sites in 1996, with the Cape Hooper (FOX-4) site. Since then, DND has completed almost two-thirds of its sixteen-year clean-up work plan. Remediation has been completed for six of the fifteen sites, and is in progress at four more. Once the remediation of all DND sites is completed (scheduled for 2012), ongoing monitoring of the on-site landfills will follow for a minimum of twenty-five years. The remediation schedule for DND sites is shown in Table One below.

Table One: Status of DND DEW LINE Site Clean-ups⁵

Site Name	Location	Completion Date
FOX-4	Cape Hooper	1998
CAM-M	Cambridge Bay	2000
PIN-3	Lady Franklin Point	2005
CAM-2	Gladman Point	2005
FOX-5	Qikiqtarjuaq [Broughton Island]	2006
CAM-4	Kugaaruk [Pelly Bay]	2006
FOX-M	Hall Beach	2008 (in progress)
CAM-3	Shepherd Bay	2008 (in progress)
CAM-1	Jenny Lind Island	2010
PIN-4	Byron Bay	2010
DYE-M	Cape Dyer	2011 (in progress)
CAM-5	Mackar Inlet	2011 (in progress)
FOX-2	Longstaff Bluff	2012
FOX-3	Dewar Lakes	2012
PIN-2	Cape Young	2012

DND Framework for Site Remediation

The negotiation in 1996 of a Cooperation Agreement between DND and the Inuvialuit, for the clean-up of DEW Line sites in the Inuvialuit Settlement Region, provided the precedent for implementation of the Government of Canada's mandate for the clean-up of contaminated sites in the North. The *Co-operation Agreement between the Inuvialuit Regional Corporation (IRC) and the Department of National Defence (DND) concerning the restoration and clean-up of DEW sites within the Inuvialuit Settlement Region* is recognized as an integral element of federal contracting policy by the Treasury Board and Public Works and Government Services Canada.

The DND-IRC Agreement provided the basis for the negotiation of Cooperation Agreements between DND and Nunavut Tunngavik Incorporated (NTI), covering environmental, economic and monitoring aspects of the clean-up of DND's DEW Line sites in Nunavut.

The DND-NTI agreements are:

- Environmental Provisions (September 1, 1998)

⁵ Additional information, in tabular form, is presented in Appendix A.

- Economic Agreement (August 23, 2001)
- Monitoring Agreement (May 30, 2005).

Under the DND-NTI Cooperation Agreements, a Steering Committee, with equal representation from DND and NTI, oversees the clean-up process, reviewing progress on environmental matters and in the provision of economic benefits to Nunavut Inuit. A joint (NTI-Government) Environmental Working Group, made up of environmental specialists, and a joint Contracting Working Group, each provides advice to the Steering Committee.

This collaborative structure has provided an effective forum for decision-making and for overseeing issues in the environmental and economic areas as they arise. It is important to emphasize that NTI does *not* participate in contract awards, or in actual contract administration. These are the responsibility of DND's contracting agent, Defence Construction Canada (DCC).

In the event of disagreement between NTI and DND, arbitration is provided for. It is an indication of the success of these agreements that, since they were signed, there have been no matters which NTI or DND has felt necessary to refer to arbitration.

The long-term nature, size, and continuity of the DEW Line clean-ups presents a tremendous opportunity for promoting the economic growth of Nunavut. This is by providing economic benefits to Inuit, building employment skills, qualifications and experience for individuals, and the capacity and experience for small and large Inuit firms to compete as general contractors and sub-contractors on future environmental and construction contracts.

