

Abandonment and Restoration Plan, 2007



Prepared by:

Rescan™ Environmental Services Ltd.
Vancouver/Yellowknife

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1. Project Description

Starfield Resources mineral exploration program on their Ferguson Lake Cu-Ni-Co-PGE Project covers portions of NTS map sheets 65I/13, 14, and 15. This program includes regional and detailed geological mapping and prospecting, airborne and ground based geophysical surveys and a diamond drilling program. The exploration program is of low impact; an infill and step out diamond drill program at 15-20 locations on the west side of Ferguson Lake.

The program is permitted under Land Use Licenses: KVL399C150, KVL103B303, KVCL305H27 and Water License NWB2FE20305.

1.1 Purpose of Report

The purpose of this report is to provide an Abandonment and Restoration Plan for Starfield Resources present Land Use Licenses, and is required under Part 1, items 1 through to 6 of the Water License. This Abandonment and Restoration Plan is also to provide additional information as requested by the amendment applications for a location change of the airstrip, and bulk fuel storage.

1.2 Camp Sites

In the spring/summer of 2006 Starfield began an expansion of its camp site. The original camp, “old” camp at Ferguson Lake Lodge on Ferguson Island, remains in operation to provide logistical support for the construction of a camp across the lake, on mainland, called for the present intents and purposes “new camp”. Starfield intends to abandon “old” camp by late 2007, and will leave the site as close to its pre-Starfield occupancy state as possible. The “new” camp site and core storage area are situated on a low ridge at an elevation between 120 and 130 m on a point on the southwest shore of Ferguson Lake centered approximately at Latitude 62° 53’ 36.1” W, Longitude 96° 54’ 18.7” N, and is located on Map Sheet NTS 65I/15. It is a level area of low bedrock outcrops and sand and gravel. The nearest water body is a small pond about 500 m south of the proposed camp site. This pond drains to another pond and eventually south to Ferguson Lake. The baseline information for these areas is detailed in the report titled “Aerodrome Baseline Information”.

1.3 Airstrip

Presently Starfield is using the airstrip on Ferguson Island to access the site by air during seven months of the year, and is using an icestrip on Ferguson Lake for five months of the year. The existing airstrip on the island is too small and experiences strong cross winds, therefore Starfield would like to amend their Land Use License KVCL305H27 to include an all-weather airstrip on the mainland to service the new camp.

The airstrip would be located approximately 1,000 m SE of the camp site. Initially the airstrip would be designed to accommodate Twin Otter, Dash 8, and DHC-5 Buffalo sized aircraft, adequate to support the currently planned exploration work.

Project Description

Construction of the airstrip will require 21,000 m³ of material for a 1,150 m x 30 m airstrip. The material would be extracted at the rock outcrops under the footprint of the airstrip. An aircraft apron will be required to accommodate maintenance equipment storage and cargo storage.

2. Regular Maintenance and Temporary Closure

The exploration program for the Ferguson Lake Project runs from March 15 to December 15, with a three month shutdown period from December 15 to March 15. During this three month shutdown period, caretakers remain on site to provide ongoing maintenance and watch the camp. The following section details maintenance programs that are completed on a continuing basis throughout the land use operation, seasonal closures, and temporary shutdowns.

2.1 Camp

Both camps are maintained in a tidy orderly fashion. All staff upon arriving at the camp are trained in camp rules such as the Spill Contingency Plan, camp operations, how each type of waste is dealt with (incineration, storage until removal is applicable, *etc.*).

In the case of short term temporary shutdown (less than a year), all portable skid-mounted structures (survival shacks, generator shacks, *etc.*) will be stored in the camp area and other items will be stored in the sheds and locked up. All supplies and equipment of significance to exploration activities will be securely stored in SeaCans. The camp will be left free of any wastes or debris. If the temporary shutdown is determined to occur over a pre-determined extended time-frame, all equipment will be backhauled to Rankin Inlet and stored at M&T Enterprises.

Tables 2-1 and 2-2 show the building and equipment inventory to be left on site in a temporary closure.

