PROJECT DESCRIPTION
RELICENCING PROGRAM
HIGH LAKE PROJECT

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NUNAVUT, CANADA

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1.0 INTRODUCTION

Wolfden Resources Inc. **(Wolfden)** is a Canadian exploration and mining development company based in Thunder Bay, Ontario. Wolfden is applying for renewed land use permits and licenses to support on-going mineral exploration activities at its High Lake property located approximately 50 km south of Grays Bay, Coronation Gulf, in the Kitikmeot region of Nunavut. Wolfden acquired the High Lake property in 2000. To date, the basic objective of the exploration program at High Lake has been to identify, expand and refine the resource base to support pre-feasibility and feasibility studies required for final mine production planning.

Exploration efforts at the High Lake are intended to further delineate and confirm ore reserve estimates to support a combined underground and open pit mine. Since Wolfden acquired the property, the exploration program has operated from a rudimentary exploration camp with capacity for up to 50 persons, and has been supported by small aircraft that use a short gravel airstrip at Sand Lake, some 12 km north of High Lake, or land on High Lake using floats or skis, depending on the season. There are no permanent roads to the site.

2.0 KEY COMPONENTS

The key components of the High Lake renewal program include building an airstrip (and temporary construction camp) at Sand Lake, and establishing a new camp at High Lake (and eventually removing the existing High Lake exploration camp). In order to achieve this, various supplies and equipment will be barged to Grays Bay this summer (2006), unloaded and stored until they can be transported via winter trail to the Sand Lake and High Lake sites in January 2007. Construction of the airstrip and new High Lake camp would commence in early spring, 2007.

The activities for which new authorizations are being applied for include:

- Ongoing exploration drilling (>10,000m per year) to further define the known deposits and to evaluate the economic potential of other targets within the High Lake property (2006 and 2007).

- The construction of a 70-person Weatherhaven camp at High Lake that would include a power generation facility, maintenance garage, pump house and fresh waterline, sewage plant and gray waterline, fuel storage facility, core shack, various equipment laydown areas, access roads, and incinerator (Winter 2007).

- The construction and operation of a gravel airstrip located near Sand Lake, and the 12 km all-season access road to High Lake (winter/spring/summer 2007).

- Establishing and operating a winter trail from Ulu to High Lake and from High Lake to Grays Bay, to transport construction and camp equipment, fuel storage tanks, and necessary materials and supplies to High Lake/Sand Lake (winter 2007).

- The construction and operation of an explosive storage area located approximately 5 km south of Sand Lake (summer 2007).

- Construction and operation of a rock and gravel quarries to provide granular material for roadbed and airstrip material and construction aggregate (winter/spring 2007).

Part of the equipment required for the construction of the winter trails, the airstrip, and the camp is presently located at Ulu. Other materials and equipment will be barged from Hay River to Grays Bay during the summer of 2006. This equipment will be temporarily stored at Grays Bay prior to hauling it to High Lake via a winter trail during early 2007. The equipment located at Ulu will also be transported to High Lake via a winter trail at this time. The sequencing of these activities is anticipated as follows:

July/August 2006	Barge equipment and supplies from Hay River to Grays Bay. Temporarily store equipment at Grays Bay until January/February, 2007.
January/February 2007	Open Ulu and High Lake Camps. Open Winter Road from Ulu to High Lake and High Lake to Grays Bay. Move equipment and supplies from Ulu to High Lake and then from Grays Bay to High Lake. Temporary construction camp is built at the Sand Lake Airstrip. Install tank farm at Sand Lake. Plough ice landing strip on Sand Lake.
March 2007	Start fuel haul. Use winter road to travel between High Lake and Sand Lake. Open aggregate sources. Open quarry at High Lake camp site. Drill and blast quarry rock for site grading fill at Weatherhaven Camp. Complete rock and gravel pad for Weatherhaven Camp, start all-season road to Sand Lake.
April/May 2007	Construct water treatment system, sewage treatment system, camp buildings and shop at Weatherhaven camp site. Quarry rock and aggregate for airstrip construction, crush and stockpile processed aggregate for airstrip surfacing. Sand Lake and High Lake facilities are accessed by winter road and temporary tote road.
June-September 2007	Cut/fill construction at airstrip, bulk blasting and filling along all-season road alignment, rough grading to subgrade level.
October/November 2007	Final surfacing and fine grading of airstrip and permanent access road.
December 2007	Substantial completion of project, site fully operational.

3.0 PROJECT JUSTIFICATION

The site and infrastructure improvements proposed by Wolfden have been carefully planned to provide more orderly and economical site operations while conducting ongoing mineral exploration and ore deposit evaluations, as well as to provide enhanced safety and comfort for staff staying at the site. The proposed location of the Weatherhaven camp, on higher ground away from the shore of High Lake, and the installation of fully engineered and functional wastewater treatment and fuel storage facilities will enhance environmental protection of the High Lake area. (Relocating the existing camp away from the High Lake shoreline was suggested in a recent recommendation from the Kitikmeot Inuit Association (KIA) following a site visit in June 2005.

Construction of the Weatherhaven camp will provide a more comfortable, healthier and safer environment for the geological, drilling, environmental, engineering and construction crews working in the area. This camp will have a modern water treatment and sewage facility designed to have minimal impact to the environment, as well as larger generators for a more reliable source of power for heat and lights. Fuel will be stored in tanks within a bermed area, thus minimizing environmental risk associated with potential spills.

In addition to the Weatherhaven camp, the construction of a gravel airstrip is required to economically rotate personnel and facilitate re-supply at High Lake by using larger land-based aircraft such as the Hercules, Buffalo, Dash 8 and Dornier. Presently, the existing camp is mainly re-supplied by smaller, more expensive float or ski equipped Twin Otter aircraft. The cost of hauling freight using these smaller aircraft is considerably higher than with the larger aircraft, given the limits on size and weight of items that can be flown into the camp. Smaller aircraft are also more restricted by poor weather conditions than larger aircraft.

The work proposed represents a significant monetary investment to the benefit of the economy and residents of Nunavut. Wolfden's willingness to invest in these necessary infrastructure improvements further demonstrates its confidence and commitment in putting the High Lake deposits into production by 2009.

4.0 INFRASTRUCTURE UPGRADES AND ACTIVITIES

4.1. WEATHERHAVEN CAMP

The proposed Weatherhaven camp will be located approximately 1 km southwest of the existing camp at High Lake. A general schematic drawing showing site and road layout is provided on Figure 1. The location was chosen for its relatively level terrain, easier access via the all-season road to the airstrip, and proximity to the proposed mine development in the future. A portable Weatherhaven tent camp, fully equipped with sleeping quarters, kitchen, laundry, first aid and potable water and sewage treatment units for up to 70 persons will replace the existing exploration camp, once it is operational. Once mine construction begins, this camp could then be used to accommodate some of the construction personnel that will be working at the site.

4.1.1. SITE PREPARATION AND CONSTRUCTION

The Weatherhaven camp will be transported from Grays Bay to the site via a winter trail in early 2007. The camp will be built on a prepared site, occupying an area of about 0.5 ha. The foundation will consist of an insulated wooden floor installed atop wood cribbing. The wood cribbing will in turn rest on a 1m layer of granular material to preserve permafrost ground conditions. Aggregate material for the camp foundation will be sourced from a proposed quarry nearby. A construction crew of 25 persons will be required to erect the Weatherhaven facility.

4.1.2. POWER SUPPLY

Power requirements to service the camp, including heating, will be supplied by a new, fully enclosed generating plant.

4.1.3. WATER SUPPLY AND WASTE WATER

Fresh water will be sourced from a small lake, L22, located west of the proposed camp (Figure 1). L22 has an estimated volume of 192,000 m^3. Assuming a consumption rate of 250 liters/person/day, L22 would be able to supply the estimated 70-person camp and not exceed the extraction limit of 5% of total lake volume. The water intakes will be equipped with floating rafts to contain the pumps and the electrical service equipment. Heat-traced and insulated water lines will connect the fresh water pumps to the camp water treatment system.

Domestic sewage and grey water will be treated on site by means of a Rotating Biological Contactor system, similar to the one used successfully at Ulu. Treated effluent from the system would be discharged to Lake L20, a small lake southeast of the Weatherhaven

camp, as shown on Figure 1. Studies completed over the last two years indicate that this lake does not support fish, and drains into non-fish bearing waters.

4.1.4. SOLID WASTE DISPOSAL

A combination of a high efficiency incinerator and a small landfill site is proposed to handle solid waste. All combustible, non-hazardous solid waste, including domestic waste, kitchen waste, and industrial waste (e.g. light plastics, paper, cardboard, oil filters, air filters) would be incinerated. Scrap wood will be sorted and reused, or burned. Scrap metal would be stored in 205 litre drums until it can be removed from the site and recycled/disposed of at an appropriate facility. Should this not prove to be practical, then scrap metal will be landfilled. The remaining non-combustible waste would be landfilled, including the following designated items:

- Rubber products
- tires
- Heavy plastics
- Glass
- Styrofoam and insulation
- Electrical wiring
- Compressed gas containers
- Ash produced from the incinerator

The landfill site is located approximately 0.5 km southwest of the proposed camp, accessible by road. The landfill will only be used during the exploration phase and during mine construction. It will be decommissioned and permanently capped once production begins and disposal space is available in the waste rock piles. The landfill occupies an area of approximately 1800 sq. meters and will be constructed almost entirely from sand imported from the Sand Lake area. The landfill will be lined with a synthetic, low permeability liner. Waste will be buried on a regular basis.

Waste deemed as hazardous material would be shipped off-site for disposal. Engine waste oil will be burned in the incinerator.

4.1.5. FUEL STORAGE

Diesel fuel would be stored at the camp in a single-walled 55,000 litre fuel tank. The fuel tank would be contained within a bermed area designed to hold 110% of the volume of the tank. A high-density polyethylene liner would be installed to prevent release of any spilled substances through exfiltration. A liner would be placed at the loading apron to prevent any spillage from contaminating the ground or surface water supply.

4.1.6. CAMP OPERATIONS

The Weatherhaven camp will be suitable for year round use but it is anticipated that the camp will be closed down each year for a month or two around the December break. During the peak exploration season, occupancy is anticipated to be as high as 70 people.

4.2. EXPLOSIVE MAGAZINE

Some drilling and blasting would be required to quarry material for construction of the camp and associated infrastructure, the airstrip and access road. For this reason, an explosive storage area would be established to store explosive material (Figure 4). The temporary magazine will be located approximately 5 km south of Sand Lake and would be accessible by the road connecting the airstrip to the camp. The magazine will consist of wood-lined seacan storage containers. The explosives would remain on site securely locked at all times. For seasonal shut downs, the remaining inventory would be taken off site either by winter road (to Lupin) or via air, depending on the timing of closure. The design of the explosive storage facility will conform to current legislation. The detonators and the Anfo will be stored in separate areas with bermed protection around the detonator storage area.