The DND-NTI Economic Agreement establishes arrangements for putting in place minimum levels of Inuit employment and Inuit contracting value for each site to be cleaned up. These minimum levels are based on project requirements, availability of labour and of Inuit firms, results from previous clean-ups, and competing demands for labour and contracting from other projects in the region. The minimum Inuit employment content (MIEC) and contracting content (MICC) are included in the mandatory requirements for clean-up contractors, whether the general contractor is Inuit or non-Inuit. This provides an effective mechanism for ensuring that promised benefits are delivered, since contractors are committed to meeting required levels of Inuit employment and contracting. If circumstances change during a site clean-up, providing legitimate reasons why a contractor can no longer meet the employment or contracting content levels established, a system is in place under the Agreement to make adjustments to the contracting requirements. The Agreement also ensures that Inuit firms have proper access to sub-contracting opportunities. Finally, the Agreement provides base funding from DND for implementation of a training program for maximizing Inuit employment on the clean-up.

The results generated from the Cooperation Agreements in terms of economic benefits for Nunavut, and specifically for Inuit, have been excellent when compared to typical construction contracts in the territory. Out of nine contracts tendered to date, six have been won competitively by Inuit general contractors. The results in terms of levels of Inuit

employment and levels of Inuit contracting and subcontracting are shown in Tables Two and Three below.

**Table Two: DND DEW Line Clean-Up
Inuit Employment Benefits to 2006**

Site		Inuit Employment (% of Total Person-Days)				
Site Name	Location	2002	2003	2004	2005	2006
PIN-3	Lady Franklin Point	63.00	74.90	75.50	75.50	
CAM-4	Kugaaruk [Pelly Bay]	75.80	74.50	73.90	73.20	72.79
FOX-5	Qikiqtarjuaq [Broughton Island]		75.70	75.30	76.90	78.85
FOX-M	Hall Beach		70.30	74.50	75.50	75.44
CAM-2	Gladman Point		59.40	71.60	75.80	
DYE-M	Cape Dyer			5.59	42.20	50.63
CAM-3	Shepherd Bay				43.70	79.68

The pattern is of Inuit employment at levels generally above 70%, though the figures for mobilization years, and more generally for Cape Dyer, are sometimes lower.

**Table Three: DND DEW Line Clean-Up
Inuit Contracting Benefits to 2006**

Site		Inuit Firm Contracting (% of Total Contract Work Value)				
Site Name	Location	2002	2003	2004	2005	2006
PIN-3	Lady Franklin Point	74.00	72.80	75.00	75.00	
CAM-4	Kugaaruk [Pelly Bay]	86.80	89.10	92.60	90.90	91.40
FOX-5	Qikiqtarjuaq [Broughton Island]		94.10	77.00	75.90	75.27
FOX-M	Hall Beach		86.80	85.10	85.30	86.78
CAM-2	Gladman Point		57.00	48.80	58.40	
DYE-M	Cape Dyer			28.50	66.30	69.86
CAM-3	Shepherd Bay				95.90	85.29

The pattern is of Inuit participation in contracting value at a level generally above 70%. For some sites, overall figures would be higher if jointly-owned Inuit-Inuvialuit firms met the criteria for "Inuit firms" established under Article 24 of the NLCA.⁶

The DND-NTI Cooperation Agreements are recognized in Treasury Board policy, and effectively implement the Government of Canada's obligations under Article 24 of the NLCA with respect to DEW Line clean-ups. Similar mechanisms are required to ensure that the potential benefits for Inuit, and for the Nunavut economy, from the clean-up of the DIAND contaminated sites, are realized.

DIAND Responsibilities

Contaminated sites in Canada represent an estimated financial liability of \$3.5 billion to the Government of Canada. In 2005, in an effort to address this burden, Cabinet approved approximately \$1.5 billion over five years as the first injection of funds required to implement the Federal Contaminated Sites Action Plan (FCSAP). Under the FCSAP action plan, contaminated sites are prioritized according to the nature, severity and immediacy of risks to human health, safety and environment.

DIAND has prioritized twenty-three of its 330 contaminated and waste sites for remediation, including seventeen former DEW Line sites, of which the majority are DEW Line Intermediate Sites, decommissioned in 1963. Four non-DEW Line abandoned military sites as well as two orphaned mining and exploration sites complete DIAND's list of clean-up priorities in Nunavut.