Table 2-1
Buildings to be Left On Site in a Temporary Closure

Buildings	Size (feet)	Amount
Portable camp unit (30pp)	52x78	1
Portable generator sheds	8x12	6
Pump sheds	8x12	6
Safety sheds	8x12	6
Sea cans	8x20	4
Sea cans	8x44	2
Sewage treatment building	8x13	1
Storage sheds	16x16	4
Weatherhaven	14x16	3
Weatherhaven	16x24	2
Weatherhaven	20x30	1
Wooden shop	20x40	1
Wooden structures	16x32	4

Table 2-2
Equipment to be Left On Site in a Short Term
Temporary Closure (less than one year)

Equipment Type	Number	Size
Caterpillar Dump	2	
Caterpillar Dozer	1	D4 LGP
Caterpillar Excavator	1	320BL
Honda 4x4 Quads	4	
Caterpillar Loader	1	287BL
Caterpillar (ADV)		
Bombardier Snowcat	1	BR 160
Bombardier Snowcoach	1	
Yamaha Snowmobile	20	Various
GMC Crew Cab with Trax (2 x 1-Tonne)		

Note:

Two Articulated dump trucks, a Loader 955F, a Grader 140G, and a Cedar Rapids Crushing Plant 555 will be in Rankin Inlet until transportation to Ferguson Lake is facilitated by the winter-overland road in March and April 2007.

2.2 Fuel Storage

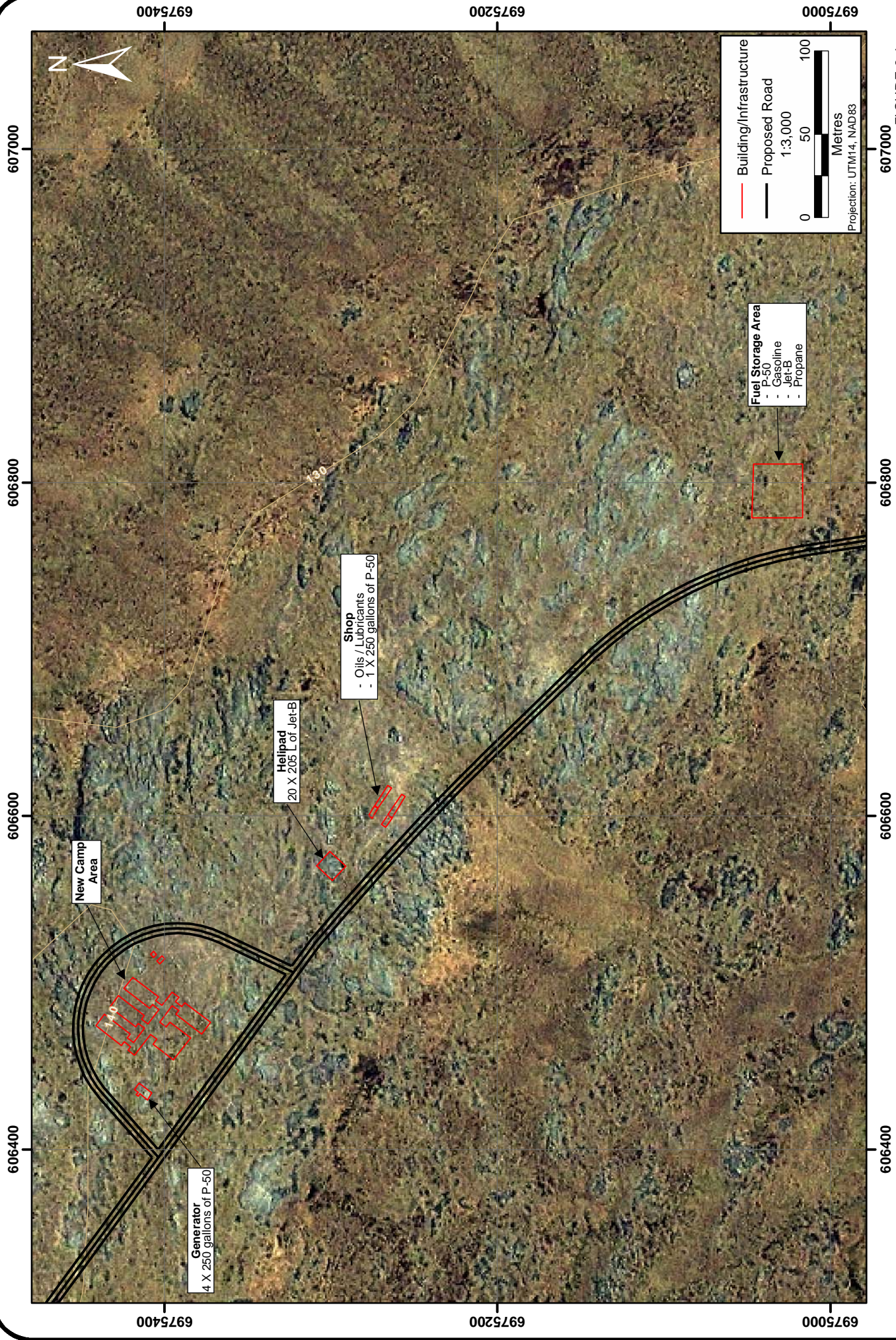
All fuel storage and handling is guided by the procedures set out in the Spill and Contingency Plan for the Starfield Ferguson Lake Project. Fuel and chemical quantities brought on site are provided in Table 2-3. Location of fuel and chemical storage areas are presented in Figure 2-1.