4.3. GRAVEL PITS AND QUARRIES

Four potential aggregate sources are proposed. These sources include two potential bedrock quarries and two sand and gravel pit sites. The anticipated areas for aggregate extraction are shown on the Figures 1, 2 and 4. There will be additional areas needed for the construction of stock piles, roads, equipment parking areas, processing areas, crusher set-ups and other ancillary activities. The full area of the aggregate extraction and processing operations will be presented in greater detail in plans submitted for quarrying permits. Final determinations of the quantities of material to be extracted from these sources will be made following field investigations and final civil/grading designs to be completed in the summer of 2006.

It is anticipated that the small amount of overburden and vegetation currently covering the granular deposits will be stripped from the granular source areas and that extraction of aggregate will be carried out using a combination of excavators, rippers, bulldozers, loaders and trucks. In addition to pit-run gravel extraction crushing and screening of aggregate is anticipated at the two bedrock quarry locations to produce a processed aggregate suitable for the running surface of the road and airstrip. The extent of the removal of overburden will be limited to the extraction areas only.

4.3.1. SAND AND GRAVEL PITS

Aggregate Source No. 1 (Figures 2 and 4) is located west of the airstrip on a raised plateau-like glaciofluvial land feature. Sand and gravel will be extracted from this site for use in the construction of the airstrip and northerly sections of the access road. The pit will be linked to the work area by a haul road passing to the immediate south of Sand Lake. It is anticipated that pit-run granular material only will be drawn from this site and used without screening or crushing. Some selective extraction should be expected depending on the character of the material encountered in the excavation.

Aggregate Source No. 2 (Figures 2 and 4) includes an area south of the airstrip site where a combination of natural sand and gravel will be extracted along with drilled and blasted quarried rock to form a processed aggregate for the final finishing and fine grading of the airstrip. It is anticipated that this site will be operated as combined sand and gravel pit and quarry. This will be the principal source of pit-run granular, blasted rock fill and crushed, processed aggregate for the airstrip and northerly sections of the permanent access road. Activities including extraction of pit-run sand and gravel, drilling and blasting, crushing, screening and stockpiling of processed aggregates are anticipated for this site.

Aggregate Source No. 3 (Figure 4) will be the primary sand and gravel borrow site for the construction of the all-season road connecting the Sand Lake airstrip with the Weatherhaven camp. Sand and gravel will be extracted from this site to be used for bulk embankment fill as well as for fine-grained surfacing material if the quality of the aggregate in the ground at the site is sufficient for this use. It is anticipated that pit-run granular material only will be extracted from this site without processing or stockpiling. Some selective extraction should be expected depending on the character of the material encountered in the excavation.

Bedrock Quarries

Quarried rock will be extracted from two locations within the project area. The first is located at Aggregate Source No.4 approximately 1 km north of the Weatherhaven camp site, within the future mining area (Figures 1 and 4). The geology of this site indicates that granite will be quarried with a very low acid generating potential. Rock will be extracted by drilling and blasting in the prominent hill side at this location. Run-of-quarry rock fill will be used to establish site roads and the pad for the new camp and crushed and processed aggregate will be used for final surfacing and grading at the Weatherhaven camp and on the road. In addition to Aggregate Source No.4, rock will be quarried at Aggregate Source No.2 for bulk rock fill as well as for the manufacture of processed aggregates used for the surfacing of the airstrip.

4.4. AIRSTRIP

4.4.1. SITE SELECTION

The proposed airstrip is located 12 km northeast of the existing High Lake camp, just west of the Kennarctic River. Four locations were identified as possible sites for the airstrip (Figure 3). Several factors were considered in selecting the location for the airstrip, including suitable topography, elevation, weather conditions, proximity to suitable aggregate material, distance to the camp, and ability to upgrade the airstrip to accommodate jet aircraft in the future. To assist in determining the optimal location of the airstrip, Wolfden arranged for the chief pilot of First Air, who currently flies the only Hercules STOL heavy cargo aircraft in the Canadian Arctic, to fly over the airstrip locations and review them from the perspective of aviation operations and safety. While all four airstrip locations would be capable of landing a Hercules aircraft, each would have different minimum requirements for landings and approach. Given this appraisal, the proposed airstrip was chosen for the following reasons:

- it is situated on relatively level, sandy terrain, above the Kennarctic River;
- there are fewer local topographic constraints than the other sites;
- it is suitable for landing large aircraft such as Hercules; and
- it is less expensive to construct than the other sites as a result of the sandy material on site, and level topography

Figure 2 shows the site layout for the airstrip. The airstrip runway surface will be 1450 m long and 45 m wide. In addition to the runway itself, there will be a 100 m by 100 m apron. Diesel and aviation fuel will be stored at the airstrip, and a small maintenance garage will be constructed there as well.

4.4.2. CONSTRUCTION SEQUENCE

Construction at the airstrip site will commence with the preparation of foundations and installation of fuel tanks. This work will be carried out concurrently with the clearing of an ice landing strip on Sand Lake suitable for landing Hercules aircraft. Once the fuel tanks and ice strip are commissioned, fuel will be flown in and transferred from the aircraft to the storage tanks.

Once sufficient fuel has been brought to the site, heavy equipment will be deployed to commence the full-scale construction of the airstrip. Construction of the airstrip is scheduled to begin in early spring, 2007. Construction activities will include cut/fill earth moving, rock quarrying and backfilling, rough grading, processing and stockpiling of crushed aggregates and final surfacing and fine grading of the airstrip.

4.4.3. WORKFORCE ACCOMMODATIONS

It is estimated that the efficient construction of the airstrip and access road will require a crew of about 45 persons. The construction force will be initially accommodated at the existing High Lake exploration camp. A temporary camp will be set up at Sand Lake during the initial construction of the airstrip and road. Eventually all personnel will be housed at the new Weatherhaven facility at High Lake.

Construction equipment and a 30-person construction camp (all currently at Ulu) will be transported from Ulu to Sand Lake. The camp will be connected to a portable generator and water/sewage treatment systems will be installed. Potable water will be drawn from Sand Lake. The sewage treatment plant will be a small self-contained Rotating Biological Contactor, or similar unit. Treated water from the plant will be discharged into the Kennarctic River. Heating oil for the initial construction activities will be transported in drums from Ulu.

4.4.4. POWER SUPPLY

During construction, the power supply at the airstrip will be provided by two diesel generators, each rated at 250 kW, currently available at Ulu. These two units will be transported to the site by winter trail in early 2007.

4.4.5. FUEL HANDLING AND STORAGE

Diesel and aviation fuel will be stored at the airstrip. The fuel storage area at Sand Lake will consist of one new 600,000 litre and five 55,000 litre single-wall tanks with fuel dispensers. The fuel storage area will be constructed within a bermed area designed to hold 110% of the volume of the largest single tank. A high-density polyethylene liner is installed within each tank farm to protect the ground from the impact of spilled substances through exfiltration. There is also a liner placed alongside the tank farm at the loading aprons to prevent any spillage from contaminating the ground or water supply.

4.4.6. AIRSTRIP OPERATION AND MAINTENANCE

The airstrip will operate year-round, with 2 flights/week estimated on average. De-icing will not be done at the airstrip, and air traffic would temporarily cease in poor weather conditions. Navigational aids will be limited to those required by Transport Canada for private airstrips. The airstrip and access road to the camp will be maintained for year-round use (graded and sanded as required).

4.5. ALL-SEASON ACCESS ROAD CONSTRUCTION

4.5.1. GENERAL DESIGN PARAMETERS

The all-season access road between the Weatherhaven camp and the airstrip will be approximately 12 km long and have a crest width of 6 m. The road will be a single lane two-way road with a graveled running surface and an embankment will be constructed of either blasted rock or borrowed granular fill. The horizontal and vertical alignments have been designed to minimize the volume of blasting/filling required to construct the road while maintaining safe sight lines and curve radii considering anticipated light traffic volume and low operating speed.

4.5.2. ROUTING

The selected route is shown on Figure 4, and was identified following studies in 2004 and 2005 of environmentally significant features, potential aggregate borrow deposits, and consideration of cost factors (length and ground conditions). For the first four kilometers along the route north of High Lake, the ground conditions consist of glacial till and bedrock. Continuing north to Sand Lake, the terrain is mostly granular glaciofluvial material along the remainder of the route. The proposed route was chosen to avoid most environmentally sensitive areas while ensuring that a safe roadway alignment and suitable foundation is generally feasible.

4.5.3. STREAM CROSSINGS

There are 3 stream crossings (designated AS13, AS14, AS15) along the proposed all-season road from High Lake to the airstrip, as shown on Figure 4. Stream crossings for the all-season road will be designed and constructed to avoid or mitigate potential impacts to aquatic ecosystems. Preliminary selection of crossing type and size has been conducted as part of environmental impact assessment and the results are summarized in the table below. The crossing size and type takes into account the quality of aquatic habitat and requirements for flood control during the life of the project.

Crossing No.	Catchment area (km^2)	100 Year storm flow (m^3/s)	Culvert size (mm)	Number of culverts
AS13	5.9	3.9	1200	3
AS14	49.3	33.1	20 m span bridge	
AS15	0.7	0.2	600	1

For stream crossings with important fisheries potential, such as the outlet of Granite Lake (AS14), a clear span bridge constructed entirely outside the high water level is proposed. This will effectively cross the watercourse with no appreciable impacts to aquatic environments.

For the other two stream crossings, corrugated steel culverts will be inset 10% into existing ground (where possible) and partially backfilled with gravel to restore a natural streambed. Appropriate erosion and sediment control measures (silt fence, flow checks in ditches, erosion control blankets and/or seeding and mulch on exposed earth slopes) will be utilized to minimize negative impacts to watercourses during construction and operation of the roadway. All work in water will be conducted during acceptable time periods to avoid negative impacts to fisheries.

4.5.4. EMBANKMENTS

The road will be constructed largely as a raised embankment over the existing soil and rock terrain. The embankment cross sections will be specific to the subgrade conditions with sections of the road constructed with granular fill directly over bedrock, rock cut-and-fill sections and sections of granular fill over native granular soils. Only small areas of rock cut and fill construction are anticipated for this stage of development – mostly in the first 2-3 km north from High Lake. Rock for the manufacture of crushed aggregate will be obtained from the two rock quarries shown on Figures 1, 2 and 4. Water will be the only means of dust suppression on the road and airstrip.

4.5.5. CONSTRUCTION SEQUENCE

The road embankment will be constructed of blasted rock obtained from adjacent rock cuts or from borrowed granular fill. To permit the passage of rock and gravel trucks, blasthole drills, excavators, bulldozers and support vehicles during the first stages of construction, a rudimentary trail will first be established within the future alignment of the permanent road. This trail will also serve as the transportation corridor for crews and equipment moving between the High Lake camp and the airstrip. The trail will be constructed primarily of granular fill or borrowed right-of-way cut material in the winter months. Only the minimum volume of fill will be used as required to fill in low spots and round over high points in the trail route to the extent needed to safely walk tracked equipment and travel slowly with all-wheel drive trucks.

