

PART 5 - IDENTIFICATION OF ENVIRONMENTAL EFFECTS

There has been extensive evaluation of predicted environmental impacts related to the clean up operation. Additionally, mitigation measures have been introduced for both those impacts that are both general and site specific in nature.

The following table summarizes those impacts that have been identified for the DND DEW Line sites and mitigative actions outlined in the Environmental Screening Report for the Cleanup of the DEW Line sites in the Nunavut Settlement Area.

Description	Significance	Monitoring/Mitigation Requirements
Impacts of Landfill Development and Closure		
Potential risks to soils, surface water, terrestrial and aquatic habitat from development and closure of landfills	Potentially significant	<ul style="list-style-type: none"> ● design of landfill development and closure to prevent leachate ● landfills to be contoured to match existing drainage patterns
Impacts of Demolition/Regrading Activities		
Potential risk to existing habitat from demolition and regrading activities	Potentially significant in previously unimpacted areas	<ul style="list-style-type: none"> ● demolition areas to be recontoured to match existing drainage patterns ● regrading to be limited to specified areas
Impacts of Removal and Transport of Hazardous Materials/Fuel/Contaminated Soil		
Potential risks to soils, surface water, terrestrial and aquatic habitat and species and human safety from accidental events such as fuel or hazardous materials spills	Potentially significant in the worst case (i.e. large spill volume)	<ul style="list-style-type: none"> ● development of a contingency plan outlining procedures to follow in the event of an accidental spill ● training and education of employees in emergency procedures ● storage of fuel in dyked tanks ● proper fuel handling techniques, particularly when refuelling equipment
Hazards to human health and safety during clean up, especially during asbestos abatement and facility demolition where PCB paint is present.	Significant due to contaminated nature of material on site	<ul style="list-style-type: none"> ● proper procedures for handling hazardous materials ● removal of hazardous materials from site

Impacts of General Clean Up Activities		
Elimination of potential hazards and sources of contaminants through remediation of existing landfills, removal of physical debris, discontinued use of sewage outfalls, and removal of contaminated soil	Improvement of overall environmental conditions	<ul style="list-style-type: none"> ● compliance and monitoring requirements for engineering performance are detailed in contract specifications
Disruption of heritage sites due to new development, regrading, and/or activities of contractors' personnel	Potentially significant (prior to mitigation) at sites with high potential for archaeological resources	<ul style="list-style-type: none"> ● report and record any features of potential interest, ensure areas are clearly marked ● avoidance of controlled excavation of features ● monitor excavations for additional features ● all personnel to be discouraged from visiting archaeological and other heritage sites
Degradation of permafrost due to clean up operations	Potentially significant in excavations in ice rich ground	<ul style="list-style-type: none"> ● avoid patterned ground and ice rich areas when siting new facilities or borrow sources ● if possible, backfill excavations as soon as practical ● replace vegetation cover or topsoil as soon as possible after excavation ● exploit existing borrow sources to minimize disturbed areas ● monitor for evidence of soil erosion, subsidence, or development of thermokarst
Effect of contractors activities (e.g. noise or disturbance) and/or personnel on terrestrial wildlife species	Potentially significant (prior to mitigation) on sites where wildlife is noted	<ul style="list-style-type: none"> ● minimize activity in sensitive areas ● scheduling of work activities to avoid nesting, calving, or migration periods ● education of employees to prevent on site personnel from harassing wildlife
Effect of contractors activities (e.g. noise or disturbance) on marine wildlife species	Potentially significant (prior to mitigation) on sites where marine wildlife is known to occupy off shore waters	<ul style="list-style-type: none"> ● scheduling of shipping to minimize disturbance to marine environment ● sea mammals to be avoided by all shipping ● vessel traffic to be restricted to traditional shipping lanes