Table 2-3
Quantities of Fuel and Oil to be Stored at Ferguson Lake Project Site

Fuel Type	Container Type	Container Capacity	Total Volume to be Stored On-Site	Number of Containers
P-50	Barrels	205L	300,000 L	1,464
Gasoline	Barrels	205L	20,500 L	100
Jet-B	Barrels	205L (sealed)	150,000 L	732
Propane	Pressured Tanks	100 lb Tanks	30,000 lbs	300
Oils/lubricants	Plastic Containers	10 L	250L	25

Empty drums used during the exploration program are regularly rotated out of camp by fixed wing aircraft in order to be re-filled and then returned to camp during bi-annual re-supply programs. Any empty drums that are deemed not worthy of holding fuel are back hauled to landfill sites by M&T Enterprises.

In the case of temporary shutdown, all of the fuel barrels will be removed to an approved location.



**New Camp Location and Fuel Storage Locations for
the Ferguson Lake Project**

2.3 Solid Wastes

All camp and kitchen wastes are incinerated daily in a CY 1020FA “D” KEYTEK Incinerator. Any waste that can not be incinerated is stored in barrels and removed to the Rankin Inlet landfill. In the case of temporary shutdown, all waste will either be incinerated or removed.

2.4 Waste Oil

Waste oil volumes from the camp and related activities will be approximately 0.1 cubic metres per week. Waste oil will be incinerated or used for heating purposes. In the case of temporary shutdown, all waste oil will be incinerated.

2.5 Hazardous Waste

There will be no hazardous waste materials on the project site.

2.6 Drill Holes

All drill sites are cleaned and maintained on a daily basis. Waste materials, garbage and any empty drums or propane cylinders are routinely returned to camp for incineration or removal to Rankin Inlet. Upon completion of an individual drill hole the drill rig and supplies are moved to a new site and the drill set up is cleaned of any debris and the area returned, as closely as possible, to a pre-disturbed state. In the case of temporary shutdown, all drill sites will be cleaned. The location of all historical drill sites is presented in Figure 2-2.

