

## **2 Project Description**

### **2.1 Project Overview**

This section provides a description of all project components, including the mine and ore processing facilities; water management, effluent treatment and mine and processing waste management system design; camp facilities, and supporting infrastructure including power supply, water supply, sewage treatment, air transport facilities and road access.

#### **2.1.1 Project Purpose and Need**

At present, the world demand for zinc is exceeding the available supply. North America is not self sufficient in its zinc production. China has become the world's largest consumer of zinc, constituting 25% of the world's consumption. The demand for zinc in China grew by 19% in 2003 and interim numbers in 2004 suggest strong continued growth in zinc consumption.

The long-term picture for zinc production shows no relief in sight for the current market trend. The increasing demand for zinc will continue to outpace the forecasted modest increases in production. There are no major world zinc projects scheduled for development over the next three years that could make up the market shortfall. The timing for the development of a low cost zinc producer is excellent. The market for zinc concentrates is strong, bringing favourable purchase terms and providing long-term security to project economics. Yukon Zinc Corporation (YZC) intends to take advantage of this excellent market opportunity and the exceptional ore resource of the Wolverine Project to create profits for its shareholders.

The Wolverine Project will provide a much-needed boost to the Yukon economy, an economy that has experienced a serious downturn in recent years, particularly in the mining sector. The project will provide a solid tax base, support for infrastructure development, and workforce development opportunities for local communities.

#### **2.1.2 Project Timing**

The construction phase is scheduled to commence in summer 2006. This will allow for the completion of the access road and infrastructure at the industrial and camp areas within two construction seasons. Construction can commence once YTG Energy, Mines and Resources grant a Quartz Mining License. Commencement of milling operations is contingent upon receipt of a Type A Water License from the Yukon Water Board. The anticipated schedule for EA Report review and receipt of these licenses is summarized in Section 3.2: Construction Phase Activities.

#### **2.1.3 Overview of Project Components, Design Criteria and General Layout**

The overall layout for the Wolverine Project is presented in Figure 2.1-1. The project has and will continue to be designed according to the following general criteria:

- The project must meet or exceed the highest standards of industrial health and safety and demonstrate minimum environmental impact. Existing industry guidelines, codes

- of practice, standards and regulations will be consulted and the most stringent will be applied.
- The project will mine and process 1500 t/d of run of mine ore, including variable amounts of external dilution.
  - The project will be designed to operate continuously, 365 days per year with appropriate design allowances in each department for planned maintenance shut downs.
  - Unless proven otherwise, all the ore and waste rock will be assumed to be potentially acid generating.
  - The mining method will be drill and blast, trackless and use diesel powered equipment. Most development will be in the ore body itself. Completed stopes will be backfilled. The mining method must be very adaptable, safe, and conserve the resource by achieving high recovery because the ore body is of variable thickness, high value per tonne (i.e., grade) and variable dip. It is also enclosed between very weak rocks.
  - A dense medium process step will be used after crushing to scalp off dilution and minimize the amount of material that is milled and concentrated. On occasion as much as 50% of mine production will consist of external dilution from wall rocks.
  - The process plant will use conventional flotation to produce three concentrates (zinc, lead and copper) to agreed quality specifications. The concentrates will be sold to external smelters for processing to metal. The project will not produce marketable metal as the technology is not available to do this.
  - Employees will be drawn from local communities and provided with hotel style accommodation at the mine camp. The camp will be run as fly-in/fly-out with Whitehorse as the point of hire, complemented by bus transportation of staff from the nearby communities of Ross River and Watson Lake.
  - A nucleus of skilled experienced workers will be recruited for initial development and construction. Through local recruiting and comprehensive training, the company has set the goal of maximizing the percentage of Yukon residents, and Ross River Kaska Dena in particular.

### **Figure 2.1-1 Overall Project Layout (Vol.2)**

When completed, the Wolverine project production facilities will consist of a 1500 t/d underground mine, flotation concentrator, backfill plant, process water treatment plant, and a subaqueous tailings facility. These production facilities will be supported by the following infrastructure: a maintenance workshop, warehouse, diesel-electric power generation, fuel and propane tank farm, offices, sanitary and changing facilities (dry), camp, water supply system, sewage plant, domestic and industrial waste disposal and the access road, and the existing airstrip and temporary waste rock pad. Plan view layouts for the industrial complex area and the camp area are presented in Figures 2.1-2 and 2.1-3, respectively. The existing exploration camp on Wolverine Lake is outside the scope of this report as it will remain as an exploration camp.

**Figure 2.1-2 Industrial Complex Area Layout (Vol. 2)**

**Figure 2.1-3 Camp Area Layout (Vol. 2)**

The overall strategies which guided the surface layout included:

- locating the industrial facilities close to the mine entrance
- directing all industrial site runoff to the Go Creek drainage, after settling, treating and monitoring
- minimizing the distance traveled above ground in winter by underground vehicles, especially ore trucks, to maintain safe conditions
- containing all process and other water from ore processing and storage areas and ensuring that it cannot be released to the environment except after storage and treatment
- utilizing as few buildings as possible for energy efficiency
- locating key-critical facilities where foundation conditions had been shown to be satisfactory

For efficiency and to facilitate environmental control, the primary crusher, concentrator and other industrial facilities will be constructed as two separate buildings close to the entrance to the mine (Figure 2.1-1). The camp and its supporting facilities and tailings facility will be constructed southeast of the industrial area (Figure 2.1-1).

Certain additional facilities will be required during construction including contractors' laydown areas, the existing temporary waste rock storage, concrete batch plant, covered temporary storage, borrow excavation and storage, contractors' workshops and offices (Figure 2.1-4). It is intended that all of the contractors' facilities and the concrete batch plant and aggregate stockpile will be removed when construction is completed and the sites will be reclaimed. The temporary waste rock storage area will be required during mine development and until the tailings impoundment is commissioned. Subsequently all the accumulated underground development waste will be removed and submerged in the tailings area. All future mine waste rock will either be placed under water in the tailings impoundment or as paste backfill.

**Figure 2.1-4 Industrial Complex Construction Phase Plan (Vol. 2)**

The following changes have been made since the Wolverine Project Description Report (Gartner Lee Ltd. 2004) was submitted in November 2004:

- production rate from 1250 t/d to 1500 t/d (mill feed rate has not changed)
- paste backfill instead of cemented rock fill
- adoption of dense media separation process step

- improved site locations for the industrial plant, camp, temporary waste rock pad and tailings facility

These changes are described in detail in Section 2.2: Project Alternatives. Details pertaining to all site infrastructure and facilities are presented in Section 2.10 and site activities are described for each phase in Section 3: Project Schedule and Phases.