

Executive Summary

1. BACKGROUND

The federal government has initiated the Federal Contaminated Sites Action Plan (FCSAP) to clean up federally owned contaminated sites and to address the environmental liabilities associated with each site. The FCSAP 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, and secured, funds under this program for the investigation and remediation of the former Navigational Aid and Weather Station at Radio Island, Nunavut.

Radio Island (see Appendix A) is located south of Resolution Island, at the south eastern tip of Baffin Island, Nunavut. The former Navigational Aid and Weather Station at Radio Island was operated by the Canadian Department of Transport from 1929 to 1961, when it was subsequently moved to the BAF-5, Pole Vault, site located on Resolution Island.

In 1996 the Royal Military College, Environmental Sciences Group (ESG) conducted an environmental investigation of the site (see Appendix F). Their investigations identified soil contaminated with inorganic elements exceeding Tier I and/or Tier II DEW Line Cleanup (DLCU) criteria near the Main House and Winch Shed, Helipad, Generator Building Foundation and in the Beach Area. None of the soil or paint samples collected by ESG contained PCBs in excess of the DLCU criteria. This study also identified elevated levels of inorganic elements in the man-made Pond west of the Main House.

In order to further delineate the contamination on-site and develop a remediation plan, EarthTech conducted a Phase III Environmental Site Assessment in 2001. Results from this study show that the paint onsite contains high levels of lead and some soil is co-contaminated with hydrocarbons and inorganic elements. This report quantified the volumes of hazardous (15 m³) and non-hazardous wastes (200 m³), as well as the volumes of soils co-contaminated with metals and hydrocarbons (1,290 m³).

2. PROJECT LOCATION

Radio Island is located south of Resolution Island, which is located at the southeastern tip of Baffin Island, in the Territory of Nunavut. It is situated at Latitude 61° 18' N and Longitude 64° 52' W. The nearest community is the City of Iqaluit, located approximately 340km northwest of the site. The site does not have an airstrip and is only accessible by sea-lift or helicopter.

The island, which is composed of Canadian Shield bedrock, is approximately 1 km long and 0.5 km wide. The terrain consists of tilted bedrock with parallel rock ridges, knolls and gullies. The only soils identified at the site are located in the gullies and valleys formed by the bedrock. Surface drainage at the site flows along the gullies to the ocean.

The site has a low arctic eco-climate, marked by short cold summers and long winters. Meteorological data collected at Iqaluit between 1946 and 1990, identify mean daily temperatures ranging from -26.8°C in February to $+7.7^{\circ}\text{C}$ in July. The average mean daily temperature over the year is -9.5°C . An average annual precipitation of 424.1mm falls in this area, 60% of which is in the form of snow

The flora in this region is limited to the gullies and valleys where there is soil present. Mosses were found throughout the site where soils were present. Marine mammals, such as walrus, seal, whale and polar bears are common to this region. Shorebirds and waterfowl are also found in this region.

3. PROJECT ACTIVITIES & SCHEDULE

Based on the results of all the investigations, as well as information gathered during the public consultation process, DIAND has developed the Radio Island Remedial Action Plan (Appendix B). It is expected that the contracting and regulatory permitting for this remediation project will be completed in the first half of 2006 with actual site remediation to begin in June and take one season to complete. However, due to the potential for weather delays all permit applications have been submitted assuming a two-year field season.

All existing site infrastructure will be demolished, except for the Main House which will be cleaned and remain on-site as an emergency shelter, and the material will be segregated into hazardous and non-hazardous waste streams. Hazardous wastes, predominantly lead based painted materials and asbestos, will be packaged and transported south for disposal. Due to the lack of borrow sources on-site, all non-hazardous building debris and other non-hazardous wastes identified at the site will also be shipped off-site for disposal. Finally, all contaminated soil above Tier I DLCU criteria will be excavated, containerized and shipped off-site for disposal.

DIAND formally adopted the *Abandoned Military Sites Remediation Protocol* (Appendix G) for use at all DIAND controlled military sites in the north in March of 2005. This document identifies how DIAND will handle most aspects of the site clean ups including cleanup criteria, landfill establishment and closure, hazardous materials and wastes handling and disposal, barrel protocol, building demolition and disposal borrow source development and final site reclamation. Site Specific Risk Assessments (SSRAs) will be used to augment CCME and other previously identified criteria where criteria are not available for the contaminant(s) of concern, based on site-specific issues.

A temporary camp and associated sewage treatment system will be constructed under this permit application. This facility will allow for a maximum of 20 personnel to reside on site for the duration of the construction season, which is anticipated to take one year to complete.

Equipment and personnel will normally be mobilized to site by air using a helicopter. Following the completion of the proposed remediation work the temporary camp will be demobilized.

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 have been conducted in Kimmirut and Iqaluit in late 2005 in which the Hamlet Councils, Hunters & Trapper Organizations and general public were asked to assist in the design of the proposed remediation work. Presentations focused on the fact that the Radio Island site is targeted for clean up in the summer of 2006. 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 Inuit who are familiar with current conditions at the site or were familiar with on-site activities during facility operation; and
- To develop a remediation plan.

An additional community consultation will be conducted in April or May of 2006. This second session will be used by the successful Contractor to share information regarding employment opportunities as a result of this remediation project. In addition, this consultation will be used to identify resources (labour and equipment) in the community that would be able to assist in the execution of the project.

Finally, a closing meeting with the communities will be held following the completion of all remediation activities on the site. This meeting will be used to gather lessons learned from the community to improve future projects.