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**CAMECO CORPORATION**  
**ABANDONMENT AND RESTORATION PLAN**  
**for the**  
**TURQAVIK - ABERDEEN PROJECTS, NUNAVUT**

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Gerard Zaluski, P.Geol.  
District Geologist

Rebecca Hunter, G.I.T.  
Geologist III

# **Abandonment and Restoration Plan for the Turqavik and Aberdeen Projects, Nunavut**

## **1.0 PREAMBLE**

This Abandonment and Restoration (AR) Plan relates to exploration activities on the Turqavik and Aberdeen exploration projects and the associated Qamanaarjuk exploration camp of Cameco Corporation located approximately 100 km west of Baker Lake, Nunavut. The camp is located at 64°37'43"N, 97° 59'40"W. The plan shall be in effect from the present (under existing land use and water permits) until June 30, 2010 or until expiry of permit renewals. The locations of the projects and camp are shown in Figures 1 and 2.

## **2.0 INTRODUCTION**

This AR plan applies to the exploration activities on the Turqavik and Aberdeen uranium exploration projects operated by Cameco Corporation. The exploration activities are based out of the seasonal exploration camp on Qamanaarjuk Lake. The camp, constructed in 2006 and completed in 2007, consists of 5 sleep cabins, a kitchen, combined office and dry cabin, 2 outhouses, a core shack, and a generator shack, all constructed of plywood. This plan covers exploration activities (including exploration drilling), fuel caches, as well as camp activities and their required reclamation.

Questions regarding this plan should be addressed to Rebecca Hunter, the geologist managing the project (306-956-6279 or [rebecca\\_hunter@cameco.com](mailto:rebecca_hunter@cameco.com)) or Gerard Zaluski, District Geologist – Nunavut and Northwest Territories (306-956-6359 or [gerard\\_zaluski@cameco.com](mailto:gerard_zaluski@cameco.com)).

## **3.0 SCHEDULE**

The Qamanaarjuk camp is seasonally occupied and temporary. A camp manager and other camp personnel will maintain the camp on a daily basis. Following each field program it will be prepared for seasonal shutdown.

Routine or progressive restoration practices will be used wherever possible, including garbage disposal, removal of empty fuel drums, and restoration of drill sites. This will minimize the scale of the final reclamation. Final restoration will begin upon completion or cessation of exploration activities. No buildings, equipment, or waste will remain beyond the expiration date of the permits unless new permits are being obtained.

## **4.0 SITE INFRASTRUCTURE**

The layout of the camp is shown in Figure 3. It accommodates 20 people and consists of the following structures:

5 sleep cabins

- 1 kitchen/dining cabin
- 1 office and dry (shared cabin)
- 1 generator/equipment shed
- 2 outhouses
- 1 fuel storage area (with berms and spill kit)
- 1 core shack (new for 2008)
- 1 greywater sump
- 1 gravel airstrip
- 1 incinerator (new for 2008)

## **5.0 ROUTINE AND PROGRESSIVE RESTORATION**

### **5.1 Camp Waste**

Combustible waste will be incinerated on a daily basis. Non-combustible waste will be removed from the camp and taken to the Baker Lake land-fill or another authorized site for disposal.

### **5.2 Fuel and Chemicals**

Empty fuel drums, propane cylinders, and chemical containers will be removed from camp and returned to Baker Lake.

### **5.3 Drill Sites**

Progressive reclamation will be undertaken during drilling programs, where sites will be restored as soon as possible after the drill has been removed. The timbers from the drill pad will all be removed from the site and the area leveled with a hand rake. Efforts will be made to return the site to as natural a condition as possible.

#### **5.3.1 Drill Holes**

After completion of the drill holes casing will be removed or cut off at ground level. Drill holes will be sealed by cementing the top 30 m of the bedrock.

#### **5.3.2 Sumps**

Sumps shall be constructed to collect all drill waste including water, cuttings, salts, and mud and will be at least 30 m away from the ordinary high water mark of a water body. Upon completion of the hole, the cuttings will be backfilled into the holes and/or sumps. Sumps will be scanned to ensure that gamma radiation is <1 uSv/hr. Radioactive cuttings will be disposed of as the proceeding section. The sumps will be filled and leveled.

#### **5.3.3 Radioactivity**

Drill mud solids and cuttings with a uranium concentration greater than 0.05%  $U_3O_8$  will be collected and backfilled down the drill hole. Any drill hole with mineralization greater than 1.0%  $U_3O_8$  over 1.0 m and with a

meter-percent > 5.0 will be sealed by grouting throughout the mineralized interval (at least 10 m above and below).