Effect of clean up operations and contractor's activities on terrestrial habitat, vegetation	Potentially significant, at sites where vegetation covers a major portion of the site, for example in the Low Arctic Ecoclimatic Region	<ul style="list-style-type: none"> ● siting of clean up camps or new development (landfills) to be on disturbed ground, wherever possible ● vehicle and equipment traffic is to be combined to existing access roads
Effect of clean up activities on appearance of site	Improvement. Surface debris will be collected and disturbed areas regraded	<ul style="list-style-type: none"> ● none required (Note: some sites may have more extensive clean up)
Other Environmental Impacts		
Use of local services and northern residents during implementation of clean up plans	Positive impact on northern socio-economic development	<ul style="list-style-type: none"> ● tender documents for DEW Line Clean Up contracts will include clauses requiring Contractors to maximize employment and business opportunities in the North
Disruption of heritage sites due to new development, regrading, and/or activities of contractors' personnel	Potentially significant (prior to mitigation) at sites with high potential for archaeological resources	<ul style="list-style-type: none"> ● report and record any features of potential interest, ensure areas are clearly marked ● avoidance of controlled excavation of features ● monitor excavations for additional features ● all personnel to be discouraged from visiting archaeological and other heritage sites
Effect of cleanup operations on local resource use	Potentially significant (prior to mitigation) at sites near year round communities or seasonal camps	<ul style="list-style-type: none"> ● consultation with local communities to minimize conflicts ● scheduling of activities to avoid hunting and fishing activities

PART 6 – CUMULATIVE ENVIRONMENTAL EFFECTS

For the purposes of the DEW Line Clean Up Project, cumulative effects have been defined as changes to the biophysical, social, cultural or economic environments caused by a project component in combination with any on-going, past or future activities. In undertaking environmental assessments, the project management office has included an evaluation of possible cumulative effects, including:

- Impacts over a larger (regional) area including the crossing of jurisdictional boundaries;
- Temporal boundaries beyond the time frame required to complete the clean up work;
- Interactions with Valued Ecosystem Components (both biophysical and socio-economic); and/or
- With other past, ongoing (i.e., operation of the North Warning System, mining activities, existing hamlet operations) or known future (i.e., construction related to the build up of the Nunavut government infrastructure) activities.

This evaluation also included an evaluation of levels of significance.

Cumulative effects arising from the DEW Line Clean Up Project can occur as interactions between project components (either from the same or more than one site) and/or between environmental components. Effects can occur in one of four ways:

- Physical or chemical transport mechanisms;
- “Nibbling loss” (i.e., gradual disturbance);
- Spatial or temporal crowding;
- Growth induction initiated by the project.

An analysis of cumulative environmental effects has been undertaken for this project. In doing so, four steps have been undertaken to date:

1. Scoping, including identifying issues of potential concern, VEC;s that could be affected and boundary setting;
2. Analysis of effects, including an evaluation of baseline data and possible effects on VEC’s. Methods could include the use of overlays to identify where the geographic and temporal extent of various projects’ effects may interact;
3. Identification of mitigation options and recommending measures to be undertaken; and

4. Evaluating significance of these effects, after mitigation actions have been applied.

As a result of this analysis, it can be concluded that, for the most part, both the clean up of each site and the individual components will not lead to significantly adverse cumulative impacts. As a result of initial overlay studies, the clean up of each site can be considered as a short term, distinct individual event that will not have any form of additive effect with past, existing or known future activities.

PART 7 – MITIGATION

Part 5 (above) identifies mitigation measures that are to implemented for this project.



PART 8 – ABANDONMENT AND DECOMMISSIONING PLAN

The contract documents for the DEW Line Clean Up Project will require that the contractor clean up and remediate the area in which their activities took place. Following the completion of clean up activities, all vehicles and equipment, remaining fuel, supplies, personnel, and the construction camp are to be removed from the site by the contractor. The construction specifications provide for a percentage of the payment for mobilisation/demobilisation to be withheld pending a satisfactory withdrawal from the site.

Demobilisation will coincide with the annual sealift. The contractor will be required to arrange for this sealift. All provisions of the Environmental Protection Plan (Annex E) will be strictly adhered to until the demobilisation is complete.

