3.0 TILL MATERIALS AND HANDLING PLAN

3.1 Surveys

Till information at the Jericho Diamond site was derived from two sources: geotechnical surveys conducted by Bruce Geotechnical and a surficial geology survey conducted by Thurber Engineering in 2003 and was discussed in the 2006 Closure and Reclamation Plan update.

The approximate total tonnage of till salvaged to date is 2,030,000 tonnes which is located on the Till Stockpile. No estimate is available for any additional till salvage, although expansion of the pit to its ultimate dimension will result in additional till salvage. The Till Stockpile is composed primarily of glacial till with some sand and gravel.

The density of these tills after dumping could range from about 1.6 to 1.9 t/m^3. Due to the presence of ice, the settled density has been conservatively estimated to be 1.7 t/m^3, leading to an estimated dump volume of about 1.5 million m^3 when all tills have been salvaged.

3.2 Salvage Requirements at Full Mine Development

3.2.1 Waste Rock Dumps

The combined waste rock dump tops will encompass an estimated area of 21.9 ha. At a top dressing material depth of 0.3 m, coverage would require 65,690 m^3. The dump slopes are not anticipated to be top dressed. Priority areas for reclamation will be sites that have the highest chance of benefiting from top dressing, such as the PKCA and infrastructure pads. Dump slopes will be graded down to provide a relatively flat slope at an estimated angle of 19 degrees. Till will not be placed on these slopes because it will slump and run off the first snow melt freshet. Further, side slopes will not hold moisture and it is unlikely plant growth could be sustained without artificial addition of water.

3.2.2 Ore Stockpile Pad

The ore stockpile pad is located in the diamond plant area and will be reclaimed with the camp, discussed below.

3.2.3 PKCA

The PKCA will cover an area of 18.8 ha including dams. As the PKCA is developed from east to west it will be progressively covered with coarse PK and rock over the eastern part of the impoundment. On dry and settled areas, vegetation trials will be carried out and if proven successful, the PKCA will be progressively revegetated. A cover of up to 0.5 metre of coarse kimberlite may be used. If growth trials indicate poor plant growth success on coarse kimberlite, suitable overburden top dressing material may be placed to top dress the coarse PK. Use of overburden will pre-suppose successful vegetation trials on this growth medium. As shown on Appendix A, Drawing 2, a pond will remain at the close of the PKCA. A total of 58,765 m^3 of PK and 35,259 m^3 of overburden will be required to reclaim the PKCA. Most of the coarse kimberlite stockpiles will not be required for reclamation. They will be regraded similar to waste rock dumps. Planting and/or cover with overburden will be decided on the same basis as for the PKCA. The area of the coarse kimberlite stockpile tops will be 6.7 ha upon completion of ore processing (discounting removal of coarse PK for reclamation of the processed kimberlite containment area).

3.2.4 Roads and Pads

Roads, laydown areas, the plant, generators, accommodation, truck shop, crusher site, explosives storage, emulsion plant and explosives truck shop, and miscellaneous small areas will cover an additional approximately 23 ha.

The total area of disturbance of borrow areas and airstrip will be 36 ha, if borrow areas are completely exploited. As shown on Appendix A, Drawing 2, only relatively small parts of the borrow areas are planned for extraction; a total estimated area of 8.6 ha will be disturbed. These facilities are/will be located on eskers and no top dressing of additional material will be required, only regrading where required to eliminate steep slopes and add micro-contours where indicated.

3.2.5 Open Pit

The open pit is not slated for revegetation due to the steep side slopes. Rather it will be allowed to fill with water. Current plans call for discharge through a dedicated channel once the pit fills (estimated to be a minimum of 20 years post mine closure). Estimates of pit refill time will be refined once adequate water balance data are collected by the mine. Water balances are calculated annually for the mine and the 2006 water balance is expected to be completed in 2007 prior to spring runoff.

3.2.6 Summary

Table 3-1 contains a summary of top dressing material requirements for reclamation. Top dressing material will be till (preferred) or esker (alternate). Till is a mine unit that is already disturbed, whereas use of esker will require additional disturbance.

Table 3-1: Reclamation Top Dressing Material Requirements

Facility	Requirements for 0.3 m Cover 31 December 2006 (Year 2) (m^3)	Requirements for 0.3 m Cover Final Mine Configuration (m^3)
Waste Rock Dump 1 Top	0	35,900
Waste Rock Dump 2 Top	29,790	29,790
PKCA Slurry containment cells	28,137	35,259
Coarse Kimberlite Tops[1]	8,979	20,200
Pads: Camp Storage, Explosives Storage, Crusher Site, Laydown, Waste Transfer	69,800	69,800
Airstrip	0	0
Total	**136,706**	**190,949**

Notes
[1] Should revegetation trials indicate successful plant growth on coarse PK, no top dressing will be applied.