#### 5.3.4 Waste

All wastes will be removed from the drill site and flown to camp. Combustible wastes will be incinerated and non-combustible wastes will be removed to an authorized disposal site.

#### 5.3.5 Site Inspection and Documentation

Each drill hole location will be located by GPS. Photos will be taken of each site both before and after drilling in order to monitor the restoration. This information will be provided in annual permit reports.

## 6.0 SEASONAL SHUTDOWN

The camp is designed for seasonal use (May through September). Upon completion of the field season the camp will be winterized and shutdown.

### 6.1 Buildings

All structures will be sealed or closed to prevent incursion by animals or damage by windy or stormy weather. Detailed instructions regarding access in emergencies will be posted in an obvious location. Building contents will be boxed and stored securely.

### 6.2 Water System

Water pumps will be disconnected, drained, and removed from the site. Water lines will be coiled and stored in the generator shack/storage shed.

### 6.3 Fuel and Chemicals

An inventory all fuel in caches will be made at the end of each season. All empty containers will be removed from the site (including fuel drums, propane cylinders, and chemical containers). All chemicals (including cleaning supplies) will be removed from the site for the winter. Bulky solids (such as cement and salt for drilling) will be stored in a camp building, out of exposure from the elements.

### 6.4 Waste

#### 6.4.1 Combustible Waste

All combustible waste will be incinerated. All ash will be collected and disposed of at the landfill site at Baker Lake prior to seasonal shutdown.

#### 6.4.2 Non-combustible Waste

All non-combustible waste will be collected and removed via charter aircraft to an authorized disposal or recycling facility.

#### 6.4.3 Grey and Black Water Sumps

The sumps will be inspected, marked, and securely covered for the winter.

### **6.5 Core Shack and Racks**

Upon completion of the field program and drill core logging, the core shack will be cleaned and secured, as all other camp buildings.

All drill core will be properly stored in proper core racks. Gamma radiation levels at long term core storage facilities shall not exceed 1.0 uSv measured 1 m from the surface and in no instance shall exceed 2.5 uSv.

### **6.6 Drill Sites**

At the completion of the drill program the drill will be dismantled and all drilling supplies will be removed from the drill site. The drill will either be demobilized from the project (back to its base of operation) or wintered at the camp site if such arrangements are made with the drilling contractor. In this latter case, the drill will be winterized and all components secured.

As discussed above, drill sites will be progressively restored immediately after the drill has been removed. However, at the end of the season all drill sites will be inspected to ensure they have been adequately cleaned and reclaimed.

### **6.7 Contamination Clean-Up**

Drill sites, the camp, and fuel caches will be inspected for soil contamination that was not noted previously. Any contaminated soil will be treated as outlined in the Spill Response Plan.

### **6.8 Inspection and Documentation**

All disturbed sites (drill sites, camp, and fuel caches) will be catalogued and inspected prior to the seasonal closure. The final state of these sites will be documented and photographed. The results of these inspections will be provided in annual reports to the water resource inspector, NWB, INAC, and KIA.

## **7.0 FINAL ABANDONMENT AND RESTORATION**

The following plans are made for final abandonment and restoration of the project once all exploration on the projects ceases and prior to expiration of the land and water use permits.

### **7.1 Buildings and Contents**

The sleeping cabins and other small buildings will be removed. The larger buildings will be dismantled and all materials removed. All equipment and other building contents will be removed from the site.

Final inspection will be made after restoration of the camp site to ensure that no waste or materials remain. Photos will be taken to record the final condition.

## **7.2 Fuel Caches and Chemical Containers**

Since containers will be removed throughout the program, final remediation will be minimal. All remaining containers from the camp, fuel caches, and other locations will be removed. Fuel cache sites will be inspected, all debris and berms removed, and final photos will be taken of all sites. Any contaminated soils will be treated as outlined in the Spill Contingency Plan.

## **7.3 Sumps**

All sumps will be filled, inspected, and leveled. Final photos and GPS locations will be collected and the information supplied to the Nunavut Water Board.

## **7.4 Drill Sites**

Final inspection will be made to ensure that all drilling equipment, rods, and timbers have been removed from the project area. Sites will be inspected for contamination (treated according to the spill response plan if necessary), leveled, and covered.

## **7.5 Core Storage**

The core storage site will be properly cleaned and maintained to ensure longevity. Radiation levels will be ensured to be below regulation limits (1 uSv/hr at 1 m).