As the construction of the all-season road progresses, the rock cuts will be excavated and the rock and gravel embankments will be built up to design profiles. The trail will be overbuilt by the all-season road leaving little enduring ground disturbance beyond the permanent road embankment. Once the final sub-base profile has been constructed the final surfacing course of gravel will be applied to the road and the profile fine-graded to the final design profile.

4.6. GRAYS BAY BARGE LANDING AND TEMPORARY STORAGE AREA

Some basic construction equipment and supplies will be sourced out of various suppliers throughout Canada, depending on cost and availability. This includes the Weatherhaven camp, two excavators, two vibratory soil compactors, two double-walled fuel tanks,

lubricants, trucks, a portable rock crusher, and additional air-track drill and miscellaneous building materials/equipment needed to undertake the camp and airstrip construction. It is proposed to barge these supplies from Hay River to Grays Bay during the summer of 2006.

Once the equipment and materials arrive at Grays Bay, they will be unloaded from the barges to a laydown area approximately 1 km southwest of the future dock. This site is shown as (A) on Figure 5. The slope from the shoreline to the top of the beach is gentle, having an 8% grade that is ideal for a laydown area, requiring only minor grading of the existing broken shale surface, and minimal disturbance of the existing area. An alternate area (B) has been identified for landing the barges that could be used in the event of unfavourable wind/sea conditions. The precise landing location will be determined by the crew, and will depend on the sea conditions at the time.

The barge would be floated into shore at high tide, grounded on the beach, and secured in position by mooring cables affixed to rock bolts or other anchor points. Loading ramps on the barge would be extended onto the shore. Once this is accomplished, the cargo would be moved onshore by front-end loader, and deposited at the temporary storage area identified on Figure 5. Once the cargo has been unloaded, the ramps will be raised and the barge pulled to deeper water by the tug and anchored offshore. This procedure would be repeated until the barges have been unloaded. The crew would continue to live on the tug/barge during the offloading, and no temporary camp will be required onshore.

4.7. WINTER TRAIL: ULU TO HIGH LAKE AND HIGH LAKE TO GRAYS BAY

Equipment and materials required for the proposed construction activities will be transported via winter trail to High Lake during early 2007 (Feb/March), from both Ulu and the Grays Bay storage area. The route crosses both Inuit Owned Land and Crown land (Figures 6a-g), and permits will be requested from both the KIA and DIAND to establish the winter trail. The total distance along the route between Ulu and Grays Bay is about 126 km, of which approximately 61 km is located on Inuit Owned Lands and 65 km is located on Crown land.

4.7.1. ESTABLISHING THE WINTER TRAIL

The winter trail is expected to be in service from late January through to the end of May 2007. The trail will be of a low-volume, all-terrain vehicle standard, suitable for rubber-tracked and/or high flotation type tired vehicles. The trail would be established starting at Ulu, working northward to High Lake. From there, it would continue north to the coast, ending at Grays Bay. The volume of freight and equipment to be moved between Ulu and High Lake as well as between Grays Bay and High Lake does not warrant the additional cost of bringing in highway tractor-trailer units equipped for arctic service, nor the added cost and effort in constructing a higher standard of winter roadway suitable for their use.

The trail will first be established with a rubber-tracked vehicle, which will make a couple of trips along the route, packing the snow sufficiently to support the transport of the equipment (about 3 inches of snow cover on average). Depending on the thickness of ice on the major river and lake crossings, the areas may be flooded to build up the ice thickness.

The full length of the trail would be in service from January to March 2007. It is estimated that up to 40 trips will be necessary to transport the equipment from Ulu to High Lake, and a similar number of trips between Grays Bay and High Lake may also be needed. A portion of the trail between High Lake and Sand Lake will be used to transport personnel, equipment and supplies from January 2007 until the spring break up, anticipated to be in late May of 2007, as part of the general construction sequence on the project.

Rubber-tracked muskeg tractors and low ground pressure road vehicles do not require sand for traction; therefore, no sand will be applied to the road. Freight will be loaded directly onto these vehicles, or it will be hauled using wheeled, tracked or skid-mounted trailers. Large pieces of construction equipment will most likely be fitted with skids for hauling or they may be driven under their own propulsion once the road is sufficiently hard. A list of the anticipated equipment for the project is included in Appendix A. Negotiations are currently ongoing with contractors and suppliers for the work, therefore this list is subject to revision once final arrangements have been made and contracts let for the construction.

5.0 EMPLOYMENT AND CONTRACTING OPPORTUNITIES

The anticipated workforce during the transport and construction activities planned for 2006 and 2007 has been estimated as follows:

ACTIVITY	NO. OF PERSONS
Transport of equipment from Grays Bay	8-10
Construct fuel storage site and ice strip	18-20
Airstrip, roadway and site preparation crew	40-50
Erect Weatherhaven camp and ancillary facilities	20-40
Environmental and engineering	20- 40
Total estimated workforce	127-153

The sequencing of these activities has been planned so that there is adequate accommodation available to house the crews at peak construction activity, and to achieve efficiency. In addition to the construction crews, it is estimated that there will be an exploration crew of about 50 people in the area during the peak period of exploration activity.

6.0 ASSESSMENT OF POTENTIAL ADVERSE EFFECTS AND PROPOSED MITIGATION

Based on the activities proposed for the High Lake relicensing program, and as described in the accompanying permit application, an assessment of potential effects from the project activities was completed. Table 1 summarizes the potential environmental effects and the mitigation measures to be implemented on-site.

Table 1. Summary of Potential Environmental Effects and Proposed Mitigation Measures

Project Component/Activity	Linkage to Potential Effect	Potential Environmental Effect	Proposed Mitigation Measure	Notes
GRAYS BAY **Barge Unloading Procedure**	• Surface disturbance at landing site	• Surface disturbance causing direct loss of vegetation cover; damage to surface vegetation through compaction on un-stripped surfaces • Potential loss of Nunavut Listed plant species ranked *as Sensitive* and *May be at Risk*	• Minimal site preparation required on gently sloping beach shale • Use of sparsely vegetated terrain for unloading and storage • Surveys for listed plant species on proposed footprint (July 2006) prior to barge unloading. Development of mitigation plans if necessary	• Nunavut Listed Plant species ranked as *Sensitive* and *May be at Risk* have been found in the vicinity of the unloading site. Surveys in July 2006 will confirm whether these species are also found on laydown area footprint. If population losses are predicted to be more than 5% for the *May be at risk* species, or the entire population for *Sensitive* species, then mitigation will be applied (i.e. avoidance, use of buffer materials, seed collection)
		• Disturbance, displacement or loss of archaeological sites or specimens contained in three recorded sites: MkNu-4; MkNu-5; MkNu-6	• Detailed mapping and systematic data recovery of all sites and features within the proposed unloading area to occur in July 2006, prior to barge unloading	
	• Discharge to land and marine environment from barges while moored at site	• Marine water quality changes due to accidental spills, increased shoreline erosion while beaching barges, and from potential waste discharge from barges while moored	• Ensure barge operators follow proper protocols for dealing with waste streams (sewage) while moored • Minimize beaching activities during periods of rough water to reduce disturbance of shoreline sediments	
	• Disturbance and resuspension of shoreline sediments during unloading operations	• Contamination of marine habitat, fish and/or marine mammals	• Spill contingency plan that includes both land and marine response equipment in place to ensure safe fuel handling procedures and contain/ clean up any spills	
	• Disturbance of land and marine habitat in event of accidental spill/mishap	• None: very shallow nearshore waters contain only small, mobile fauna (amphipods) because of the presence of landfast ice in winter	• None required	

Table 1. Summary of Potential Environmental Effects and Proposed Mitigation Measures				
Project Component/Activity	**Linkage to Potential Effect**	**Potential Environmental Effect**	**Proposed Mitigation Measure**	**Notes**
	• Direct physical damage to very shallow nearshore habitat and biota • Noise associated with barge landing procedures	• Disturbance to small number of marine mammals	• Minimize noise	• Marine mammals likely will not be numerous, noise levels not high, and duration short
Temporary storage of equipment	• Surface disturbance at storage site • Disturbance of land and marine habitat in event of accidental spill/mishap	• Surface disturbance causing direct loss of vegetation cover; damage to surface vegetation through compaction on un-stripped surfaces • Potential loss of Nunavut Listed plant species ranked *as Sensitive* and *May be at Risk* • Disturbance of archaeological features and specimens • Marine water quality changes due to accidental spills and runoff from the storage area	• Area needed for storage will be minimal required for safe storage • See comments under Barge Unloading • See comment under Barge Unloading • Proper site preparation that includes grading to ensure containment of all runoff from the storage site and minimal drainage to the marine environment	• See note above regarding Nunavut Listed Plant Species
WINTER TRAIL **Establish winter trail between Ulu and GRAYS Bay**	• Surface disturbance	• Damage to or loss of shrubs and vegetation tussocks exposed above snow • Compaction of organic layer and soils resulting in changes to active layer depths and resulting plant growth and cover, particularly in hummocky areas, on ridges with	• Ensure that any future winter trail route follows a common alignment to minimize the number of trails and associated impacts on vegetation and substrates, and potential archaeological resources • Minimize surface disturbance to	

Table 1. Summary of Potential Environmental Effects and Proposed Mitigation Measures

Project Component/Activity	Linkage to Potential Effect	Potential Environmental Effect	Proposed Mitigation Measure	Notes
		coarse soils and on finer sediments on lower slopes and basins • Exposure of soils resulting in changes to surface albedo, increasing depth of active layer, and consequent changes in plant growth and cove	extent possible • Upon closure, in areas of previously continuous vegetation cover, reseed damaged exposed areas of sediment using a native seed mix	
		• Disturbance of archaeological features and specimens	• Investigation for archaeological resources along proposed road alignment; consideration of road relocation to avoid any sites found • Detailed mapping and systematic data recovery of any sites that cannot be avoided	
	• Water extraction for road construction	• Drawdown in winter may result in lowered under-ice dissolved oxygen levels and exposure of critical spawning habitat.	• Water extraction not an issue given the minimal amount of water that is expected to be required for this standard of winter trail (see note)	• The proposed winter trail will require minimal water extraction for the standard of trail suitable for LGP vehicles. The trail would be in use for about 1 month, during the period from January – March
Road Operation and Maintenance	• Road embankments create physical barrier to movements of wildlife	• Impede caribou and muskox movements through the area, both physically and behaviourally	• Ensure that snow berms do not occur or build up along trail	
	• Vehicle traffic	• Vehicle traffic can disturb and impede wildlife movements through the area	• Give wildlife right-of-way; short duration of vehicle traffic will minimize disturbance to wildlife	
	• Accidental spills resulting in release of contaminants (fuel etc.)	• Surface water quality changes due to contaminants (e.g. TDS, TSS, hydrocarbons) in water	• Spill contingency plan for the establishment and operation of the winter trail including the	