PART 9 – MONITORING AND MAINTENANCE PLANS

For the purposes of this project, monitoring is being conducted for two reasons:

Monitoring in relation to the environmental assessment

This monitoring involves a continual on-site review of impact predictions made during the environmental assessment process. The purpose of this monitoring is two fold:

- to confirm the accuracy of impact predictions made if, and when, they occur on-site and to ensure that mitigative action taken is appropriate; and
- to be able to identify impacts that occur on-site that may not have been identified during the assessment process but, none the less, require an appropriate mitigative response.

The results of on-site this assessment of will be reviewed on an annual basis as part of the project quality assurance program. Assessment areas and impact predictions requiring adjustment or re-evaluation are identified at this point and an action plan promulgated.

Monitoring in relation to environmental objectives

As part of the overall DEW Line Clean Up program, DND will undertake an extensive multiple year post clean up monitoring program at each site. This monitoring program is contained in the DND/NTI Agreement (Appendix H of Annex D). The purpose of this program will be to ensure that environmental objectives, particularly those related to landfill remediation, continue to be met. The results of this program will be provided to stakeholder organisations. In those cases where agreed to remediation standards are not being maintained, an engineering and/or other solution will be implemented to rectifying the situation.

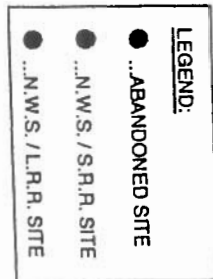
Annex A
To NIRB Submission

LIST OF PERMITS ATTRIBUTABLE TO DEW LINE CLEAN UP¹

TYPE OF PERMIT/ AUTHORIZATION OR LICENCE	DESCRIPTION	CONTACT
Land Use Permit	Required for certain activities that take place on Crown Lands in accordance with the <i>Territorial Land Use Act</i> and <i>Territorial Land Use Regulations</i>	Department of Indian and Northern Affairs Land Administration Yellowknife, NT
Quarry Permit	Required for certain quarrying activities that take place on Crown Lands in accordance with the <i>Territorial Land Use Act</i> and <i>Territorial Quarrying Regulations</i>	Department of Indian and Northern Affairs Land Administration Yellowknife, NT
Authorization for Works or undertaking affecting fish or fish habitat	Required for certain activities that may impact on fish or fish habitat in accordance with the <i>Fisheries Act</i> . Pertains to stream crossings, culverts, siltation and erosion control and effluent discharge.	Department of Fisheries and Oceans Yellowknife or Iqaluit
Permit to undertake work in a migratory bird sanctuary	Required for certain activities that occur within migratory bird sanctuary regulations in accordance with the <i>Migratory Bird Sanctuary Regulations</i>	Canadian Wildlife Service
Explosives permits	Required for activities requiring the use explosives in accordance with the federal <i>Explosives Act</i>	Natural Resources Canada

¹ This list provides a comprehensive listing of possible permit requirements for each of the fifteen DEW Line sites in the Nunavut Settlement Area. Not all nor necessarily any of these permits may be required at a particular site.

TYPE OF PERMIT/ AUTHORIZATION OR LICENCE	DESCRIPTION	CONTACT
Authorization for annual inspection of PCB storage areas	Required when a proponent requests authority to inspect PCB storage areas annually vice monthly	Environment Canada
Marine transportation permits	As required by the <i>Transportation of Dangerous Goods Act</i>	
Air transportation permits	As required by the International Air Transport Association Dangerous Goods Regulations	



