

## **Executive Summary**

### **1. BACKGROUND**

The federal government has initiated the Federal Contaminated Sites Accelerated Action Plan (FCSAAP) to clean up federally owned contaminated sites and to address the 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 and has been allocated 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. A large portion of the site is located on Inuit Owned Lands (IOL) as detailed in the application. A separate IOL permit is being applied for concurrently with this application.

The former DEW Line site was constructed in 1957 and was 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 containing product were left in-place. In addition to large drum caches, many individual drums were also strewn randomly along the river and near the road. Elevated PCB concentrations were noted in soil and paint samples collected from various locations throughout the site. The investigations, did not include an assessment of hydrocarbon contamination, which has the potential to be a significant source of contamination at the site.

DIAND augmented work carried out in previous years with a detailed site investigation in the summer of 2004. At the same time, a geotechnical investigation was completed to identify suitable borrow sources and locations for non hazardous landfills and landfarm facilities. A site specific human health and ecological risk assessment was also initiated to assist in determining suitable remediation criteria for the site. Initial barrel consolidation work was carried out in portions of the site utilizing local labour.

Based on the results of these investigations as well as information gathered during the public consultation process, DIAND has finalized the FOX-C remediation work plan and proposes to initiate this work in the summer of 2005.

### **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.

Due to the uneven terrain on site an airstrip was never constructed, therefore the site is primarily accessible by barge. A nearby freshwater lake has previously been used as a landing strip in the winter and a helipad is located at the upper site. Site maps and drawings are included in this submission to assist in the visualization of the site.

The entire area surrounding the site is on Inuit Owned Lands. A small, localized parcel of land that is rectangular in shape has been parceled out and has been retained as Crown Lands and continues to be administered by DIAND. See the attached Site Location Sketch for further details. This area encompasses the Upper and Mid-Station sites including all of the buildings, dumps and debris piles associated with these areas. The Beach and Lake sites, as well as the access road leading up to the Mid-Station and most of the site water bodies (with the exception of the extreme headwaters of the glacial stream) are located on IO Lands.

All infrastructure and most debris, with the exception of some minor amounts of buried will be removed from Crown Land. A non hazardous waste landfill will be constructed on Crown Lands at the Mid-Station site. No borrow source locations will be utilized from Crown Lands. See attached Remediation Work Plan figures for specific site locations.

### **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 the summer of 2004. A remediation work plan for the proposed activities was prepared recently and is included in this submission package. This project is to be initiated in the summer of 2005 commencing with the mobilization of equipment to the site. Actual site construction will be carried out in the summer of 2006 and 2007. A detailed project schedule is also included in this submission.

All existing site infrastructure will be demolished and the material 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 put into the on-site engineered non-hazardous landfills that will be constructed as part of the clean up activities.

Waste consolidation activities will continue and will primarily focus on the estimated 10,000 abandoned barrels 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 DIAND DEW Line site remediation protocol for barrels. A site-specific barrel cleanup 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. None of the site watercourses are on Crown Lands.

The Department of National Defence (DND) DEW Line cleanup criteria were established in the mid 90's and have been used for other DEW Line remediation projects. DIAND has adopted these criteria, under the DIAND DEW Line site remediation protocol, 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. As such, 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. Culvert installations will be required 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. None of the site water courses are on Crown Lands.

A temporary camp and 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. The camp will not be constructed on Crown Lands.

Equipment and personnel will be mobilized to site by helicopter. As well, it is anticipated that barge vessels will also be required by the contractor.

At the 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**

Wherever possible, the project has adopted solutions tailored to the northern environment and its inhabitants; by using local knowledge, and including the unique needs of northerners and their environments in the remediation work plan.

Presentations were conducted in Clyde River and Qikiqtarjuaq in May 2004 in which the Hamlet Councils, Hunters & Trapper Organizations and Qikiqtani Inuit Association were informed of the proposed remediation work. Presentations 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:

- To share information on the project with the community.

- To hear site-specific concerns 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 be able to assist in the execution of the project; and
- To identify the issues and concerns the communities had with the site and the proposed work.
- To develop a better plan.

The concerns raised by the communities at these meetings included:

- 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; and
- Employment and business opportunities.

To address the first concern, several arctic char were caught from the lake and sampled for potential contamination. The study found levels of contaminants were not elevated above concentrations 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. In addition, the barrel removal protocol has been revised to address site specific concerns identified at the community consultations.

Three community representatives went to the site with DIAND officials during the summer field program in order to share information and to see site conditions. Again, information from these consultations was incorporated into the clean-up planning.

Additional public presentations to provide an update on project status, and to receive feedback were held in Clyde River and Qikiqtarjuaq, and with regulators in Iqaluit, in December 2004. A summary of the comments and action plans are provided in appendices to this submission.