Table 1. Summary of Potential Environmental Effects and Proposed Mitigation Measures				
Project Component/Activity	**Linkage to Potential Effect**	**Potential Environmental Effect**	**Proposed Mitigation Measure**	**Notes**
	to the environment		provision of spill kits on all vehicles	
SAND LAKE **Construction of airstrip and ancillary facilities**	• Surface disturbance	• Surface disturbance causing direct loss of vegetation cover; loss of high ground lichen vegetation associated with eskers • Potential for dust deposition to affect health of sensitive vegetation species (e.g. lichen)	• Upon closure, in areas of previously continuous vegetation cover, reseed damaged exposed areas of sediment using a native seed mix • Use dust control measures if dust builds up on vegetation	
		• Disturbance of archaeological features and specimens	• Examination for archaeological resources at proposed airstrip • Consideration of options for minor relocation to avoid any sites found • Detailed mapping and systematic data recovery for any sites that cannot be avoided	• 2005 preliminary ground survey recorded two sites within/near proposed airstrip; airstrip in high potential zone • Specific airstrip footprint will be assessed in 2006
	• Alteration of drainage patterns • Introduction of nutrients due to blast residue and associated runoff from the site • Potential metal release from acid generating construction aggregate	• Surface water quality changes due to contaminants (e.g. TDS, TS, nutrients, hydrocarbons) in water	• Use of proper construction and operation methods to minimize site runoff to sensitive aquatic systems • Diversion of runoff from site to sedimentation ponds to minimize increased sediment loads to environment • Diversion of runoff from site to avoid direct discharge to sensitive fish bearing waters • Avoid use of acid generating material (PAG) • Proper explosives management to minimize the amount of undetonated explosives and	• Need to assess lakes in this area to determine absence/presence of fish, and ability to accept diverted runoff in smaller lakes

Table 1. Summary of Potential Environmental Effects and Proposed Mitigation Measures				
Project Component/Activity	**Linkage to Potential Effect**	**Potential Environmental Effect**	**Proposed Mitigation Measure**	**Notes**
			residue	
	• Noise disturbance during construction phase	• Disturbance to nesting birds during construction phase	• Conduct land clearing for site infrastructure (e.g. road and site preparations as early as possible (May/June) to discourage bird breeding activity in the area • Prevent upland birds from nesting on man-made structures; if nest is established and eggs present, avoid the nest as much as possible • Vehicles will be restricted to designated roads and work sites (no recreational use)	• Ideally, land clearing and blasting activities would avoid bird nesting period (June 1 – August 1); however this is not practical given short construction season
ALL-SEASON ACCESS ROAD **Road Construction**	• Surface disturbance	• Surface disturbance causing direct loss of vegetation cover. • Loss of high ground lichen vegetation association associated with eskers	• See comments for airstrip construction regarding dust control and mitigation upon closure	
		• Disturbance of archaeological features and specimens	• Examination for archaeological resources along proposed road alignment • Consideration of options for road relocation to avoid any sites found • Detailed mapping and systematic data recovery for any sites that cannot be avoided	• 2005 preliminary ground examination recorded three sites within/near proposed road; specific road alignment requires detailed assessment – high archaeological potential
	• Noise; increased activity in area	• Impede wildlife movements through the area; • Disturbance to nesting birds	• Give animals the right-of-way • Limit use of off-road vehicles to construction site/roadway • Implement wildlife awareness and sensitivity training for on-site	

Table 1. Summary of Potential Environmental Effects and Proposed Mitigation Measures				
Project Component/Activity	**Linkage to Potential Effect**	**Potential Environmental Effect**	**Proposed Mitigation Measure**	**Notes**
			personnel	
	• Stream Crossings	• Disturbance to fish habitat via stream crossings	• Use of culverts and sediment mitigation measures during construction will reduce potential impact on fish and fish habitat	
	• Increased runoff from road during construction and operation • Water quality degradation due to increased sediment loads, nutrients from blasting, use of PAG rock and spills	• Surface water quality changes due to residual nutrients from blasting, runoff during construction, and from spills (e.g. TDS, TSS, nutrients, hydrocarbons, metals)	• Proper construction methods along route to avoid releases of TSS in the aquatic environment • Proper drainage control and collection during construction and operations • Avoid use of PAG • Proper explosives management to minimize the amount of undetonated explosives and residue	
	• Surface contamination due to accidental fuel spills	• Potential for fuel spills which result in soils sterility and subsequently plant death.	• Develop and Implement Spill Contingency Plan for all aspects of project construction and operation	
Road Operation and Maintenance	• Noise and disturbance, and possibility of vehicle-wildlife collisions	• Potential disturbance and injury/mortality to wildlife	• Reduce speed to safe level especially when wildlife known to be in area; • Establish a communication system to enable all workers to be notified when wildlife are in the area; implement traffic activity controls if needed	
	• Dust deposition	• Potential for dust deposition to affect health of sensitive vegetation species (e.g. lichen) • Vegetation quality adjacent to roads	• Implement dust suppression methods during snow/ice-free seasons (spray with water)	

Table 1. Summary of Potential Environmental Effects and Proposed Mitigation Measures				
Project Component/Activity	**Linkage to Potential Effect**	**Potential Environmental Effect**	**Proposed Mitigation Measure**	**Notes**
		affect wildlife forage		
HIGH LAKE **Construct Weatherhaven camp**	• Surface disturbance	• Surface disturbance causing direct loss of vegetation cover. • Damage to surface vegetation due to compaction.	• Upon closure of camp, in areas of previously continuous vegetation cover (e.g. heath tundra and tussock sedge); reseed damaged exposed areas of sediment using a native seed mix.	
		• Disturbance of archaeological features and specimens	• Assessment of archaeological potential of footprint for proposed camp location, followed by examination for archaeological resources, if considered necessary	• The High Lake area has been subjected to detailed pedestrian survey with negative results and low potential for archaeological resources assessed; assessment of increased footprint will be to determine if any areas of good potential are included in the increased footprint; significant archaeological conflicts are not expected on west side of High Lake, away from the Kennarctic River
	• Surface water quality changes due to discharge of sewage and contaminated runoff from the site (blast residue, TSS, metals from AG rock, hydrocarbons)	• Surface water quality changes (e.g. TDS, TSS, nutrients, hydrocarbons, metals)	• Proper construction methods to avoid releases of TSS and other contaminants into aquatic environment • Proper drainage control and collection during construction and operation • Minimize releases to fish bearing water – direct site drainage to L20 and High Lake (neither supports fish) • Proper management of explosives to minimize the amount of undetonated explosives and residue	
Camp Operations: **Withdrawal of water for camp from L22**	• Water withdrawal	• Entrainment of fish and other aquatic life • Drawdown in winter may result in lowered under-ice dissolved	• Use of screens over intake pipe to prevent entrainment • This is not expected to be an issue, based on the amount of	

Table 1. Summary of Potential Environmental Effects and Proposed Mitigation Measures				
Project Component/Activity	**Linkage to Potential Effect**	**Potential Environmental Effect**	**Proposed Mitigation Measure**	**Notes**
		oxygen levels and exposure of critical spawning habitat	water usage relative to lake volume	
Discharge of treated effluent to L20	• Effluent discharge to aquatic environment	• Water quality changes to surface water from discharge	• L20 is not fish habitat nor supports fish habitat downstream, so discharge of treated effluent should not cause an impact.	• Field studies carried out in 2004 and 2005 indicated that L20 does not support fish
Solid waste disposal	• Human activity and garbage will attract wildlife (bears, fox, wolverine)	• Problems with wildlife will occur if garbage is improperly handled, possibly resulting in loss of individuals (wildlife and/or human)	• Establish a waste management plan; incinerate combustible waste daily in a fenced enclosure. • Burn all combustible waste, including all kitchen waste, oil products. Limit landfill use to non-combustible, non-recyclable solid waste only • Retain bear-wise camp facilities • Provide bear awareness training to all personnel	
QUARRYING **Construct and Operate Rock and Gravel quarries**	• Surface disturbance; removal of habitat	• Direct loss of vegetation cover in vegetation association with ground lichen cover • Alteration of substrates and topography for vegetation growth. • Compaction and damage to surface vegetation.	• Unavoidable; no mitigation proposed	
	• Dust from extraction and crushing	• Potential impacts from dust to health of sensitive vegetation species (lichen).		

Table 1. Summary of Potential Environmental Effects and Proposed Mitigation Measures				
Project Component/Activity	**Linkage to Potential Effect**	**Potential Environmental Effect**	**Proposed Mitigation Measure**	**Notes**
		• Disturbance of archaeological features and specimens	• Assessment for potential and examination of archaeological resources of quarry locations as judged necessary • Consideration for pit relocation/design to avoid any sites • Detailed mapping and systematic data recovery for any sites that cannot be avoided	
	• Runoff of sediment to surface waters; runoff from blast residue	• Surface water quality changes due to runoff and from spills	• Ensure proper drainage control from quarry pit with sediment control measures • Minimize drainage to fish bearing waters	
Explosives Storage	• Surface disturbance/removal of habitat	• Direct loss of vegetation cover	• Upon closure, in areas of previously continuous vegetation cover (e.g. heath tundra and tussock sedge), reseed damaged exposed areas of sediment using a native seed mix	
	• Potential release of ammonium nitrate due to spills during handling	• Surface water quality changes from spills	• Install barriers to collect any spillage during handing and transfer of explosives • Avoid any direct drainage to fish bearing waters (Kennarctic River)	
Increased Economic and Employment Opportunities	• Effects on communities	• Rotational work could affect families and communities	• Establish a suitable rotational schedule in consultation with the communities (e.g. 2-week rotation)	
	• Effects on incomes	• Local Inuit do not take adequate advantage of new job opportunities	• Notify communities of potential jobs ahead of time (2 months	

Table 1. Summary of Potential Environmental Effects and Proposed Mitigation Measures				
Project Component/Activity	**Linkage to Potential Effect**	**Potential Environmental Effect**	**Proposed Mitigation Measure**	**Notes**
			notice) • Prioritize the use of Inuit contractors and the hiring of suitably qualified Inuit • Make family assistance services available if counseling services are required • Provide pre-employment instructions regarding use of drug and alcohol (not permitted); hunting/use of vehicles for non-work related purposes; sexual harassment etc	

7.0 SITE ABANDONMENT AND RESTORATION

The Abandonment and Restoration activities described in the following subsections are associated only with the new authorizations being applied for. These activities augment the previously approved *High Lake Abandonment and Restoration Plan*. prepared by Wolfden on June 23rd, 2005 and approved by the Nunavut Water Board. The 2005 Plan describes final and seasonal closure activities for the company's mineral exploration activities and existing facilities at High Lake. The activities described herein are to be undertaken should exploration cease and mine development not proceed. If the High Lake Project proceeds through advanced exploration and into full construction of a producing mine, the facilities described herein will be incorporated into the overall mine plans. They will then become subject to the terms and conditions of the site's Abandonment and Restoration plan.

7.1. REVEGETATION PLAN

The end land use for all disturbed areas will be productive wildlife habitat. The abandonment and restoration activities have been planned to facilitate this end use as quickly as is reasonably possible, considering climatic and environmental conditions in the region. With this in mind the following revegetation plan will be implemented at the site, once the exploration project is finished, and assuming no further development work.