The largest proportion of overburden tills was removed in Year 1 and 2 (2005/2006) and is stockpiled on the till stockpile portion of Waste Rock Dump 2 (Appendix A, Drawing 1). Till may temporarily (less than one season) be stockpiled at other locations where sedimentation in runoff can be controlled and where the area is already in a disturbed site, such as one of the

pads with vacant space. Temporary storage may occur, if it allows placement of till near its final location and if it is anticipated the till will be placed at its final location within that year.

3.3 Till Stockpile Design and Construction

The Till Stockpile is used primarily to store potential top dressing material, most of which was frozen when it reported to the stockpile. The surface of the Till Stockpile thaws during the summer months and requires confinement. The design of the Till Stockpile was based on the use of waste rock to provide confinement to the till in the event it thaws and, due to excess water, shows a propensity to slump or "run." The Till Stockpile is located on the north central side of the present Waste Rock Dump 2 confined by a toe berm. Performance of the rock berm in 2005 and 2006 confirmed its effectiveness at prevent runout of thawed till.

Till was hauled to its stockpile using off-road mine trucks on all-weather mine access roads. The foundation preparation procedures for the till were the same as those used for the waste dumps. Waste rock was placed by end dumping and spread with a dozer.

In order to preserve the frozen conditions within the base of the waste rock, a frozen foundation layer was developed at the base of the overburden. In addition, waste till placement will be managed to try to lock in the frozen conditions within the foundation layer and prevent thawing of either the foundation layer or the underlying foundation.

In the summer prior to the anticipated need for material from the stockpile, the anticipated quantity will be windrowed if necessary to facilitate handling when frozen and to increase the active layer depth if required. Because excessive rehandling negatively affects top dressing material properties, rehandling will be minimized to the extent practical.

3.4 Top Dressing Placement Strategy

For reclamation, top dressing material will be windrowed along the top dressing area in preparation for a dozer to replace the material. Stockpiles located remote to the replacement area will be hauled by truck, and again windrowed along the top dressing area for replacement.

The replacement of the top dressing material will be under the direct supervision of in-house environmental personnel to ensure the required replacement thickness is achieved and to monitor the condition of the replaced material. Weather or material conditions, which are not conducive to effective replacement, will require temporary suspension of the program or remediation measures. Any amendments to the top dressing material, which are identified as being required based on reclamation trials, will be added during replacement.

4.0 CLOSURE EROSION AND SEDIMENT CONTROL PLAN

Sedimentation control structures and erosion control are discussed in the water management plan for the project (Tahera 2005). In summary, all clean water (runoff from undisturbed areas) will be routed around the site as required. All runoff from disturbed areas will be directed to the open pit, east sump or sediment ponds (when constructed) as required for settling of suspended sediment and then released to the environment (in most cases, upland tundra). Alternatively, this water will be discharged to the PKCA if water licence criteria are not met. On closure mine area drainage will be directed to the open pit which will act as a sink until it eventually fills and overflows, either into Stream C1 or an open channel to direct water away from Stream C1 (see Section 6.4.3).

Erosion will be controlled principally by slope angles of constructed facilities being kept less than the angle of repose or by rock armouring, as appropriate. Long-term sediment control will consist of revegetation, where such is feasible, or rock armouring where it is not, and where erosion control is required.

There will be areas where revegetation is not possible and rock armouring will be used in such areas. Because overburden material will be placed and revegetation will proceed on most flat surface areas, the un-revegetatated areas are likely to be the slopes of the waste rock, coarse kimberlite and the remaining overburden stockpiles. The regraded surfaces will consist of coarse rock in most of these cases, so the requirement for additional erosion protection is likely to be very limited. Where it is necessary to import armouring for erosion protection, it will be obtained by screening suitably sized inert material from the waste rock or overburden stockpiles.

5.0 REVEGETATION PLAN

5.1 Introduction

Revegetation studies are scheduled to commence in 2007.

Pre-existing native plant communities cannot be completely re-established, however some reclamation is possible. Many species of wildlife (e.g. caribou, canids) should resume use of disturbed esker habitats when the infrastructure is removed. A cooperative approach will be sought with Ekati and Diavik mines information exchange on reclamation research at diamond mines in Arctic environments.

Wherever possible islands of undisturbed vegetation will be left in disturbed areas. These islands will provide a seed source for adjacent areas once reclamation of those areas commences. This approach has been shown to be effective in temperate alpine areas (Bittman 1995), and also at preliminary trials at Ekati (Reid 2002).

5.2 Consultation with Arctic Diamond Mines

To date, only published results from Ekati and Diavik are reviewed as they become available. Once revegetation trails commence at Jericho dialog with the mentioned mines is expected to increase.