2.7 Bulky Items/Scrap Metal

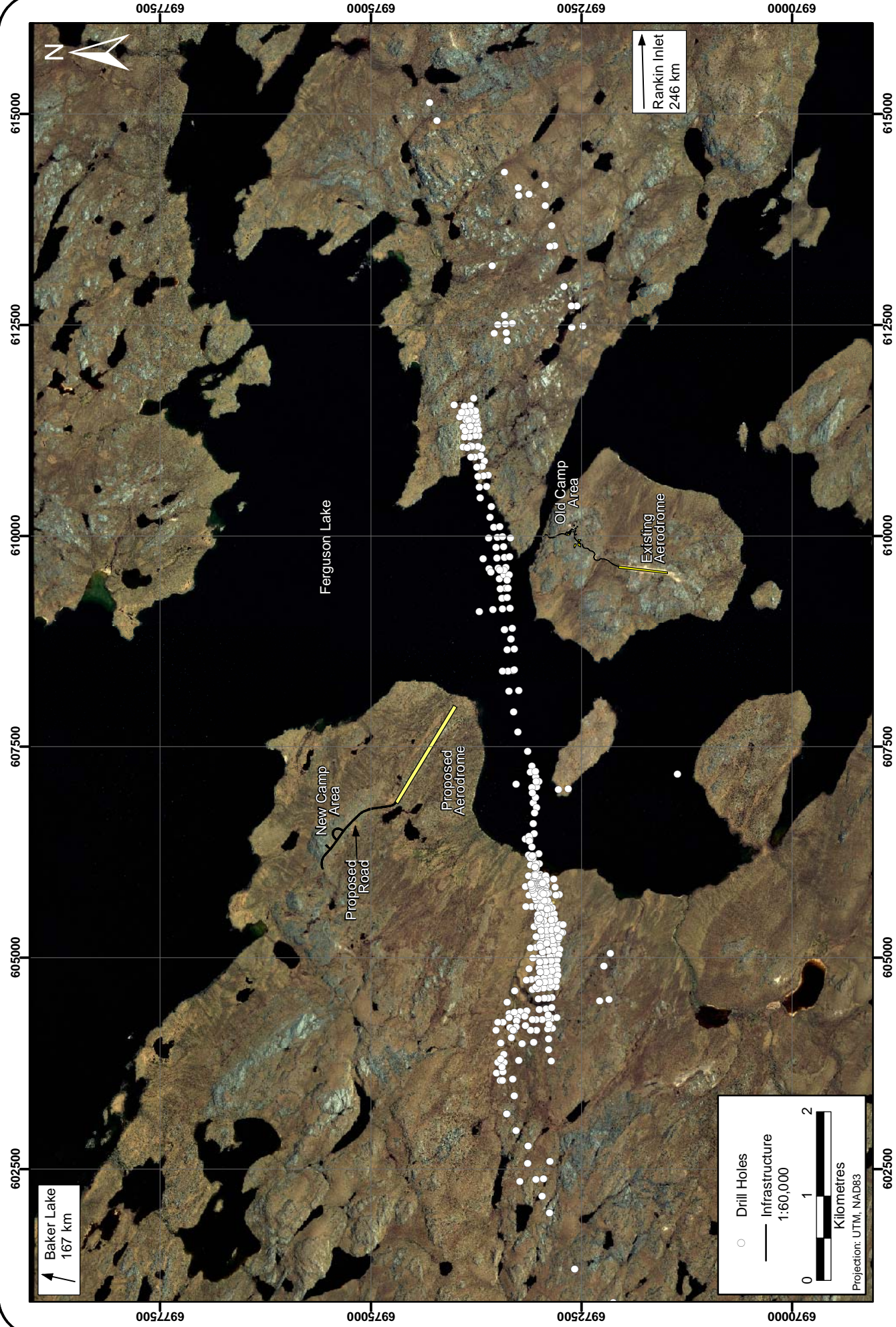
No bulky items have been brought on site by Starfield Resources Inc. Scrap metal in the form of drill rods will be the responsibility of the drilling contractor, and they will be removing them. All drilling scrap will be removed from the project site as backhaul on supply flights. Starfield will be responsible for removing all scrap metal left on site.