⁶ Article 24 of the NLCA defines an Inuit firm as at least 51% Inuit-owned. Those firms which are 50% Inuit and 50% Inuvialuit-owned (notably Canadian North and Northern Transportation Co. Ltd.) are not recognized as Inuit under the NLCA. At the 2005 NTI Annual General Meeting, a resolution was passed seeking the amendment of Article 24 in this regard. This is currently under discussion with the federal government.

To date, DIAND has completed the remediation of two of the sites under its jurisdiction, and work is in progress at two additional sites. DIAND's entire clean-up program is projected to be completed by 2025, according to the schedule detailed in Table Four.

Table Four: DIAND Priority Site Clean-ups⁷

Site Name	Location (Vicinity)	Work Schedule
BAF-5	Resolution Island	1997-2006
Radio Island	(Resolution Island)	2006-09
CAM-F	Sarcpa Lake	2006-08
Cape Christian	(Clyde River)	2007-10
FOX-C	Ekalugad Fjord	2005-08
FOX-A	Bray Island	2008-10
Padloping Island	(Qikiqtarjuaq)	2008-10
Bear Island	James Bay	2009-12
CAM-D	Simpson Lake	2007-10
PIN-B	Clifton Point	2009-12 [2015]
PIN-E	Cape Peel	2010-13 [2008-14]
CAM-B	Hat Island	2012-14 [2009-14]
PIN-D	Ross Point	2012-14 [2010-15]
FOX-1	Rowley Island	2013-15
CAM-E	Keith Bay	2014-17 [2011-16]
FOX-D	Kivitoo (Qikiqtarjuaq)	2015-2017 [2020]
FOX-E	Durban Island	2014-2017 [2020]
CAM-C	Matheson Point	2016-18 [2013-18]
CAM-A	Sturt Point	2016-18 [2014-20]
PIN-C	Bernard Harbour	2017-20 [2015-20]
FOX-B	Nadluardjuk Lake	2019-22 [2025]
Akpatok Island	Ungava Bay	2025
Roberts Bay & Ida Bay Silver Mine	Melville Sound	undetermined

DIAND Framework for Site Remediation

The projected clean-up of DEW Line and other priority contaminated sites under DIAND's jurisdiction, through to 2025, is as important as the DND clean-up of DEW Line sites. This is both from an environmental point of view and in terms of the significant opportunity it provides to build capacity within the Inuit labour force and within Inuit businesses. It is essential therefore, that the impacts and benefits of this major clean-up be maximized for Inuit and for the Nunavut economy as a whole. As an indication of the scope of the

⁷ This schedule is primarily based on tabular information provided in Appendix B. *The Big Picture* also provides information on clean-up scheduling, which has been used. Dates from *The Big Picture* that differ from those in Appendix B are given in brackets.

remediation work involved, estimated liability costs for DIAND's twenty-one abandoned military sites are estimated at \$146.4 million, with an estimated liability for the total twenty-three high priority sites estimated at \$173 million.⁸

The first DIAND site cleaned up was Resolution Island, initially using Contribution Agreements between DIAND and Qikiqtaaluk Corporation. Funding constraints limited work to 2003, when additional funding was provided by Environment Canada. DIAND information indicates that clean-up of this site, from 1997 to 2005, achieved an overall Inuit employment level of 85% and generated over \$12 million worth of business opportunities in Nunavut. Through this period, over \$9 million was spent on salaries and over \$1 million on training.⁹

Despite the success at Resolution Island, for subsequent remediation projects DIAND has apparently been required to discard this type of arrangement. At other sites, DIAND has therefore used Public Works and Government Services Canada (PWGSC) as its contracting agent.

In contrast to the tendering process, DIAND, through PWGSC, has followed a Requests for Proposals procedure to procure general contractors for site clean-ups. In contrast to the mandatory MIEC and MICC requirements of DND contracts, proposals are assessed in terms of a complex point system which is presumed to provide the "best overall value to the Crown."