Upon final closure, the impacts to vegetation and substrates will be assessed (visual monitoring survey for eroded areas). Areas of minor damage to vegetation and small areas of exposed substrates will be left to revegetate naturally. Areas with rocky substrates that are sparsely vegetated to start with will also be left to revegetate naturally. Previously vegetated areas on fine substrates (fine gravel, sand and smaller particle sizes) prone to wind erosion, water erosion or thermokarst will be actively revegetated using seed and fertilizer.

Vegetation associations that provide a relatively continuous ground cover on finer substrates include:

- Heath tundra and low shrub associations, which develop on glacial till;
- Tussock sedge and low shrub associations that develop on organic substrates;
- Heath tundra, tussock sedge and low shrub associations, which develop on fine sediment of marine origin.

Vegetation associations that provide less than continuous cover but help stabilize fine substrates include:

- Esker / outwash lichen heath on relatively level glacio-fluvial deposits
- Raised beach lichen heath

The need for reseeding would be determined after the disturbance. Minor rutting in vegetated areas will be left to revegetate naturally as long as there is no risk of erosion rills and gullies forming. Larger areas will be treated with seed and fertilizer to minimize potential for soil erosion.

7.2. HIGH LAKE WEATHERHAVEN CAMP - ABANDONMENT AND RESTORATION

7.2.1. CAMP

Upon final closure, the Weatherhaven camp area will be cleared of foreign objects and the granular foundation graded to blend in smoothly with the natural contours of the surrounding ground. Final grading will provide for positive drainage away from the developed area.

7.2.2. POWER SUPPLY AND DISTRIBUTION SYSTEM

The generators will be drained of fuel and lubricants, packaged and shipped off site for use elsewhere. The soil in the vicinity of the generating plant will be visually inspected for fuel impacts. Where hydrocarbon impact is identified, affected soil will be removed for treatment and disposal if necessary.

7.2.3. WATER SUPPLY AND WASTE WATER SYSTEMS

The water intake pumps, pipelines and the electrical service equipment installed at Lake L22 as well as overland pipelines and pumphouses will be dismantled and removed from the site. It is anticipated that pipelines will be laid over the ground with blocking to provide support. As such, the disturbance to the underlying ground should be minimal. Where there is identifiable disturbance to the ground or vegetation, the pipeline route will be restored to as closely as practicable to pre-existing conditions.

The treated domestic wastewater will be discharged into Lake L20, which is a non-fish bearing water body. Enduring impact to the water quality is not anticipated due to the planned level of wastewater treatment. The overland pipeline will be installed above ground, on blocking with a minimum of disturbance to the underlying ground and vegetation. The in-water outfall will be laid directly on the lake bottom. At closure, the outfall extending into the lake will be removed and the pipeline dismantled and all pipeline materials will be shipped off-site. Any disturbance to the vegetation and ground will be restored in such a way as to encourage the efficient re-growth of pre-existing plant communities. No drainage diversions are contemplated in the construction; however, any disturbance to the soil that results in a drainage diversion will be restored to provide as near as practical drainage condition to the pre-exiting drainage routes. Exposed soil will be stabilized against erosion by seeding. Waste water addition to the lake will cease and no additional closure activities are required for this item.

7.2.4. SOLID WASTE DISPOSAL

Upon dismantling of the incinerator, salvageable parts will be packaged and removed from the site. The steel in the incinerator barrel will be disposed of in the onsite landfill.

The landfill site will be decommissioned and permanently capped to minimize infiltration of precipitation and generation of leachate. The thickness of the final cap will be determined by the minimum thickness required to ensure that the active thaw zone doe not extend into the landfill.

7.2.5. FUEL STORAGE

Upon final closure, fuel remaining in the diesel tanks will be drained. The tanks will subsequently be cleaned and purged of hydrocarbon vapour. If the tanks can be sold, they will be removed from the site. If not, the tanks will be collapsed and the steel disposed of in the onsite landfill. Visual inspection and/or a subsurface investigation will be carried out at the tank farm areas following tank removal. Areas of hydrocarbon impact will be delineated. Soil found to have hydrocarbon concentrations above applicable remediation criteria will be excavated and disposed of in the onsite landfill or suitably remediated by some other means. The secondary containment liner will be excavated, cut up and disposed of in the site landfill.

7.2.6. EXPLOSIVES MAGAZINE

Upon final closure all remaining explosives, detonators and blasting agents will be removed from site. The structures will be salvaged and removed from site or cut up and disposed of in the onsite landfill. The area will be cleared of foreign objects and compacted soils will be scarified to promote the growth of indigenous vegetation.

7.2.7. AGGREGATE SOURCES

The aggregate sources developed to construct the Weatherhaven camp, as shown on Figures 1 and 4, will be reclaimed in accordance with applicable regulations upon final closure. In general, reclamation will have the objective of providing a site stabilized against erosion with controlled drainage. Operation of the sites will emphasize good housekeeping and the orderly removal and efficient use of aggregate products thereby facilitating an orderly closure and restoration of the sites.

It is anticipated that working faces in the gravel pits will be regraded to a maximum slope of 3 horizontal to 1 vertical. Pit floors will be graded where practical to provide positive drainage outward from within the pit area. Disturbed areas of granular soils will be stabilized against erosion by the application of a mixture of seed representing plant species native to the area. Debris, garbage, wire, and other foreign objects will be removed from the disturbed areas of the sites upon completion of closure. Remnant processed aggregates as well as waste products such as oversized rock will be placed along the toe of the quarry faces to reduce the vertical height of the rock face on closure. Considering the magnitude of development and pre-existing topography at the quarry sites, it is not anticipated that quarry faces on closure would

represent a significant departure from the naturally occurring nearby topographic relief.

7.3. AIRSTRIP AND SURROUNDING AREA - ABANDONMENT AND RESTORATION

7.3.1. AIRSTRIP

The Sand Lake airstrip is to be a gravel strip measuring approximately 1450 metres in length and 45 metres in width. The surface will be scarified and graded to stable conditions using pre-existing natural drainage patterns wherever possible. The related navigational aids will be removed and, prior to vacating the site, the airstrip will be formally closed. The airport regulatory authorities will be notified of these plans.

7.3.2. CONSTRUCTION CAMP

The maintenance garage and temporary construction camp will be dismantled and removed for use at another site or sale. If not salvaged or sold, the structures will be buried in the landfill. Upon final closure, foreign objects and debris will be removed from the site and the granular foundation graded to blend in smoothly with the natural contours and to provide positive drainage from the area.

7.3.3. POWER SUPPLY

The generators will be drained of fuel and lubricants, packaged and shipped off site for use elsewhere.

7.3.4. FUEL HANDLING AND STORAGE

Upon final closure, fuel remaining in the diesel fuel tanks will be drained and transferred to drums for temporary storage. Fuel inventory will be managed so as to have a minimal quantity on-site at the cessation of activities. The small quantity of fuel remaining at the completion of site restoration work will be flown off site.

Once emptied, the interior of the tanks will be cleaned of product and purged of hydrocarbon vapour. If the tanks can be sold, they will be removed from the site. If not, the tanks will be pierced and collapsed and the steel disposed of in the site landfill. A subsurface investigation will be carried out at the tank farm areas following tank removal. Areas of hydrocarbon impact, if present will be delineated. Soil found to have hydrocarbon concentrations above applicable remediation criteria will be excavated and disposed of in the onsite landfill or suitably remediated by some other means. The secondary containment liner will be excavated, cut up and disposed of in the onsite landfill. Berms will be flattened and final grading at the site will blend into the surrounding ground contours and promote positive drainage from the pad area. Seed will be applied to the area to facilitate vegetation growth to stabilize the site against erosion.

7.3.5. ALL-SEASON ACCESS ROAD

Upon final closure the 12 km road constructed between the airstrip and the High Lake camp will be decommissioned. The clear span bridge and culverts will be removed. Appropriate erosion and sediment control measures will be utilized during the removal of these structures. The road will be restored to stable conditions using pre-existing natural drainage patterns wherever practical. Work in water will be conducted during acceptable time period to mitigate impacts to fisheries. Damaged vegetation or exposed areas of sediment will be restored to as close as practical to pre-development conditions using a native seed mix.

7.3.6. AGGREGATE SOURCES

The aggregate sources developed to construct the all-season road, as shown on Figures 2 and 4, will be reclaimed in accordance with applicable regulations upon final closure. In general, reclamation will have the objective of providing a site stabilized against erosion with controlled drainage. Operation of the sites will emphasize good housekeeping and the orderly removal and efficient use of aggregate products thereby facilitating an orderly closure and restoration of the sites.

It is anticipated that working faces in the gravel pits will be regraded to a maximum slope of 3 horizontal to 1 vertical. Pit floors will be graded where practical to provide positive drainage outward from within the pit area. Disturbed areas of granular soils will be stabilized against erosion by the application of a mixture of seed representing plant species native to the area. Debris, garbage, wire, and other foreign objects will be removed from the disturbed areas of the sites upon completion of closure. Remnant processed aggregates as well as waste products such as oversized rock will be placed along the toe of the quarry faces to reduce the vertical height of the rock face on closure. Considering the magnitude of development and pre-existing topography at the quarry sites, it is not anticipated that quarry faces on closure would represent a significant departure from the naturally occurring nearby topographic relief.

7.4. GRAYS BAY BARGE LANDING AND TEMPORARY STORAGE AREA ABANDONMENT AND RESTORATION

The Grays Bay barge landing site will not be a permanent storage facility. Material and equipment will only be stored there temporarily while awaiting transfer to the High Lake site. No significant preparation of the site is contemplated. Loose materials will be containerized and heavy equipment will be parked on the existing rocky ground without significant grading work. The full consignment of supplies will be transferred to High Lake on an annual basis.

Following the removal of the equipment and supplies temporarily stored at Grays Bay the area will be inspected for evidence of soil impact due to fuel and/or lubricant spills. Appropriate remediation activities will be undertaken if required.

Good housekeeping practices will be implemented and maintained during operations to keep the area clean of foreign objects, rubbish and debris. A final inspection of the area will be conducted and items remaining at that time from operations will be removed from the Grays Bay barge landing and temporary storage area. Areas of disturbed ground will be restored to a state as close as practical to pre-existing conditions.

7.5. WINTER TRAIL ABANDONMENT AND RESTORATION

Upon final closure the winter trails will be cleared of foreign objects. If necessary, in areas of previously continuous vegetation cover along the winter trail damaged exposed areas of sediment will be reseeded using a native seed mix.