2.8 Water Intake

The water intake will be suspended above the bottom of Ferguson Lake nearshore. The intake end of the pipe will be equipped with a screen to avoid fish entrapment. The screen size will be determined following the calculations outlined in DFO’s *Freshwater Intake End-of-Pipe Fish Screen Guidelines*. In the case of temporary shutdown, the water intake pump will be shut off.

2.9 Airstrip at the “Old” Camp

The airstrip at the “old” Ferguson Lake Camp will continue to be used for a landing strip, and as a place for bulk fuel storage until the new airstrip is constructed. In the case of temporary shutdown, the fuel containers will be removed, and the airstrip and surrounding area will be cleared of all imported materials and will be left in a stable configuration so that it can continue to be used as a landing strip for the Ferguson Lake Fishing Lodge.



**Historical Drill Site Locations for
the Fergusson Lake Project**

2.10 Airstrip at the “New” Camp

Once the new airstrip is constructed, it will be decommissioned as described in Section 3.2.3.10.

2.11 Helicopter Landing Pad

The helicopter landing is regularly inspected to ensure there is no debris around the area. A spill kit is located close by in the event of accidental fuel spillage while refueling the helicopter. In the case of temporary shutdown, all debris will be cleared around the helicopter pad.

2.12 Generator

The generators will receive regular maintenance. The generator shacks are equipped with spill kits, and/or absorbent matting should there be a spill of gas while filling the generator. In the case of temporary shutdown, the generators will be turned off, and the shacks will be closed and locked.

3. Final Abandonment and Restoration

3.1 Ferguson Lake “Old” Camp

The summer of 2006 soil and vegetation surveys were completed around the “old” camp area to assess hydrocarbon contamination; thus determining areas requiring restoration.

At snow melt, restoration of the land will begin. Any land that has been disturbed from the “old” camp site, such as matted/stressed vegetation, vehicle ruts, land affected from petroleum spills, and any other areas of disturbance will be recontoured (if required), stabilized and re-vegetated with a northern seed variety. The restoration will be as close as possible to a pre-disturbed state. The grey water sump will be back filled, recontoured, stabilized and re-vegetated with a northern seed variety, and restored as closely as possible to a pre-disturbed state.

A final inspection will ensure that there is no remaining material at the site and that there is little/no evidence of Starfield Resources land use activity at the Ferguson Lake fishing lodge.

Written and photo documentation of the site restoration, will be provided to the Nunavut Water Board, and the Kivalliq Inuit Association

3.2 New Camp Site and Drilling Operation

3.2.1 Time Frame

The Ferguson Lake Project is still in the exploration stage therefore it is not practical, at this time, to subscribe to a definitive schedule for the conclusion of this land use operation. The present Water License NWB2FER0507 expires in July 2007, and the present Land Use Licenses KVL399C150 and KVL103B303 expire on April 30, 2007 and March 25, 2007 respectively. Starfield Resources is going to apply for extensions to these licenses to continue its land use of the Ferguson Lake area. However, if an early closure occurs, or upon Starfield Resources completion of the land use operation, the following procedures will be followed in order to allow for proper abandonment and restoration of the area.

3.2.2 Site and Camp Description

The “new” camp site and core storage area is situated on a low ridge at an elevation between 120 and 130 m on a point on the southwest shore of Ferguson Lake. It is a level area of low bedrock outcrops and sand and gravel, suggesting good drainage. The nearest water body is a small pond about 500 m south of the proposed camp site. This pond drains to another pond and eventually south to Ferguson Lake.

The camp configuration will consist of a 30-person portable camp with integrated facilities for sleeping, cooking, eating, recreation and washing, as well as structures for water and waste treatment, a core shack, ski-doo shed, tractor shed, office, safety shack, storage sheds, weatherhavens, and pump sheds. If need be, the camp can expand to a 40-person portable camp with the same integrated facilities.

The camp will be in operation from March 15 to December 15 with a maximum of 30 people, and from December 15 to March 15 with 2 to 3 caretakers. It will be a permanent camp with the possibility for expansion to support more people if the project goes into production phase.