## **7.6 Contamination Clean-up**

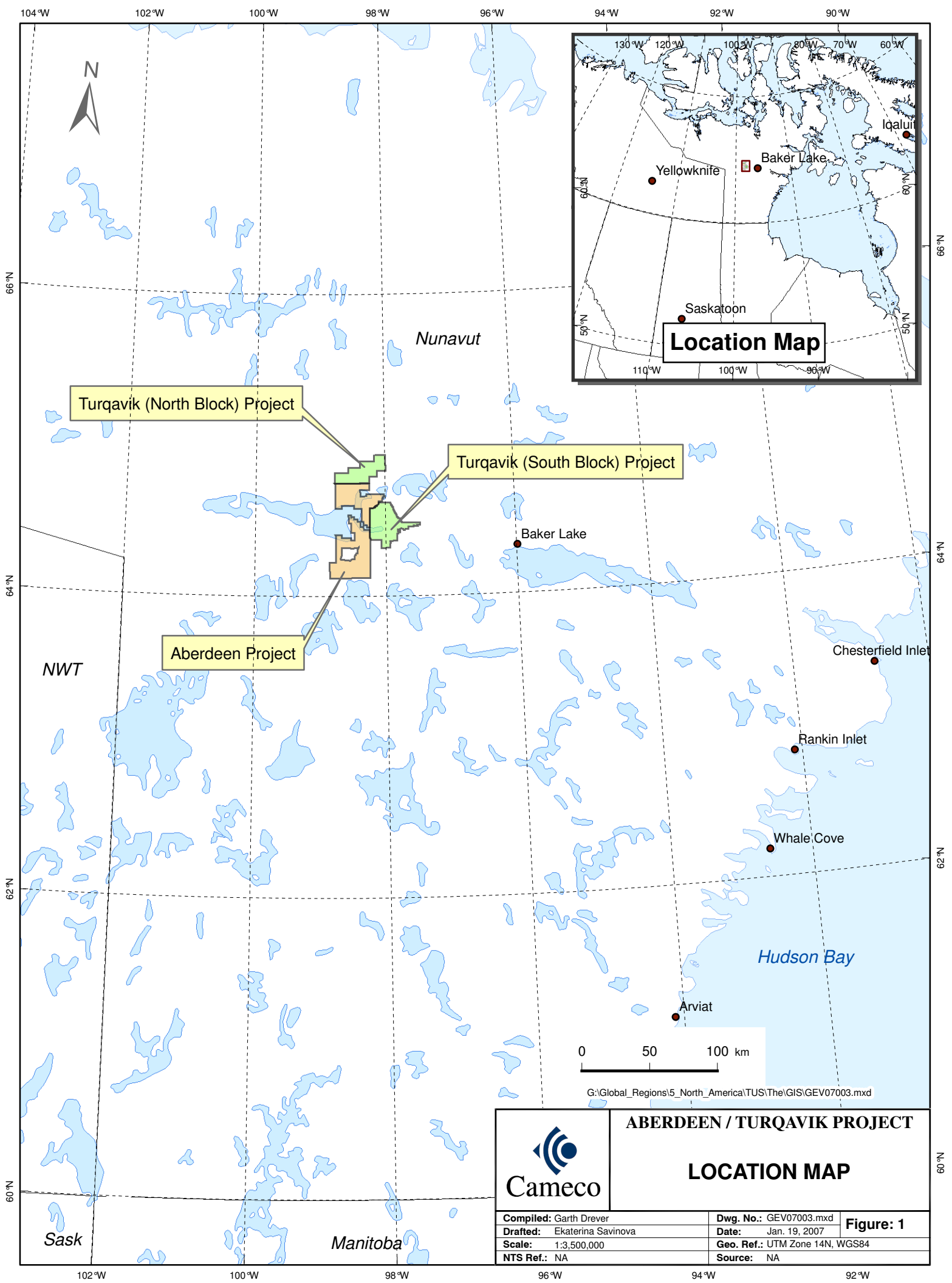
All sites will be inspected for contamination and if necessary treated according to the Spill Contingency Plan. Any sites requiring cleanup will be documented by GPS locations and photographs. All chemicals will be removed from the site at the end of the project.


## **7.7 Aircraft Landing Strips**

Any aircraft landing strips will be located on well drained gravel ridges so that rutting is minimal. Any ruts not repaired through the course of natural freeze/thaw cycles will be repaired by manually filling or raking.

## **7.8 Final Inspection and Documentation**

Upon completion of the final abandonment and restoration, photos will be taken and activities documented. This information will be provided in a final report of the appropriate licensing agencies.





**ABERDEEN / TURQAVIK PROJECT**  
**LOCATION MAP**

Compiled: Garth Drever	Dwg. No.: GEV07003.mxd	<b>Figure: 1</b>
Drafted: Ekaterina Savinova	Date: Jan. 19, 2007	
Scale: 1:3,500,000	Geo. Ref.: UTM Zone 14N, WGS84	
NTS Ref.: NA	Source: NA	