Annex C
To NIRB Submission

DND DEW LINE SITES IN THE NUNAVUT SETTLEMENT AREA -
LOCATIONS AND PRESENT STATUS

LOCATION	SITE	COORDINATES	REGION	STATUS
Cape Young	PIN-2	68°56'N 116°55'W	Kitikmeot	CLOSED
Lady Franklin Point	PIN-3	68°28'N 113°13'W	Kitikmeot	LRR
Byron Bay	PIN-4	68°45'N 109°04'W	Kitikmeot	CLOSED
Cambridge Bay	CAM-M	69°06'N 105°07'W	Kitikmeot	LRR/LSS
Jenny Lind Island	CAM-1	68°40'N 101°43'W	Kitikmeot	CLOSED
Gladman Point	CAM-2	68°40'N 97°48'W	Kitikmeot	SRR
Sheperd Bay	CAM-3	68°48'N 96°26'W	Kitikmeot	LRR
Pelly Bay	CAM-4	68°27'N 89°45'W	Kitikmeot	SRR
Mackar Inlet	CAM-5	68°17'N 85°07'W	Qikiqtani	CLOSED
Hall Beach	FOX-M	68°45'N 81°11'W	Qikiqtani	LRR/LSS
Longstaff Bluff	FOX-2	68°54'N 75°10'W	Qikiqtani	SRR
Dewar Lakes	FOX-3	68°45'N 109°04'W	Qikiqtani	LRR
Cape Hooper	FOX-4	68°26'N 66°44'W	Qikiqtani	SRR
Broughton Island	FOX-5	67°33'N 63°39'W	Qikiqtani	SRR
Cape Dyer	DYE-M	66°39'N 61°21'W	Qikiqtani	LRR

LRR = Long Range Radar; SRR = Short Range Radar; LSS = Logistics Support Site

AGREEMENT

BETWEEN

NUNAVUT TUNNGAVIK INCORPORATED

AND

HER MAJESTY IN THE RIGHT OF CANADA

AS REPRESENTED BY

THE MINISTER OF NATIONAL DEFENCE

FOR THE CLEAN-UP AND RESTORATION OF

DISTANT EARLY WARNING SITES

WITHIN THE NUNAVUT SETTLEMENT AREA

(Environmental Provisions)

PREAMBLE

WHEREAS the Government of Canada (Canada) has modernized the air defences of Canada through a joint USA/Canada project referred to as the North American Air Defence Modernization Project (NAADM);

AND WHEREAS NAADM includes the decommissioning of some of the Distant Early Warning (DEW Line) radar sites and the conversion of others to North Warning System (NWS) radar sites;

AND WHEREAS fifteen DEW Line sites are located on Department of National Defence (DND) reserves within the Nunavut Settlement Area (NSA);

AND WHEREAS DND wishes to undertake an environmental clean-up of the DEW Line sites, facilities and associated areas;

AND WHEREAS the Inuit and the Federal Government have an interest in all activities that occur within the NSA, including, but not limited to, protecting the ecosystem integrity and the existing and future well-being of the residents and communities of the NSA and increasing the participation of Inuit and Inuit Firms in business and employment opportunities in the NSA;

AND WHEREAS DND and NTI are voluntarily entering into this Agreement to establish a framework for the decommissioning, remediation and restoration of the DEW Line sites in the NSA;

NOW THEREFORE, in consideration of the premises and mutual covenants contained herein, the Parties agree as follows:

1.0 DEFINITIONS

Debris means hazardous and non-hazardous materials of non-natural origin existing on the surface, or visible and partially embedded within one metre of the surface or within two metres of the surface of any water body at low tide and any structures scheduled for demolition

DEW Line sites means the Distant Early Warning Sites listed in paragraph 3.1 below;

DCL means Defence Construction (1951) Limited the designated contracting agent for contracting for the Department of National Defence for the Dew Line Clean-up;

DND means the Crown in the right of Canada represented by the Minister of National Defence or his delegate

Engineered Landfill means a landfill professionally designed to permanently isolate the contents of the landfill from contact with the environment.

Hazardous materials or substances means all materials or substances designated as hazardous under territorial or federal legislation at the time of the clean-up of a particular landfill.

Inuit has the same meaning as in the NLCA;

Inuit Owned Lands has the same meaning as in the NLCA;

Landfill means any area where a concentration of non-hazardous and/or hazardous substances or materials or Debris have been buried;

Minister of National Defence means the Minister of National Defence or his designate

Nunavut Settlement Area has the same meaning as in the NLCA;

Rules means the *Rules and Procedures for the Management of Inuit Owned Lands* adopted by NTI, as amended from time to time,;

Parties means NTI and DND;

Regional Inuit Associations (RIA) means the Qikiqtani Inuit Association, the Kivalliq Inuit Association and the Kitikmeot Inuit Association;

Relevant RIA means the RIA in the region in which a DEW Line site is located;

Work means all the materials, equipment, goods, services, labour, matters and things done or furnished or required to be done or furnished to perform any DEW Line site decommissioning, remediation or restoration activity.

