WASTE ROCK MANAGEMENT PLAN
JERICHO DIAMOND MINE, NUNAVUT

EXECUTIVE SUMMARY

Introduction

The Waste Rock Management Plan (WRMP) has been developed to provide a methodology for managing the placement and storage of the various types of waste rock generated during mining and processing of kimberlite ore at the Jericho Diamond Mine (Jericho). Part 1 of the WRMP discusses the management of the site's waste rock dumps. Part 2 of this document discusses the management of kimberlite ore and processed kimberlite stockpiles.

Site Background Information

The initial years of mining will be by conventional open pit methods with a combination of mining shovels and haul trucks. Hydraulic shovels (or front-end loaders) with 5 to 10 m^3 buckets have, and will continue, to be used. If further analysis dictates that underground mining is the preferable method for later years of the mine life, the open pit/underground transition would start at the level determined by the economic trade-off studies and actual mining costs experienced during the first years of operation. Under this scenario, once open pit mining is complete, an underground decline will be driven at a -15% gradient to access the high grade centre lobe kimberlite ore from elevations below the bottom of the open pit.

Waste Rock and Overburden

Two distinct waste materials will be produced during mining, including:

- Overburden Waste which comprises a mixture of glacial soils (till) overlying the kimberlite and surrounding waste rock; and
- Waste rock, which comprises granitic country rock, associated pegmatite phases, and diabase dykes.

The overburden and waste rock will be stockpiled in two designated waste dumps.

Design of the Waste Rock Dumps

The layout of the waste dumps was developed by SRK Consulting (SRK 2005a) and was partially developed under previous mine ownership. The general layout of the dumps is illustrated in Figures 1 to 3 of this plan. The dump design was selected to:

- Minimize the number of catchments potentially affected by drainage from the waste dumps;
- Facilitate the design and operation of seepage control structures related to the waste dumps;
- Maintain an adequate buffer zone between the toe of Waste Dump 1 and Carat Lake;

- Optimize the offsetting impacts associated with the minimized project footprint and conformity with the natural relief in the immediate area; and
- Minimize haul distances.

Closure and Reclamation

Shear intends to reclaim the waste dumps such that they will serve as wildlife habitat. The aim of the reclamation plan is, therefore, to promote, to the extent practical, rehabilitation of the land to this use. Key elements of the plan include:

- Vegetation prescriptions based on reclamation trials;
- Re-grading dump slopes; and
- Construction of ramps to allow safe caribou transit across the dump slopes.

Verification and Monitoring

Monitoring of the waste rock dumps will include:

- Recording monthly quantities of ore processed;
- Monthly quantities and disposal location of any overburden, waste rock, low-grade ore, and CPK;
- Geochemical properties of waste rock during processing operations;
- Ice monitoring within waste rock samples, blasted rock and freshly blasted rock faces;
- Seepage monitoring from the waste dumps;
- Visual inspections; and,
- Thermal monitoring .

Coarse Processed Kimberlite and Recovery Circuit Rejects

The kimberlite ore will only be stockpiled to separate mining and processing operations and provide a surge against weather and mine delays. It is expected that no more than one month's supply will be stockpiled at any given time (<30,000 m^3 of kimberlite). Some of the coarse processed kimberlite (CPK) and recovery rejects processed kimberlite (RRPK) have been used in construction and may be used for future construction.

The CPK will comprise a gravely sand made up of about 50% to 93% sand and 7% to 50% fine gravel from mechanical breakdown of the kimberlite ore. Processing plans call for the minimum and maximum particle sizes to be 0.1 mm and 19 mm, respectively. The total tonnage of coarse kimberlite is estimated to be 3.43 million tonnes (mt).

RRPK is produced as a result of kimberlite ore processing. They will comprise medium to coarse sand with some fine gravel. Particle sizes are expected to range from 1 to 8 mm. The total tonnage of the RRPK is estimated to be approximately 0.17 mt.

Design

The layout of the stockpiles for the kimberlite ore, CPK, and RRPK was developed by SRK Consulting (Canada) Inc. (SRK 2005b) and partially developed under previous mine ownership. The general layout of the dumps is illustrated in Figures 1, 2 and 6 of this plan. The dump design was selected to:

- Maintain the location of the CPK stockpiles in a minimum number of catchments potentially affected by drainage from the CPK dumps and stockpiles;
- Facilitate the operation of existing seepage control structures related to the CPK stockpiles by using the east sump and the PKCA drainages;
- Optimize the offsetting impacts associated with the minimized project footprint and conformity with the natural relief in the immediate area; and
- Minimize haul distances and provide access to material for its potential use in reclamation.

The kimberlite ore stockpile will be situated immediately east of the plant facility and will be limited to blending piles representing, on average, less than 30,000 m^3 of material. The kimberlite ore stockpile will be graded so that any runoff is directed to the east sump for recycling or pumping to the PKCA.

Verification and Monitoring

Monitoring will include:

- Monthly quantities of ore processed;
- Monthly quantities and storage locations of kimberlite ore, CPK, and recovery circuit rejects;
- Geochemical monitoring;
- Seepage monitoring;
- Visual inspections; and,
- Thermal monitoring.