3.2.3 Restoration procedures

3.2.3.1 Camp

When the camp is no longer required all structures, temporary buildings, machinery, equipment, materials, fuel drums, storage containers, and any other items used in connection with the camp will either be burned or removed from the site. The area will be stabilized and re-vegetated with a northern seed variety, and restored as close as possible to a pre-disturbed state.

3.2.3.2 Fuel

Upon closure all fuel drums will be removed and the non-reusable drums will go to the Rankin Inlet landfill. The containment system will either be removed or recontoured, and the area around the fuel containment will be sampled for hydro-carbon contamination. If there is any hydrocarbon contamination, the contaminated materials will be removed and the area will be stabilized and re-vegetated with a northern seed variety, and restored as closely as possible to a pre-disturbed state.

Rescan Environmental Services Ltd. sampled the “old” campsite and airstrip area for hydrocarbon contamination during the summer of 2006. The results from this survey will assist in the clean-up of the site to ensure removal of all hydrocarbon contamination. The hydrocarbon contamination clean-up of around the “old” camp and fuel storage area will commence in 2007.

3.2.3.3 Waste Water Sump

With the treatment system of the Rotating Biological Contactor (RBC) there is no contamination to the sump. The water discharge is above water quality guidelines, and all sludge is incinerated. The sump is only present as a contingency in case the RBC has a breakdown, and the effluent does not meet the effluent quality criteria.

At time of closure the sump will be backfilled, recontoured and seeded with a northern seed variety.

3.2.3.4 Solid Wastes

At the time of closure most wastes will be incinerated. Any waste that can not be incinerated will be placed in barrels and removed to the Rankin Inlet landfill. At the time of closure the Incinerator will be removed along with any barrels of garbage. The soil under and around the incinerator will be stabilized and re-vegetated with a northern seed variety, and restored to a pre-disturbed state.

3.2.3.5 Waste Oil

All waste oil will be incinerated.

3.2.3.6 Hazardous Waste

There will be no hazardous materials on the project site.

3.2.3.7 Drill Sites, Sumps and Cuttings

All drill sites, sumps, and cuttings are dealt with and reclaimed at the completion of a hole. For final restoration all old drill sites, sumps and cuttings will be re-inspected to ensure that all areas have been restored as close as possible to a pre-disturbed state.

3.2.3.8 Bulky Items

No bulky items have been brought on site by Starfield Resources Inc. Scrap metal in the form of drill rods will be the responsibility of the drilling contractor, and they will be removing them. All drilling scrap will be removed from the project site as backhaul on supply flights.

3.2.3.9 Water Intake

Upon closure the water intake pipe and pump from Ferguson Lake will be removed, and backhauled off the site.

3.2.3.10 Airstrip and Road at the “New” Camp

The airstrip and road at the “new” Ferguson Lake Camp will be located in a bedrock controlled area with outcroppings separated by depressions. Coarse and fine textured morainal and glaciofluvial materials fill the depressions. Organic soils build up where the bedrock impedes drainage. This results in a substantial variation in the soils over short distances. As well, permafrost occurs at approximately 30 cm depth.

Part of the bedrock will serve as a base for the airstrip and road but raised bedrock will be blasted to achieve a level surface. The blasted rock will be crushed and used to fill depressions. This will reduce the impact of these facilities as borrow pits, which result in more disturbance, will not be required. A one metre layer of riprap rock will be spread over the airstrip and road surface and covered with 0.5 m to 1.0 m aggregate to provide a uniform base.

The existing vegetation in the footprint of these facilities includes such species as dwarf birch, Labrador tea, cranberry, crowberry, sedges, and grasses. This vegetation is generally shallow rooting, very fragile, and slow growing. The airstrip and road will be reclaimed upon closure. The most successful opportunity to achieve re-vegetation of these facilities upon closure in these harsh conditions is to salvage and store the plant material and soils and use them for closure. Therefore, prior to construction, the vegetative layer including the root mass, will be carefully stripped. The soils will then be salvaged from crevasses and depressions. The topsoil or organic layer will be stripped separately from the subsurface layer where it occurs where possible. If the topsoil is non-existent or thin (*e.g.* < 10 cm), the surface soil and subsoil will be salvaged together. Care will be taken not to disturb the permafrost. A soil specialist or vegetation ecologist will assist with the operation.