Mandatory site-specific requirements for minimum Inuit employment and contracting levels are thus replaced by the award of points through the procurement process. Up to 24% of awarded points may be allocated with the intent to meet the requirements of Article 24, in a process which weighs these points along with other considerations, including costs. No contractor is required to meet any employment objectives which differ from those he proposes in his bid.¹⁰

One promising option is the federal Procurement Strategy for Aboriginal Business (PSAB). In 2005, in response to representations from NTI to DIAND, PWGSC awarded camp-site preparation contracts for CAM-F (Sarcpa Lake) and FOX-C (Ekalugard Fjord) under the PSAB and both contracts were awarded to Nunavut Inuit firms. There have been subsequent disagreements between Treasury Board and PWGSC officials as to whether or not Aboriginal employment requirements, or land claims agreement requirements, can be incorporated within contracts issued under the PSAB.

On April 26, 2005, NTI received a Ministerial assurance that the Government of Canada was favourable towards the negotiation of an agreement between NTI and DIAND similar to the Cooperation Agreements between NTI and DND. To date, while there have been intermittent discussions, negotiations have not commenced. DIAND has put forward a

⁸ *Environmental Review of DIAND Contaminated Sites in the Territory of Nunavut* (PWGSC, Edmonton, 2003) and *Contaminated Sites Program (CSP) Long Term Plan*; DIAND, Nunavut Regional Office, March 15, 2005.

⁹ *Update on the Clean-up of Resolution Island (BAF-5)*, DIAND, March, 2005.

¹⁰ DIAND's *Contaminated Sites Program (CSP) Long Term Plan* provides of brief summary of Bid Evaluation Criteria.

"Draft Agreement", which is substantially different from the DND-NTI Agreements and which departs from their collaborative spirit:

- The DIAND document does not embrace the effective, cooperative decision-making structure (joint Steering Committee) that is central to the DND-NTI Agreements' success; and
- In terms of environmental aspects, there is no equivalent to an Environmental Working Group, and accordingly no guarantee of Inuit involvement at the delineation, risk assessment and monitoring stages of DIAND remediation projects. Also absent are provisions relating to the joint review of site-specific clean-up plans, the use and application of local Inuit knowledge and community consultation, and specific monitoring mechanisms¹¹ (other than what may be included in DIAND's revised *Abandoned Military Site Remediation Protocol*, which sets the standards for the clean-ups without being an integral component of the draft agreement).

There appears to be substantial disagreement between DIAND and NTI with regard to the priority clean-up of DIAND's contaminated sites. As earlier noted, the DND Cooperation Agreements are recognized in Treasury Board policy, and effectively implement the Government of Canada's obligations, under Article 24 of the NLCA. Implementation of the Ministerial commitment to negotiate a similar agreement is required to ensure that the potential benefits for Inuit, and for the Nunavut economy, from the clean-up of the DIAND contaminated sites are realized.

Conclusion

In the Yukon devolution agreement, environmental matters are dealt with in Chapter 6 which makes up thirty-one pages of that agreement. This indicates the complex interrelationship of transfer, liability and remediation. Devolution discussions in Nunavut will need to focus on similar considerations and their effective resolution will be critical to the process.

This paper has focused on remediation and an important aspect of waste site clean-up: Inuit employment and benefits. NTI's record of success in working with DND, shows that Inuit and government can work together in a co-operative and collaborative environment. This has allowed clean-up contracts to be successfully and professionally undertaken while at the same time providing enormous returns through Inuit employment and business development. The process set up for DND's DEW Line clean-up works and is achieving its objectives. A similar process is required for DIAND sites.

