

SABINA SILVER CORPORATION

HACKETT RIVER CAMP

ABANDONMENT AND RESTORATION PLAN

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## INTRODUCTION

The Hackett River Abandonment and Restoration (A&R) plan was revised to incorporate recent abandonment and restoration developments at the Hackett River site. This A & R plan was prepared as a response to question **38** in the remote camp supplemental questionnaire as part of the license renewal application for Nunavut Water Board License **NWB2HAK0406 – Type “B”**. Updated comments regarding developments of A & R priorities identified in 2004 are printed in dark blue font throughout this report. Additional procedures regarding temporary or seasonal closure of the site were added as were procedures for abandonment and reclamation of the helicopter pad and airstrip.

The Hackett River exploration project consists of a single exploration camp that can support three diamond drill rigs that test proposed exploration targets. The exploration camp is located on Surface Lease 76F 16-1-4 which permits the presence of mineral exploration camp structures subject to certain terms and conditions.

The existing camp was established in about 1970 and was occupied at various times since by Cominco or Etruscan Resources. The last time the camp was in active use prior to Sabina Resources use in 2004 and 2005 was in 1998. The camp is subject to a new regulatory environment as a result of the creation of Nunavut in 1999. The previous 35+ years of exploration work resulted in an accumulation of various waste products at the camp site, minor quantities of debris at or near several drill sites and at an esker airstrip located south of camp. The bulk of the waste is located at the historic camp and at the esker airstrip.

Project related waste products can be classified into 4 types:

1. Old petroleum fuel products
2. Drill additives
3. Scrap metal and equipment
4. Burnable trash

The 4 types of waste are ranked in order of priority for clean-up and severity of possible future environmental impact.

This A & R plan describes the work done to date and the proposed work designed to clean up the historic waste accumulation and mitigate any impacts caused by the present exploration program. The main reclamation work in 2005 involved the dismantling of two inoperable bulldozers and the rod wagon that were shipped to Yellowknife. This consisted of approximately 6 Twin Otter loads of scrap metal.

## EXISTING CONDITIONS AND RESTORATION PLANS

### *Old Petroleum Fuel*

As the snow melted from the camp area it revealed a 100 drum fuel cache of heating oil labeled HRR (after Hackett River Resources) from the 1998 exploration program. The heating oil was found to be suitable for use in the oil stoves in camp. One drum was found to have leaked a small (about 1 litre) amount of heating oil onto the ground. The oil contaminated soil was dug down to the frost line and placed in a plastic bag and flown out to Yellowknife for disposal. The fuel from the defective drum was transferred to another drum and was later used for heating. It is expected that the remaining HRR heating oil will be used when the weather is colder. [All the old fuel marked HRR has now been used up and the drums flown back to Yellowknife for recycling.](#)

Also found in camp were 9 partially full drums of old high octane gasoline, probably last used for piston powered helicopters in the 1970s. The old fuel was shipped out to Yellowknife for recycling in early June.

Also in camp were 16 old drums of diesel, some marked NUNA, some containing water and rust. All the drums containing a mixture of water, fuel and rust have been shipped out to Yellowknife for recycling. Several of the old diesel drums had small oil stained zones near them indicating minor leakage. The oil stained soil has been dug up and placed in plastic sample bags and has been shipped to Yellowknife for disposal. Three of the drums are shown in the following photo along with the remaining rusty drill rods from a much larger pile. [None of the old drums containing diesel remain at camp. All were sent to Yellowknife and then on to a recycling / product recovery location near Edmonton for processing.](#)



One partial drum of old gasoline and a full drum of old Jet B were found in camp. The old gasoline was shipped out to Yellowknife and then on to a facility in Edmonton for product recovery and recycling.

Also found near camp and recovered by helicopter from the shore of Camp Lake is a drum of some kind of petroleum product. The rusty drum is currently located within one of the camp fuel berms. The contents will be transferred to a drum in good condition and will be used in camp or will be shipped out to Yellowknife for recovery. The contents of the rusty drum consisted mainly of water with an oily residue that was captured within the fuel berm and absorbed with hydrocarbon selective absorbant blue matting. The rusty drum was shipped out to Yellowknife for recycling.