APPENDIX A
EQUIPMENT LIST

APPENDIX A

Equipment to be transported via winter trail from Ulu to High Lake:

- Caterpillar Grader 120G (1 unit)
- Caterpillar Backhoe 311 (Tracked)
- Foremost Commander
- Water Truck
- Caterpillar Dozer D8N – (tracked)
- Caterpillar Wheel Loader 966D
- Caterpillar 769 Rock Truck (2 units)
- Commander Trailer
- Six 55,000 litre single-wall fuel tanks
- Cummins Generator –800 kW
- Detroit Generator – 250 kW (2 units)
- Gilson Cement Mixer
- Two Fold-a-way buildings (garage)
- 30-person construction camp (7 trailers)
- Tractor-Flatbed Combo

Equipment and supplies to be transported via winter trail from Grays Bay to High Lake:

- Power generation Plant for Weatherhaven camp
- Two Caterpillar 330DL or 345DL hydraulic excavators
- Two pick up trucks (Ford F 250)
- Caterpillar Soil Compactor
- Caterpillar Telehandler
- Two 40 ft. portable bridge kits
- Corrugated Steel Pipe Culvert materials
- 600,000 litre diesel tank
- 3,000 litre double walled fuel tank
- Geomembrane materials for secondary containment liners at fuel storage areas
- Two premanufactured, containerized sewage treatment plants (for Sand Lake and Weatherhaven camps)
- Two premanufactured, containerized potable water treatment plants (for Sand Lake and Weatherhaven camps)
- Fuel Truck (3,000 gal)
- Sewage Sludge transportation truck

- Portable rock crushing plant (Metso)
- Two Tamrock Ranger 7002 hydraulic crawler blasthole drills with spare parts and drill steel and bits.
- Weatherhaven camp materials (containerized)
- Four portable, diesel powered lighting plants
- Miscellaneous building materials (wood, steel, cement)
- Miscellaneous spare equipment and machine parts, tools and lubricants
- Miscellaneous small equipment (pumps, portable generators, portable air compressors, etc.)

Note: The above list of construction plant and supplies is provided to illustrate the magnitude of the project requirements. The actual volume of freight will be subject to revision in response to detailed project requirements, based on the final configuration of the works and the availability and procurement of construction plant and building materials when shipping commences.

Appendix B
Regulatory Approvals for Relicensing Program

WOLFDEN Resources Inc.

Activity	Regulator	Type of Permit
Barge equipment/supplies to Grays Bay from Hay River	Transport Canada	Arctic Waters Pollution Prevention Certificate obtained annually by carrier
Grays Bay storage – laydown of equipment and temporary storage until winter 06/07	DIAND NIRB	Land Use Permit – Class A Screening
Establish winter trail from Ulu to High Lake, and High Lake to Grays Bay in January/February 2007	KIA DIAND NIRB	IOL Land Use License Class A Land Use Permit Screening
Construct Airstrip at Sand Lake Construct new Weatherhaven Camp near High Lake Construct 12 km all-season road between camp and airstrip (all the above activities scheduled in 2007)	KIA NIRB	Commercial Lease Screening
All-season road construction	DIAND	Land Use Permit for portion of road that crosses Crown land
Road construction, including installation of culverts and bridge at specific creek crossings	Transport Canada – Navigable Waters	Approval of Works
Gravel extraction and crushing for airstrip, camp and road construction	KIA	Quarry Concession Permit
Quarrying for construction	DIAND	Quarrying permit for quarry located on Crown land
Ongoing exploration; infrastructure improvements	NWB	Water License that will encompass all related activities
Existing High Lake exploration camp	DIAND	Renewal of existing lease for exploration camp
Explosive storage, handling and detonator storage	EMR - Canada Mine Health and Safety/Workers Compensation Board	Magazine Permit Permit to store detonators

FIGURES

506000
506500
7474000
7473500
7473000
N
To Sand Lake Airstrip
High Lake
12km Access Road
Aggregate Source #4
Existing Camp
Core Shack Lake
L22
Potable Water Supply
L20
Water
Supply
Effluent
Treated
CO-29
Weatherhaven Campsite
L23
L24
Contact Lake
Incinerator
Landfill
350
300
DRAFT
Work in progress

Legend

Facilities
- Proposed Weatherhaven Camp
- Existing Camp
- Rock Quarry
- Other Facility

Roadways
- Approximate Location of Road

Inuit Owned Lands
- Subsurface Rights
- Surface Rights

Elevation Contours
- Index Elevation (50m)
- Intermediate Elevation (10m)
- Index Depression (50m)
- Intermediate Depression (10m)

Hydrology
- Waterbody
- Watercourse

0 25 50 100 150 200 m

1:5,000

WOLFDEN Resources Inc.

Projection: UTM Zone 12N **Datum: NAD 83**

Prepared by: EM **Reviewed by: KW**

Date: April 07, 2006 **Revision 1**

Data Sources

National Topographic Data Base (NTDB) complied by Government of Canada, Natural Resources Canada (NRCan), at 1: 50,000 scale.

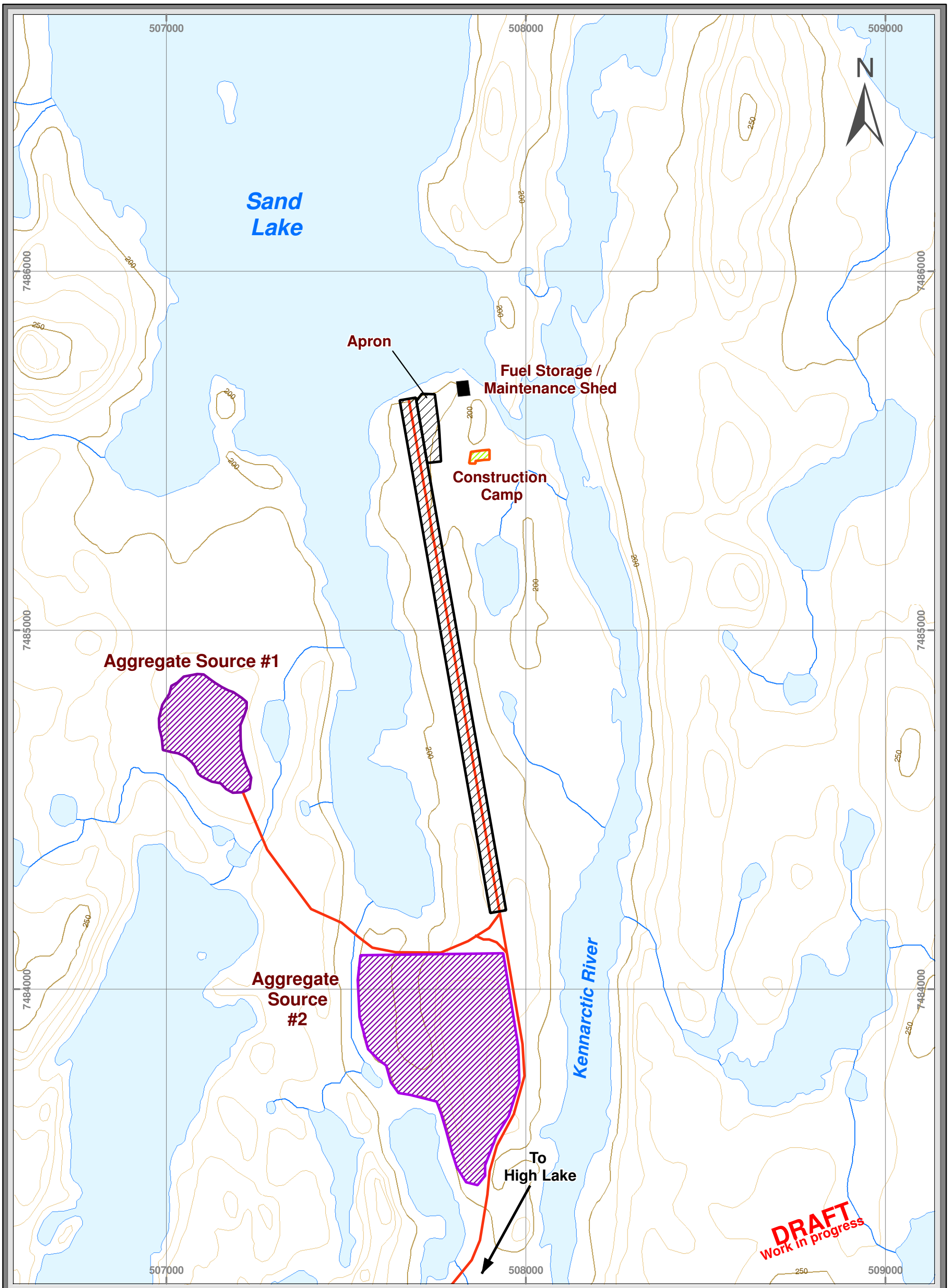
Project Study Areas and Existing/Proposed infrastructure data complied by Wolfden Resources Inc. and Gartner Lee Ltd.

Proposed Weatherhaven Camp and Ancillary Facilities

Gartner Lee

Figure: 1

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\P51002_Fig1_HL_Camp_29cMar2006.mxd



Legend

Facilities
- Construction Camp
- Airstrip/Apron
- Rock Quarry/Borrow Pit
- Other Facility

Roadways
- Approximate Location of Roads

Elevation Contours
- Index Elevation (50m)
- Intermediate Elevation (10m)
- Index Depression (50m)
- Intermediate Depression (10m)

Hydrology
- Waterbody
- Watercourse

0 50 100 200 300 400 500 m

1:10,000

Projection: UTM Zone 12N **Datum:** NAD 83

Prepared by: EM **Reviewed by:** KW

Date: April 07, 2006 **Revision:** 1

Data Sources

National Topographic Data Base (NTDB) complied by Government of Canada, Natural Resources Canada (NRCan), at 1: 50,000 scale.

Project Study Areas and Existing/Proposed infrastructure data complied by Wolfden Resources Inc. and Gartner Lee Ltd.