2.0 OBJECTIVES

- 2.1 The objectives of this Agreement are to establish a broad environmental framework for participation of the Inuit in the clean-up of the DEW Line Sites in the NSA and to achieve cost effective and an environmentally sound DEW Line clean-up as described herein.
- 2.2 DND and NTI will enter into a corollary agreement with respect to economic benefits for the Inuit and Inuit firms including provisions for training (this agreement may or may not involve regional negotiations).

3.0 GENERAL

- 3.1 **Scope.** This Agreement relates to the decommissioning, remediation, restoration and related activities of the following DEW Line sites:

PIN 2 - Cape Young
PIN 3 - Lady Franklin Point
PIN 4 - Byron Bay
CAM M - Cambridge Bay
CAM 1 - Jenny Lind Island
CAM 2 - Gladman Point
CAM 3 - Shepherd Bay
CAM 4 - Pelly Bay
CAM 5 - Mackar Inlet
FOX M - Hall Beach
FOX 2 - Longstaff Bluff
FOX 3 - Dewar Lakes
FOX 4 - Cape Hooper*
FOX 5 - Broughton Island
DYE M - Cape Dyer

* Prior to the signing of this Agreement the clean-up of Cape Hooper (FOX 4) had already begun under a separate set of understandings. Therefore only the post clean-up provisions of this Agreement will apply to this site

- 3.2 **Precedent.** This Agreement is not to be construed as a precedent for any other activities of DND, Canada or any third party. Nothing in this Agreement shall be interpreted or used to define the rights of the Parties, Canada or any third party in relation to any matter under the NLCA or to interpret any Article of the NLCA except for the purpose of this Agreement.;
- 3.3 **Urgency.** The Parties mutually agree to recognize the urgency of the matters dealt with in this Agreement and to perform all required actions as expeditiously as possible.
- 3.4 **Nunavut Land Claims Agreement.** The Parties recognize and acknowledge their respective obligations to comply with the NLCA in connection with all Work.
- 3.5 **Inuit Owned Lands.** All use of and access to Inuit Owned lands by DND, Contractors and subcontractors for the purposes of the Work is subject to the NLCA and the Rules, to the extent that the Rules are not inconsistent with the NCLA.
- 3.6 **Clean-up Schedule.** The commencement and completion of the Work will take place in accordance with the attached Appendix A. The Parties will use their best efforts to adhere to Appendix A.
- 4.0 **Steering Committee**
- 4.1 There shall, during the duration of this Agreement, be a Steering Committee to monitor progress, develop recommendations and suggest alternative solutions for achieving the commitments set forth in this Agreement by:
- (a) reviewing progress in achieving the commitments set out in this Agreement;
 - (b) ensuring that any perceived deficiencies with respect to the Work or to commitments under this Agreement discussed and, where agreed, are expeditiously acted upon;
 - (c) considering other items of mutual concern, as appropriate;

- (d) requesting the Environmental Working Group (EWG), established in accordance with section 7 of this Agreement, to undertake additional study and formulate recommendations to the Steering Committee.

4.2 The Steering Committee shall consist of four members, two to be named by DND and two to be named by NTI. It shall meet at least twice a year and at the request of any Party at mutually agreed upon times and locations. In order to place an item in the agenda, a Party shall provide that item to the other Party not less than ten working days before each scheduled meeting. The Steering Committee shall operate on the basis of unanimous agreement.

4.3 Recommendations agreed to by a majority of the members of the EWG will be incorporated into the site specific plan referred to in section 23 of this Agreement or into the post-clean-up methodology as the case may be. Where either DND or NTI disagree with the EWG recommendations, it will raise the issue at the Steering Committee for discussion in accordance with clause 4.4. If the Environmental Working Group is deadlocked (ie 2-2) on any issue, including scoring of the risk assessment matrix and landfill remediation, the Steering Committee will discuss the situation and attempt, in good faith, to arrive at a consensus. The Parties pursuant to clause 4.5 may, where appropriate, seek independent advice.