At the esker airstrip located south of camp are located 3 drums of old Jet-B fuel. If tests show the contents in good condition the fuel will be used, otherwise the intact drums will be shipped out to Yellowknife for recycling. One sealed drum was brought back to camp where it awaits use. The other 2 unsealed drums were shipped back to Yellowknife for recycling.

#### *Drill Additives*

As the snow melted back it showed approximately 3 partial pallets of 50 lb bags of calcium chloride salt totaling about 1.5 tons. Crows had pecked holes in the plastic bags allowing water to enter which hardened the salt. The hardened bags of salt have been used in the current drill program.

Also found in the generator shed was a pallet containing approximately 20 bags of Gel-X in good condition. No use is expected to be made of the X-TRA Gel colloid (an old style polymer) and it will be flown out to Yellowknife for disposal. Other higher priority clean-up items have been flown out of camp to date. When space is available the X-TRA Gel will be flown back to Yellowknife for disposal.

#### *Scrap Metal and Equipment*

As the snow melted back from the camp site it revealed large quantities of scrap metal and abandoned equipment. Most of the scrap metal was in the form of rusty drill rods, abandoned heavy equipment, empty fuel drums containing metal scrap, abandoned kitchen appliances and oil stoves.

Four Twin Otter loads of old rusty drill steel have already been shipped out to Yellowknife for disposal or recycling. Another 2 Twin Otter loads of rusty drill steel remain at camp and another several loads remain at the esker airstrip. Old drill steel that considered salvageable at the esker airstrip will be moved to camp for use during the current drill program. The esker drill strip is clean of any old equipment and drill steel.



The only thing at the airstrip now is a couple rows of orange garbage bags used to mark the alignment of the esker airstrip.

Two abandoned small bulldozers and a wheeled drill rod wagon are located in camp. One of the bulldozer units has been partially dismantled and awaits transport back to Yellowknife for salvage or disposal at the Yellowknife dump. One of the old crawler units might be of interest to the Yellowknife airport as a historic mining relic from the 1930's or 40's. Plans are to dismantle the equipment this year and transport it to Yellowknife in 2005 from a proposed ice airstrip on Camp Lake. A Bombardier track mounted sled located at the esker airstrip south of camp will be serviced this summer and will be available for use during an anticipated early spring drill program on Camp Lake. The following photo shows the 2 small bulldozers and a rod wagon. Both crawlers and the rod wagon were dismantled and were shipped to Yellowknife in 2005. Some of the pieces were salvaged in Yellowknife while other pieces were sent for metal recycling.



Several Twin Otter loads of old scrap metal in steel drums await transport to Yellowknife for disposal. Another load of abandoned kitchen appliances, (refrigerators, stoves) remain to be transported to Yellowknife for disposal. Other assorted scrap metal consisting of old rusty coil stove elements, worn out metal skimmers and a damaged aluminum boat will also be shipped out as space becomes available on flights to Yellowknife. To date 4 Twin Otter loads of scrap metal, mostly old rusty oil stoves, stove pipe and two refrigerators have been shipped out to Yellowknife for disposal. The following photo shows the pile of scrap metal filled drums and kitchen appliances awaiting transport to Yellowknife. Most

of the scrap metal in the following photo has been shipped back to Yellowknife for disposal or recycling. The damaged aluminum boat and approximately 5 Twin Otter loads of scrap metal in steel drums await transport to Yellowknife. These are considered lower priority and will be shipped out, as space is available.



### *Burnable Trash*

As the snow melted back from the camp site it revealed considerable burnable trash blown off buildings or tents and strewn among the buildings. The trash consisted of small pieces of plywood ripped from buildings by bears, small pieces of plastic and tarp, pieces of paper or cardboard and small pieces of lath and lumber. The burnable trash found around camp has been cleaned up and incinerated. There remain some pieces of plastic tarp and other litter along the edges of Camp Lake that will be cleaned up before freeze-up in 2004. The shoreline of Camp Lake and Boot Lake were walked in 2005 and any litter from camp or drilling activities that blew away during the winter drilling season were collected up and hauled back to camp for incineration or shipment back to Yellowknife for disposal.