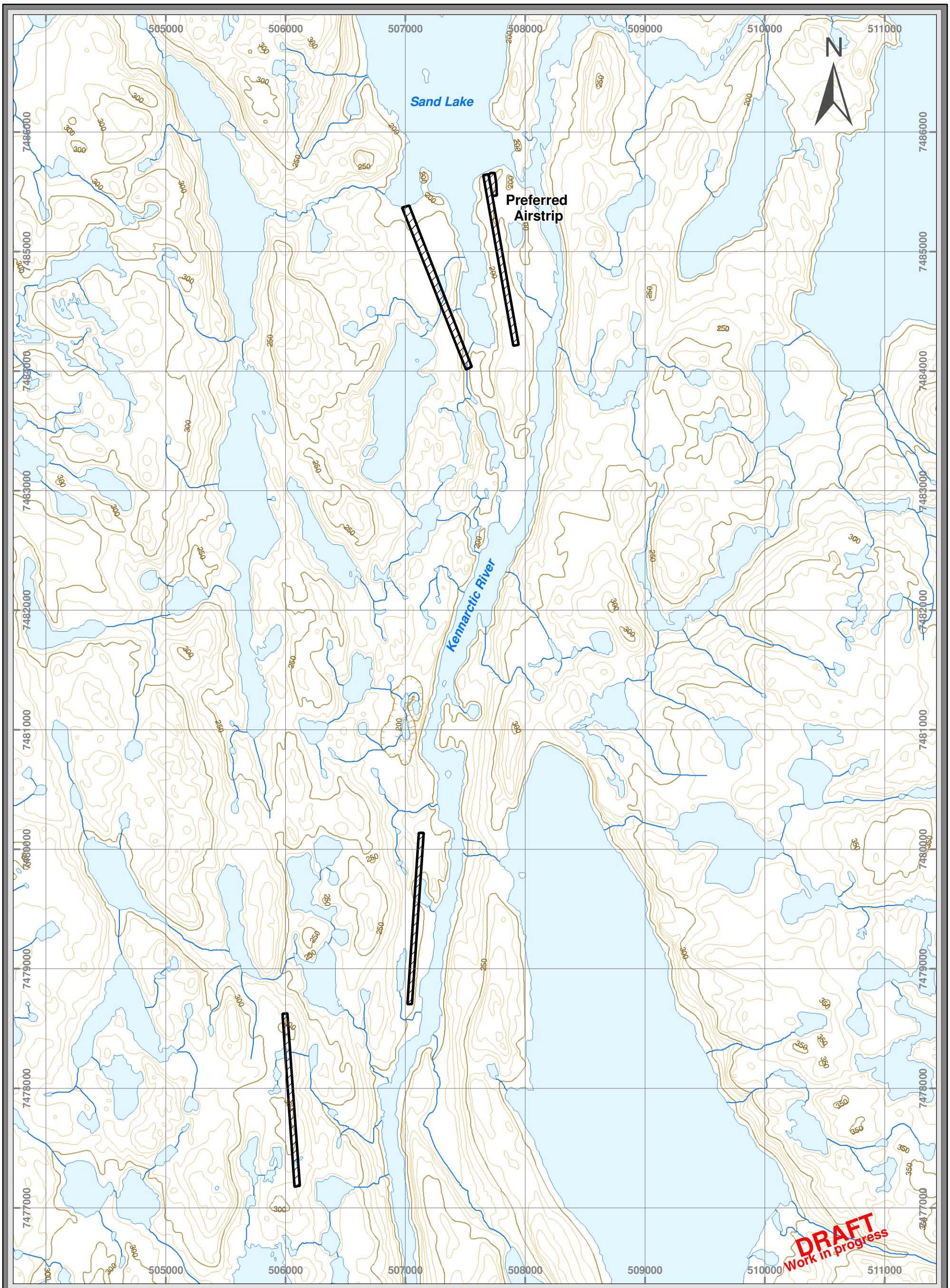
WOLFDEN Resources Inc.

Proposed Airstrip

Gartner Lee

Figure: 2

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\P51002_Fig2_Proposed_Airstrip_29cMar2006.mxd



Legend

Facilities
- Alternative Airstrip Location

Hydrology
- Waterbody
- Watercourse

Elevation Contours
- Index Elevation (50m)
- Intermediate Elevation (10m)
- Index Depression (50m)
- Intermediate Depression (10m)

0 150 300 600 900 1,200 1,500 m

1:30,000

WOLFDEN Resources Inc.

Projection: UTM Zone 12N **Datum: NAD 83**

Prepared by: EM **Reviewed by: KW**

Date: March 16, 2006

Data Sources

National Topographic Data Base (NTDB) proposed by Government of Canada, Natural Resources Canada (NRCan), at 1: 50,000 scale.

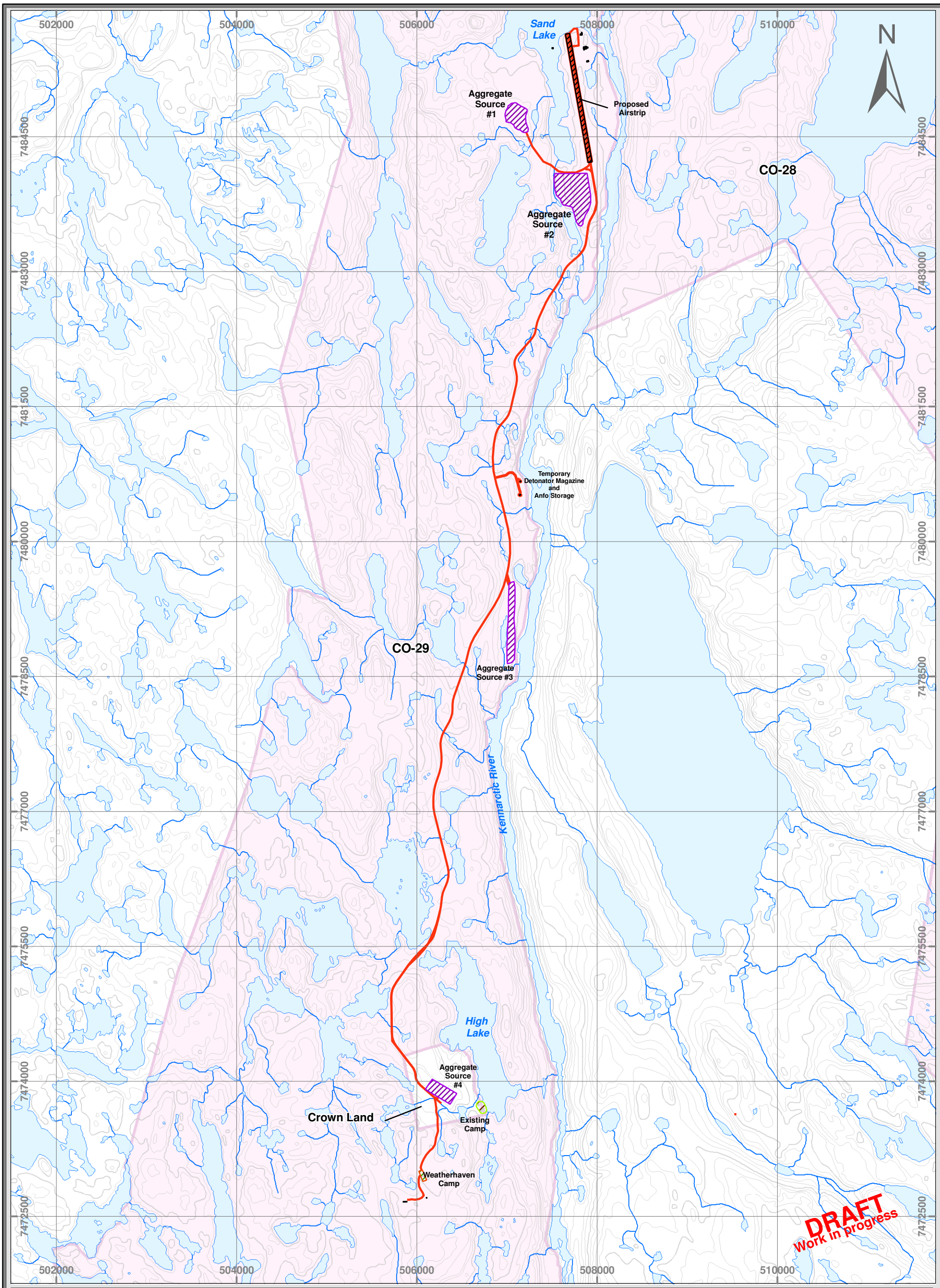
Project Study Areas and Existing/Proposed infrastructure data proposed by Wolfden Resources Inc. and Gartner Lee Ltd.

Alternative Airstrip Locations

Gartner Lee

Figure: 3

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\P51002_Fig3_AlternativeAirstrip_09bMar2006.mxd



Legend

Facilities
- Location of Road
- Proposed Weatherhaven Camp
- Existing Camp
- Aggregate Source
- Other Facility

Inuit Owned Lands
- Subsurface Rights
- Surface Rights

Elevation Contours
- Elevation (10m)

Hydrology
- Waterbody
- Watercourse

0 0.5 1 1.5 2 km

1:40,000

WOLFDEN Resources Inc.

Projection: UTM Zone 12N **Datum:** NAD 83

Prepared by: EM **Reviewed by:** KW

Date: April 11, 2006 **Revision** 1

Data Sources

National Topographic Data Base (NTDB) complied by Government of Canada, Natural Resources Canada (NRCan), at 1: 50,000 scale.

Project Study Areas and Existing/Proposed infrastructure data complied by Wolfden Resources Inc. and Gartner Lee Ltd.

Sand Lake to High Lake - 12km

Gartner Lee

Figure: 4

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\P51002_Fig4_HL_Sandlake_10dApr2006.mxd

505600
506000
N
Grays Bay
7521200
7521200
50
50
Alternative
Barge Landing
Site 'B'
7520800
7520800
Barge Landing
Site 'A'
7520400
7520400
Storage
Area
50
505600
506000
DRAFT
Work in progress

Legend

Facilities
- Storage

Roadways
- Roadway
- Approximate Location of Winter Trail

Elevation Contours
- Index Elevation (50m)
- Intermediate Elevation (10m)
- Index Depression (50m)
- Intermediate Depression (10m)

Hydrology
- Waterbody
- Watercourse

0 20 40 80 120 160 200 m

1:4,000

Projection: UTM Zone 12N **Datum: NAD 83**

Prepared by: EM **Reviewed by: KW**

Date: March 29, 2006 **Revision: 1**

Data Sources

National Topographic Data Base (NTDB) complied by Government of Canada, Natural Resources Canada (NRCan), at 1: 50,000 scale.

Project Study Areas and Existing/Proposed infrastructure data complied by Wolfden Resources Inc. and Gartner Lee Ltd.

WOLFDEN Resources Inc.

Barge Landing and Storage Site

Gartner Lee

Figure: 5

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\P51002_Fig5_Barge_Landing_29cMar2006.mxd

475000
500000
525000
7500000
7475000
7450000
7425000

Grays Bay

Barge Landing Site

N

Kennarctic River

CO-31

CO-32

Winter Trail

Sand Lake and Proposed Air Strip

CO-30

CO-29

High Lake

CO-81

CO-28

CO-24

James River

CO-23

CO-26

CO-25

Winter Trail

CO-27

CO-20

Ulu

DRAFT
Work in progress

Legend

Roadways

Proposed Winter Trail

Inuit Owned Lands

Subsurface Rights

Surface Rights

0 3 6 9 12 15 km

1:300,000

WOLFDEN Resources Inc.

Projection: UTM Zone 12N **Datum: NAD 83**

Prepared by: EM **Reviewed by: KW**

Date: March 16, 2006

Data Sources

National Topographic Data Base (NTDB) complied by Government of Canada, Natural Resources Canada (NRCan), at 1: 250,000 scale.

Project Study Areas and Existing/Proposed infrastructure data complied by Wolfden Resources Inc. and Gartner Lee Ltd.

Inuit Owned Lands compiled by Nunavut Tunngavik Incorperated. Inuit Owned Lands boundaries are approximate. They are based on the Designated Map Plan and are not based on any plan of survey.

