

Executive Summary

1. BACKGROUND

The federal government has initiated the Federal Contaminated Sites Accelerated Action Plan (FCSAAP) this year to clean up federally owned contaminated sites and to address their environmental liabilities associated with each site. The FCSAAP program provides funding for the remediation of contaminated sites posing risks to human health and/or the environment. The Department of Indian Affairs and Northern Development (DIAND) has applied for funding during the initial 4-year period of the program and has secured funds under this program for the investigation and remediation of the abandoned intermediate Distant Early Warning (DEW) Line site at FOX-C (near Ekalugad Fjord) in Nunavut.

The former DEW Line site was constructed in 1957 and subsequently closed and abandoned in 1963; the site has not been formally occupied since 1963. A hazardous materials removal program completed in 1985 and an environmental assessment completed in 1994 have corroborated the presence of various hazardous materials and contaminated soils at this site. A number of fuel drum caches were identified during the site investigations, and many of these drums still contained product at that time and were left in-place. In addition to large drum caches, many individual drums were also strewn haphazardly along the river, near the road and in the bottom of the lake nearby. Elevated PCB concentrations were noted in soil and paint samples collected from various locations throughout the site. These investigations, however, did not include an assessment of hydrocarbon contamination, which has the potential to be a significant source of contamination at the site.

The proposed project will include the complete environmental clean up and restoration of the site, based on criteria and guidelines previously used by the Department of National Defense (DND) for similar projects at other abandoned DEW Lines in the north.

2. PROJECT LOCATION

The former FOX-C DEW Line site is located at 68°42' N, 68°33' W on the east coast of Baffin Island on the south shore of Ekalugad Fjord, 195 km south of the community of Clyde River, Nunavut. The terrain at FOX-C consists of high rugged hills cut by rock outcrops. The beaching area is located on Qarmaralik Cove, 3 km NW of the main station area, which overlooks Ekalugad Fjord at an elevation of 770 m above sea level. A gravel road links the beaching area and the freshwater lake to the upper site.

The site is accessible primarily by barge; due to the uneven terrain on site, an airstrip was never constructed at FOX-C. A nearby freshwater lake has previously been used as a landing strip in the winter and a helipad is located at the upper site.

3. PROJECT ACTIVITIES & SCHEDULE

DIAND wishes to initiate the remediation of the FOX-C DEW Line site at Ekalugad Fjord. Site investigation and site characterization phases were completed in Summer 2004. A Remediation Work Plan for the proposed activities was prepared recently and is included in this submission package. Project work is to be initiated in Summer 2005 with mobilization of some equipment to the site. Actual site construction will be carried out in Summer 2006 and 2007. A detailed project schedule is also included in this submission.

All existing site infrastructure will be demolished and the demolition wastes will be segregated into hazardous and non-hazardous waste streams. Hazardous wastes, predominantly lead based painted materials, will be packaged and transported south for disposal. Non-hazardous building debris and other non-hazardous wastes identified at the site will be interred in an on-site engineered landfill that will be constructed as part of the clean up activities.

Waste consolidation activities will continue and will be primarily focused on the estimated 10,000 abandoned oil drums that have been identified at the site, most of which are empty. The proposed work plan for these items is to collect them using all-terrain vehicles and crush them in accordance with the DEW Line Cleanup Criteria for Barrels. A site specific Barrel Clean Up Protocol has been drafted to address the barrels that remain submerged in the site watercourses. This Protocol will ensure that any petroleum product remaining in these barrels is not released into the water. The Protocol will also ensure that fish and fish habitat are not impacted during or following the removal of these barrels.

Exhaustive site investigations have determined that some contaminated soils remain at the site, but that no sediments or surface water have been impacted. Contaminants of concern at the site are similar to those observed at other abandoned DEW Line sites during clean up activities, and include petroleum hydrocarbons (PHC's), some metals and PCB's.

The DEW Line Clean Up Criteria were established in the mid 90's and have been used for other DEW Line remediation projects by DND. DIAND has adopted these criteria but will augment them with those of the Canadian Councils of Ministers of the Environment (CCME) for some PHC contaminated soils. Site Specific Risk Assessments (SSRAs) will be completed where criteria are not available for the contaminant(s) of concern, based on site-specific issues.

A road that is in very poor condition currently connects the three main site areas, and road construction activities will be required to allow the movement of heavy equipment between these areas, particularly for access to the Mid and Upper Sites. Culverts installation will be required in order to cross a glacial stream that discharges into the lake below. Due to the presence of fish and fish habitat in the stream there is some potential for impacts on this resource. A site specific Culvert Installation Protocol has been drafted

to ensure that potential impacts to fish and fish habitat at this location are minimized. Culverts will be removed upon completion of this stage of the project.

A temporary camp with associated sewage treatment ponds will be constructed. This facility will allow for a maximum of 35 personnel to reside on site for the duration of the construction season, which is anticipated to take up to 75 days during the 2006 and 2007 field seasons.

Equipment and personnel will be mobilized to site by helicopter. These means may be augmented with the use of barge vessels at the discretion of the Contractor.

At completion of the project in 2007, the site surface will be restored to the greatest extent possible. A detailed Remediation Work Plan is also included in this submission.

4. SOCIAL IMPACT OF THE PROJECT

During any remediation project, whenever possible, DIAND strives to support and enhance the development of healthy, sustainable communities by leveraging local skills and knowledge into their approach to addressing environmental issues associated with contaminated sites. By these means core competencies are maximized and deployed. Wherever possible, the project will also adopt solutions tailored to the northern environment and its inhabitants; this includes leveraging local knowledge, as well as the incorporation of provisions accounting for the unique needs of northerners and their environments into the development and implementation of policies and procedures.

Presentations were conducted in Clyde River and Qikiqtarjuaq in May 2004 to inform the applicable Hamlet Councils, Hunters & Trapper Organizations and Qikiqtani Inuit Association of the proposed site work. Presentations were generic in scope and focused on the fact that FOX-C near Ekalugad Fjord is targeted for clean up. The community presentations were used to complete the following objectives:

- Introduce the project to the community.
- Obtain site-specific information from the Inuit who are familiar with current conditions at the site or were familiar with on-site activities during facility operation.
- Identify resources (labour and equipment) in the community that would assist in the execution of the project.
- Identify the issues and concerns the communities had with the site and the proposed work.

Based on these meetings, the most common concerns from the communities of Qikiqtarjuaq and Clyde River regarding the site were:

- The safe human consumption of arctic char from the lake. This lake is a popular fishing area for both communities and they would like to be sure that the fish caught in the lake are safe to eat.
- The potential for contamination resulting from the barrels strewn about the site, in the lake, and along the river leading from the lake to the fjord.

Several arctic char were caught from the lake and sampled for potential contamination; however, levels of contaminants were not elevated above levels noted in fish sampled at other locations throughout the eastern arctic. A long term monitoring program at the site will make provisions for the sampling and analysis of char.

Barrels residing in site water bodies will be removed as part of the clean up work.

DIAND held open public presentations in both Clyde River and Qikiqtarjuaq in December 2004.

Numerous comments and concerns were communicated to DIAND during these presentations. DIAND staff attempted to record these comments and has documented them in an attached spreadsheet, together with appropriate responses from DIAND where applicable.

Separate presentations were held with federal officials in Iqaluit in December 2004. Their comments and concerns are also presented as part of this submission.