4.4 Should unanimous agreement not be reached at the Steering Committee the following approach will be used:

- (a) Prior to Clean-up Commencing - the clean-up will not commence until the issue is resolved to the satisfaction of both Parties.
- (b) Clean-up has commenced - the clean-up will continue in accordance with the site specific clean-up plan. If the issue is not included in the site specific plan then DND will proceed based on the advice provided by its consultants. DND and NTI will continue to attempt to arrive at a consensus.

In either event, both Parties continue to have the option of involving the provisions of section 5 of this Agreement if unanimous agreement cannot be reached. If unanimous agreement is reached at a later date or there is an arbitration decision which differs from the actions taken by DND, the new decision will be implemented.

4.5 The Steering Committee shall, with the agreement of the members, acting reasonably, invite representatives of Government departments, Inuit organizations, non-governmental organizations, Contractors, Subcontractors and others to provide advice or information as required. If requested by the other Party, DND and NTI agree to provide each other with all relevant scientific and technical information, with the exception of:

- advice to Ministers or Inuit Boards of Directors
- negotiating strategies
- commercially confidential third Party information
- personal information

4.6 The Parties each shall be responsible for their respective costs associated with participating in Steering Committee meetings.

5.0 **ARBITRATION**

5.1 If DND and NTI disagree on any question of fact or mixed question of law and fact related to the interpretation, implementation or operation of this Agreement, with the exception of any matter within the jurisdiction of the Arbitration Board under the NLCA, either party may by written demand refer the dispute to arbitration in accordance with the following provisions.

5.2 An arbitration Panel consisting of a single arbitrator who both Parties agree is qualified to arbitrate the question in dispute will render a decision on the dispute. If DND and NTI cannot agree on a single arbitrator then a decision will be rendered by an Arbitration Panel consisting of three similarly qualified arbitrators, one of whom shall be chosen by NTI, one by DND and the third by the two so chosen, which third arbitrator shall be the chairperson. If within fifteen days of having received a written demand, or such extended time as the parties agree, a party fails to either agree to a single arbitrator or to appoint an arbitrator, or if the two arbitrators appointed by the parties do not agree upon the third arbitrator, then upon written application by either party such third arbitrator shall be appointed by the superior court having jurisdiction in the NSA.

- 5.3 The arbitration proceedings shall be held within thirty days following the appointment of the Arbitration Panel in a location agreed upon by the Parties or, if the Parties are unable to agree, as determined by the arbitration panel. The timing for the panel hearing may be extended by mutual consent of the Parties, not unreasonably being withheld.
- 5.4 The arbitration panel shall have jurisdiction to determine all questions of fact, questions of mixed law and fact and to make an award, including interim relief, payment of interest, and costs. If an arbitration panel makes no decision as to costs, each party shall bear its own costs and an equal share of the other costs of the arbitration, including the remuneration and expenses of the arbitration panel.
- 5.5 The Arbitration Panel shall render a decision, in writing, within thirty days of the completion of the arbitration hearing and state the reasons on which it is based. The decision is final and binding and is not subject to appeal. Pursuant to section 17(3)(b) of the *Federal Court Act*, the Parties agree that the Federal Court Trial Division shall have jurisdiction to review the decision of an arbitration panel on any grounds set out in section 18.1(4) of the *Federal Court Act*.
- 5.6 Where a party to an arbitration fails to comply with any of the terms of the decision of the arbitration panel, any party to the arbitration may file in the office of the Registrar of the superior court having jurisdiction in the NSA, a copy of the decision in the prescribed form, whereupon the decision shall be entered in the same way as a judgement or order of that court, and is enforceable as such.
- 5.7 The territorial *Arbitration Act* shall apply in any arbitration under this Agreement to the extent that it is not inconsistent with this Agreement, unless otherwise agreed by the parties.
- 5.8 The arbitration panel may, on application, allow any to participate in an arbitration as an intervenor, if in the arbitration panel's opinion the interest of that person may be directly affected by the arbitration, and on such terms as the arbitration panel in its discretion may order.
- 5.9 Unless the parties otherwise agree, the proceedings and Board's decision shall be made public.