Proposed Winter Trail Route

Gartner Lee

Figure: 6

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\P51002_Fig6_Proposed_WinterTrailRoute_09bFeb2006.mxd

500000
505000
510000
7520000
7515000
7510000
N
CO-30
DRAFT

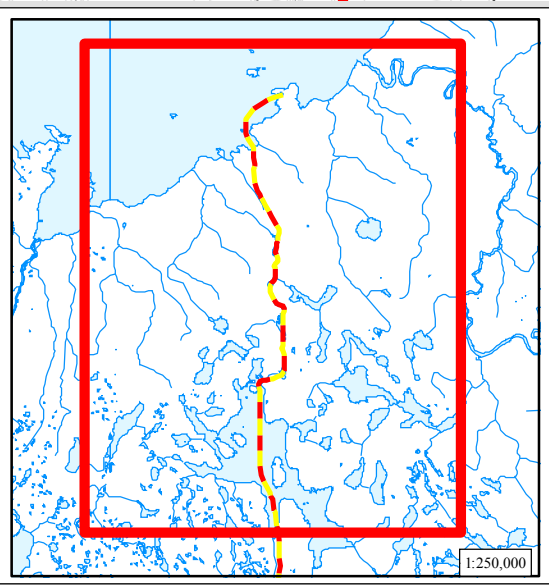
Legend

Project Components
- Winter Road
- Laydown Area

Inuit Owned Lands
- Subsurface Rights
- Surface Rights

Hydrology
- Waterbody
- Watercourse

Elevation
- 240 10m Elevation Contour



WOLFDEN Resources Inc.

Dock to Ulu

Figure 6a

Proposed Winter Route Alignment

Project 51002, April 7, 2006

Gartner Lee

N W E S

0 2 4 8 12 16 km

1:50,000

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\51002_C1_Sfig1_Dock_to_Ulu_06cMar2006.mxd

505000
510000
7505000
7500000
7495000
CO-30
CO-28
CO-29
DRAFT

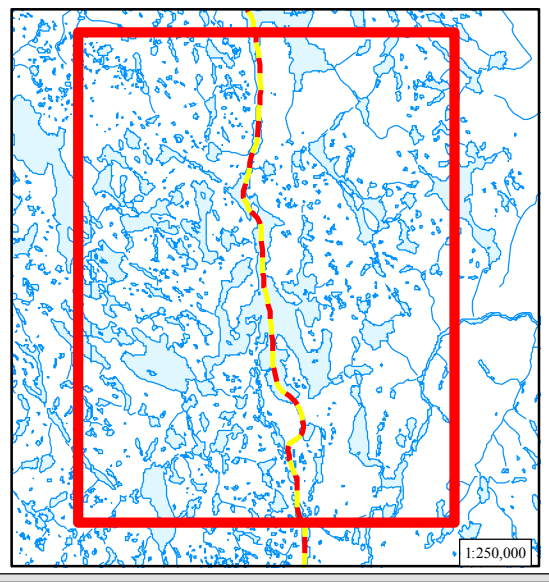
Legend

Project Components
- Winter Road
- Laydown Area

Inuit Owned Lands
- Subsurface Rights
- Surface Rights

Hydrology
- Waterbody
- Watercourse

Elevation
- 240 10m Elevation Contour



WOLFDEN Resources Inc.

Dock to Ulu

Figure 6b

Proposed Winter Route Alignment

Project 51002, April 7, 2006

Gartner Lee

N W E S

0 2 4 8 12 16 km

1:50,000

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\51002_C1_Sfig1_Dock_to_Ulu_06cMar2006.mxd

505000
510000
7490000
7485000
7480000
Sand Lake
CO-28
CO-29
DRAFT

Legend

Project Components
- Winter Road
- Sand Lake Facility

Inuit Owned Lands
- Subsurface Rights
- Surface Rights

Hydrology
- Waterbody
- Watercourse

Elevation
- 240 10m Elevation Contour

1:250,000

WOLFDEN Resources Inc.

Dock to Ulu

Figure 6c

Proposed Winter Route Alignment

Project 51002, April 7, 2006

Gartner Lee

N W E S

0 2 4 8 12 16 km

1:50,000

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\51002_C1_Sfig1_Dock_to_Ulu_06cMar2006.mxd

502000
505000
508000
511000
7474000
7471000
7468000
7465000
7462000
High Lake
CO-29
CO-28
CO-81
DRAFT

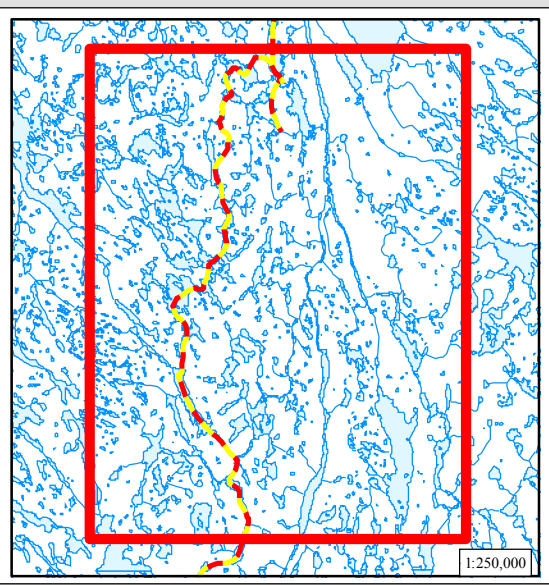
Legend

Project Components
- Winter Road
- High Lake Facility

Inuit Owned Lands
- Subsurface Rights
- Surface Rights

Hydrology
- Waterbody
- Watercourse

Elevation
- 240 10m Elevation Contour



WOLFDEN Resources Inc.

Dock to Ulu

Figure 6d

Proposed Winter Route Alignment

Project 51002, April 7, 2006

Gartner Lee

N W E S

0 2 4 8 12 16 km

1:50,000

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\51002_C1_Sfig6d_Dock_to_Ulu_06cMar2006.mxd

499000
502000
505000
508000
7459000
7456000
7453000
7450000
7447000
James River
CO-26
CO-27
DRAFT

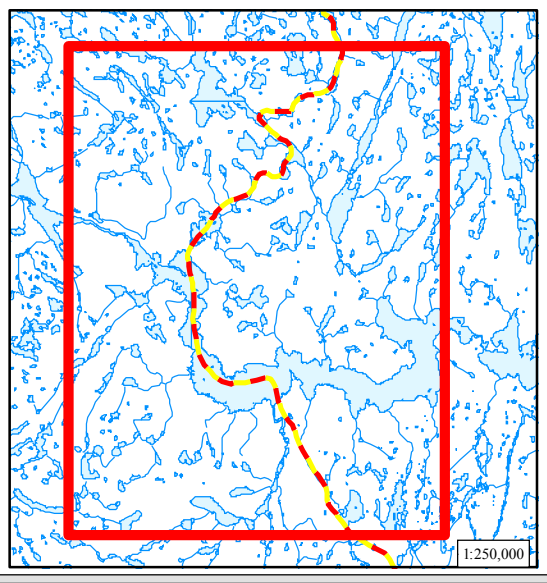
Legend

Project Components
- Winter Road

Inuit Owned Lands
- Subsurface Rights
- Surface Rights

Hydrology
- Waterbody
- Watercourse

Elevation
- 240 10m Elevation Contour



WOLFDEN Resources Inc.

Dock to Ulu

Figure 6e

Proposed Winter Route Alignment

Project 51002, April 7, 2006

Gartner Lee

N W E S

0 2 4 8 12 16 km

1:50,000

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\51002_C1_Sfig1_Dock_to_Ulu_06cMar2006.mxd

502000
505000
508000
511000
7444000
7441000
7438000
7435000
7432000
CO-27
CO-26
CO-25
CO-20
James River
DRAFT

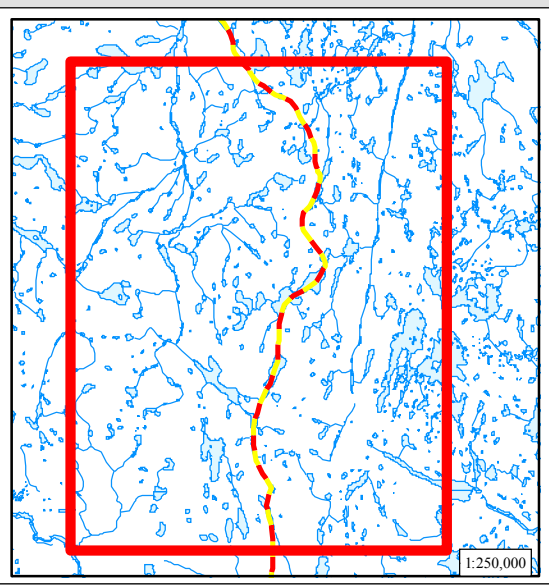
Legend

Project Components
- Winter Road

Inuit Owned Lands
- Subsurface Rights
- Surface Rights

Hydrology
- Waterbody
- Watercourse

Elevation
- 240 10m Elevation Contour



WOLFDEN Resources Inc.

Dock to Ulu

Figure 6f

Proposed Winter Route Alignment

Project 51002, April 7, 2006

Gartner Lee

N W E S

0 2 4 8 12 16 km

1:50,000

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\51002_C1_Sfig1_Dock_to_Ulu_06cMar2006.mxd

499000
502000
505000
508000
7429000
7426000
7423000
7420000
7417000

CO-20

James River

DRAFT

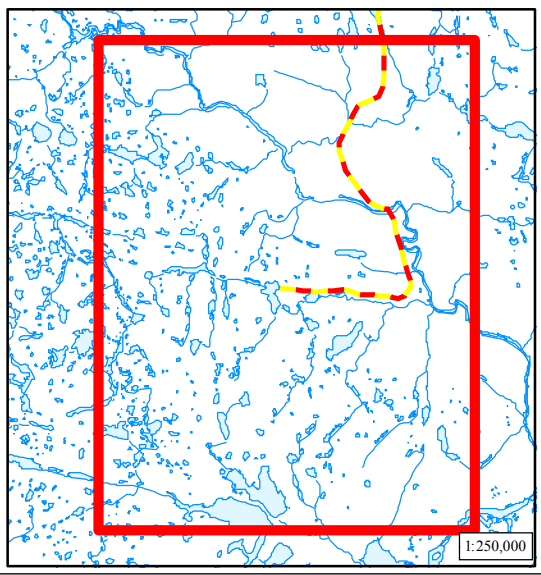
Legend

Project Components
- Winter Road
- Ulu Site Facility

Inuit Owned Lands
- Subsurface Rights
- Surface Rights

Hydrology
- Waterbody
- Watercourse

Elevation
- 240 10m Elevation Contour



WOLFDEN Resources Inc.

Dock to Ulu

Figure 6g

Proposed Winter Route Alignment

Project 51002, April 07, 2006

Gartner Lee

N W E S

0 2 4 8 12 16 km

1:50,000

Map Document: E:\GIS\GIS_proj\Y2004\P41004\ArcMap\P51002_Permit_License_Feb2006\51002_C1_Sfig1_Dock_to_Ulu_06cMar2006.mxd