### *Buildings*

Upon arrival in camp in 2004 most of the historic structures at the Hackett River camp were found to be in need of refurbishment to make them useable again. Refurbishment of



buildings to date has consisted mostly of cleaning, roof tarp replacement, insulation replacement and painting. The metal roof of the core storage building has been repaired this year. At present all the buildings are in good condition. Several more of the buildings will be painted to help preserve the plywood exterior sheeting. Any wood buildings at Hackett River camp were painted in 2004 and 2005 to help extend the serviceable life of the plywood structures.

### *Old Drill Sites*

Minor quantities of scrap metal and plastic have been found at some of the old drill sites. An old engine block and an old engine battery have been recovered from the old drill sites and await transport to Yellowknife for disposal or reclamation. As other old waste is found in the field it will be noted and when possible it will be recovered for appropriate disposal in Yellowknife. The old engine block and battery were sent back to Yellowknife for recycling. Additional quantities of waste scrap metal and garbage was collected from old drill sites and was hauled back to camp for shipment to the Yellowknife dump.

### *New Drill Sites*

Progressive reclamation occurs after each drill site is vacated. In the event that the site is snow covered the site is visited the following season to ensure cleanliness. The ground surface is recontoured with a rake to provide seeds with additional traction in order to assist the process of natural regeneration.

### *Temporary Camp Closure*

In the event of a temporary camp closure due to winter or a change in the exploration schedule then:

1. Consumable drill supplies and fuel will be drawn down through consumption to the lowest practical safe level.
2. Bungs on fuel drums used to supply diesel for the stoves in camp are tightened to prevent water from entering the fuel drums.
3. The dock is pulled from the lake so the ice does not damage it.
4. All drums of fuel are stored within secondary containment berms to ensure that any fuel leaks are contained.
5. All chimneys and tarps are inspected and secured against possible wind damage.
6. All doors are wired shut to prevent them from opening in winter winds.
7. The grey water tank is drained and any grease cleaned to reduce wildlife attraction.

8. All food is removed from camp or stored in airtight sealed containers within a freezer in order to minimize its appeal to wildlife.

## CAMP AND EXPLORATION SITE ABANDONMENT AND RESTORATION PLAN

The following steps and procedures will be followed to allow proper abandonment and reclamation of the camp and drill site areas.

### *In Camp*

1. The grey water tank will be wiped clean and removed from camp. The grey water drainage sump will be backfilled upon closure of camp.
2. All fuel will be consumed on site or will be flown back to Yellowknife for appropriate recovery. Empty fuel containers will be flown back to Yellowknife for recycling or disposal.
3. All combustible waste will be incinerated in the camp incinerator before closure of the camp.
4. All metal waste will be flown out of camp before camp closure.
5. All drilling related equipment will be flown back to the contractor's base in Yellowknife.
6. The dock will be pulled up from the water for protection from lake ice.
7. Rented tents and equipment will be removed from camp and flown back to Yellowknife upon camp closure. All buildings will be secured against animal entry and wind and left in a good condition consistent with the conditions of Surface Lease 76F 16-1-4.

### *At Drill Sites*

1. All drilling and related equipment and fuel drums will be removed from the site.
2. The drill site will be inspected to ensure that all garbage is removed from the area.
3. All drill sumps will be backfilled covering the cuttings and re-contoured to the adjacent land surface.
4. Drill casing will be pulled where no significant mineralization is encountered. Drill casing will be left at holes where significant mineralization was encountered. Any casing left will be capped.
5. A final inspection will be made of the drill sites to ensure that no waste is left at the site and that there is minimal evidence of land use activity.



#### At the Esker Airstrip

1. At the end of each season the esker airstrip will be inspected and any remaining drums, drill steel or other equipment will be transported to either Yellowknife or to the Hackett River camp.
2. The airstrip will be left in a clean condition at the end of each season.