NTI respectfully recommends that the tried and respected tendering and contracting practices, first implemented in connection with the Inuvialuit Final Agreement of 1984 and

¹¹ It should be noted that according to the 2005 *Federal Contaminated Sites Action Plan (FCSAP) Handbook: Overview and Instructions for Submitting Funding proposals*, long-term monitoring is not eligible for funding under the Accelerated Action Plan.

successfully replicated in the DEW Line clean-up arrangements now in place between NTI and DND, must continue as the effective model for the federal government's waste site clean-up program in Nunavut and for any post-devolution waste clean-up regime. Implementing these practices, which directly involve NTI in a steering committee, not only honours the provisions of the Nunavut Land Claims Agreement respecting employment and contracting opportunities for Inuit, but also provides precious opportunities for good jobs and wealth creation. These are essential to close the gap in living conditions and social well-being between Inuit and other Canadians.

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Yukon Northern Affairs Program Devolution Transfer Agreement, 29 Oct., 2001. Chapter 6, "Environmental Matters".

Appendix A

Clean-up Schedule of DND DEW Line Sites¹²

Site		Region	Closest Community	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
DYE-M	Cape Dyer	Qikiqtaaluk	Qikiqtarjuaq Pangnirtung								
FOX-5	Broughton	Qikiqtaaluk	Qikiqtarjuaq								
FOX-4	Cape Hooper	Qikiqtaaluk	Clyde River Qikiqtarjuaq								
FOX-3	Dewar Lakes	Qikiqtaaluk	Clyde River Qikiqtarjuaq								
FOX-2	Longstaff Bluff	Qikiqtaaluk	Igloodik Hall Beach Clyde River								
FOX-M	Hall Beach	Qikiqtaaluk	Hall Beach								
CAM-5	Mackar Inlet	Kitikmeot	Repulse Kugaaruk								
CAM-4	Pelly Bay	Kitikmeot	Kugaaruk								
CAM-3	Shepherd Bay	Kitikmeot	Gjoa Haven Kugaaruk								
CAM-2	Gladman Pt	Kitikmeot	Gjoa Haven Kugaaruk								
CAM-1	Jenny Lind Island	Kitikmeot	Cam. Bay								
CAM-M	Cambridge Bay	Kitikmeot	Cam Bay								
PIN-4	Byron Bay	Kitikmeot	Cam. Bay Kugluktuk								
PIN-3	Lady Franklin Point	Kitikmeot	Cam. Bay Kugluktuk								
PIN-2	Cape Young	Kitikmeot	Kugluktuk								

	design
	site investigation
	scheduled clean-up
	likely still onsite

¹² Reformatted from a July 2005 DND update.

Appendix B

Clean-up Schedule of DIAND Abandoned Military Sites¹³

Sites	Region	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2
		5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
		6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7
		8																					End
BAF-5 Resolution Island	Qikiqtaaluk																						
FOX-C Ekalugad Fjord	Qikiqtaaluk																						
CAM-F Sarcpa Lake	Qikiqtaaluk																						
Radio Island	Qikiqtaaluk																						
CAM-D Simpson Lake	Kitikmeot																						
Cape Christian	Qikiqtaaluk																						
FOX-A Bray Island	Qikiqtaaluk																						
Padloping Island	Qikiqtaaluk																						
PIN-B Clifton Point	Kitikmeot																						
PIN-E Cape Peel	Kitikmeot																						
Bear Island	Qikiqtaaluk																						
CAM-B Hat Island	Kitikmeot																						
PIN-D Ross Point	Kitikmeot																						
CAM-E Keith Bay	Kitikmeot																						
FOX-1 Rowley Island	Qikiqtaaluk																						
FOX-E Durban Island	Qikiqtaaluk																						
FOX-D Kivitoo	Qikiqtaaluk																						
CAM-A Sturt Point	Kitikmeot																						
CAM-C Matheson Point	Kitikmeot																						
PIN-C Bernard Harbour	Kitikmeot																						
FOX-B Nadluardjuk Lake	Qikiqtaaluk																						

Review Requirements; Permitting for phase 3



¹³ Reformatted from a July 2005 DIAND update.

Phase 3 + R A + RAP
Regulatory Approvals / Consultation / Logistics
Remediation (includes mobilization & demob)
Monitoring/ Phase I&II SA