The topsoil will be stockpiled separately from the subsoil where it will not be disturbed during construction or operation of the airstrip and road. The soils will be analyzed for fertility. A

fertilizer amendment will be added based on the results of the analysis. The stripped vegetative layer will be placed on the surface of the topsoil stockpile and gently pressed into the topsoil to achieve good contact between the roots and the topsoil. The subsoil stockpile will be seeded with a northern seed variety grass. The seeding of the subsurface material and the vegetative cover on the topsoil stockpile will prevent erosion of the stockpiled material. The vegetation will be assessed the following spring. Bare areas will be reseeded to ensure a good cover.

When the airstrip at the “new” Ferguson Lake Camp is no longer required by Starfield Resources, the fuel storage area will be removed. All fuel drums will be removed and the non-reusable drums will go to the Rankin Inlet land fill. The area around the fuel containment will be sampled for hydro-carbon contamination. If there are any contaminated soils/rocks they will be removed and the area will be stabilized and re-vegetated with a northern seed variety, and restored as close as possible to a pre-disturbed state.

The airstrip, road, and surrounding area will be cleared of all imported materials. If the crushed rock is removed from the airstrip and road at closure it will have to be landfilled which will cause further disturbance of the site. The aggregate will be incorporated into the closure plan. The edges of the airstrip will be re-contoured and drainage ditches will be filled to return the site to previous conditions as much as possible. As the area is naturally variable with shallow to bedrock soils, the subsoils and topsoil will be spread onto the aggregate remaining on the airstrip and road. As there is a limited amount of soil, parts of the airstrip and road will be recontoured to provide an esker type of landform, common in the area. This will allow for sufficient soil to be placed on selected areas to achieve successful re-vegetation

The subsoil will be spread first on the selected areas. Care will be taken not to compact the soils. The soils will be lightly ripped where compaction occurs. The grasses growing on the subsoil stockpile will be incorporated into the soils, providing organic matter to the soils. The vegetative cover on the topsoil stockpile will be carefully stripped. The topsoil will then be spread on the surface. Care will be taken not to compact the soils. If the soils are compacted, they will be lightly ripped. The vegetative mat will then be placed on the surface and lightly tapped to insure good contact between the roots and the topsoil. This will be carried out in the spring to allow the plants to get well established and grow during the short growing season. The vegetative cover will be assessed in the following spring for successful re-vegetation. Bare areas will be seeded with a grass mixture suited to the climate.

3.2.3.11 Helicopter Landing Pad

The helicopter will be made of a wooden platform. This structure keeps the pad surface raised above the vegetation and minimizes disturbance to the vegetation and soils.

Upon closure all debris around the helicopter landing area will be removed as well as the wooden platform. The soils under the wooden frame supports will have been compacted and, therefore, these areas will be gently ripped to reduce surface compaction. Care will be taken not to disturb the permafrost. The ripped areas and areas under the platform where the vegetation is weak or non-existent, will be seeded with a grass mix suitable to the climate. This will be carried out in the spring to allow the new plantings to establish and the existing vegetation to grow. The

success of the rehabilitation of the area will be assessed the following spring. At that time, any bare areas will be reseeded.

3.2.3.12 Generators

Upon closure the generator shacks will be removed from the site, and the area around the shacks will be inspected for hydrocarbon spills, stabilized and re-vegetated with a northern seed variety (if need be), and restored to a pre-disturbed state.

4. Summary

Starfield Resources Inc. will operate the camp in a safe, efficient and environmentally responsible manner. The camp site will be kept in conditions that meet or exceed permit specifications. All wastes, materials, or used equipment will be treated as required or removed from the site as soon as practical. At time of closure, the disturbed area will be returned to a pre-disturbed state and to the satisfaction of an Inspector.