5.3 Revegetation Objectives

The target end land use is wildlife habitat and the aim of Jericho reclamation is to promote, to the extent practical, rehabilitation of the land to this use. Vegetation prescriptions will be developed and tested based on the pre-disturbance ecological zones, where the disturbed areas are located. The aim will be to provide conditions similar to pre-disturbance and to the extent possible, revegetate or encourage native species at the site similar to those that occurred prior to disturbance.

The active layer (permafrost) plays an important role in erosion, particularly thermokarst and slumping. An objective of reclamation activities will be to design rehabilitation so as to minimize any potential negative effects to the active layer (particularly increases) and prevent melting of ice lenses, which can lead to slumping and erosion from runoff. The principal control will be building in winter to lock in permafrost where possible; alternately addition of till or till and rock cover.

A primary objective in some cases will be to retard wind and water erosion. In areas particularly susceptible to erosion this objective may require the use of agronomic species in favour of slower growing native species, with the realization that this will lead to retarding of natural successional processes and delay return of these sites to productive natural wildlife habitat. Failing relatively rapid establishment of vegetation, rock armouring may be required.

5.4 Mine Land Units

5.4.1 Ecological Zones

The pre-mining mine land units at the Jericho Diamond Project are best visualized by superimposing the ecological zones existing at the site with the mine facilities. This superposition is attached here in Appendix A, Drawing 3. The mine land units for planned construction together with the maximum disturbance areas of each are listed in Table 5-1. All mine land units, with the exceptions of the airstrip and borrow pits are in multiple ecological

zones. The 1999 vegetation study (Burt 1999) described vegetation associations and relevant extracts are presented in this section.

Aerial photographs of the mine area prior to mine construction are provided in Appendix E.

Table 5-1: Approximate Areas of Surface Disturbance at Full Mine Development by Ecological Zone

Mine Unit	Ecological Zones and Areas Affected (ha)[1,2]							
	WGBM	MBM	DBT	DRT	LK	CRH	EKD	Total
Mine								
Open Pit	3.8		10.2	2.8				16.9
Waste Rock Dumps	5.9	6.7	10.5	32.1				55.2
Roads								
Haul (18 m width)	0.2	0.6	0.8	4.2	0.01			5.8
Access (9 m width)	1.3	0.4	2.5	4.0				8.2
Airport (6 m width)	0.5		0.2	1.1			1.7	3.5
Airstrip							2.4	2.4
PKCA	1.0		1.4	2.4	9.0			13.8
Dams/Dykes	0.3	0.9	1.2	2.2	0.4			5.0
Coarse PK Stockpiles	0.6		6.3	7.3	2.0			16.2
Camp/Plant Area			1.1	9.5				10.6
Crusher				1.5				1.5
Explosives Storage	0.6		0.1	1.0				1.7
Borrow Areas	0.1						8.5	8.6
Waste Transfer Area							0.5	0.5
Total	**14.5**	**8.7**	**39.8**	**73.9**	**11.4**	**0.3**	**13.8**	**162.3**
% of Total	**9%**	**5%**	**25%**	**46%**	**7%**	**0.2%**	**8%**	**100%**

Notes
[1] Based on maximum areal extent of surface disturbance
[2] WGBM = Wet grass/birch meadow, MBM = Moist birch meadow, DBT = Dry barrenground tundra DRT = Dry rocky tundra, LK = Lake, CRH = Cliffs/rocky hills, EKD = Esker, Kame Delta

Maximum area disturbance will occur at approximately Year 3 with the expected ultimate footprint of the waste dump being established (excluding pit wall development) given that Borrow Area A3 will require development. A small reduction in some disturbed area may be possible with preparation for revegetating parts of the camp and borrow areas not longer required. Realistically, however, greening up will not have occurred in this short timeframe in that decades are normally required for revegetation of mesic sites and typically even longer for dry sites.

Ecological zones are described in detail in the vegetation report for the Jericho Final EIS (Burt 1999) and a summary attached in Appendix B.

5.4.2 Surficial Geology of Mine Units

Surficial geology provides some insight into surficial characteristics and the mapping produced by Thurber (2003) is attached in Appendix A, Drawing 4.

Surficial cover of most of the mine units listed in Table 5-1 will be altered by mine development. These units include the open pit, waste rock dumps, ore stockpiles, building pads and the part of the PKCA holding fine PK. The surficial conditions of other areas will not be completely

altered. These units include the airstrip, most mine roads except for extensive fill areas, laydown areas and the exploration camp area. Section 6 discusses the reclamation plans for each of the mine units. Based on Ekati experience, till and organic surficial units are the most likely areas to be successfully reclaimed without soil amendments or other manipulation of the surface other than stabilization and scarification. Reference to the surficial geology map indicates this would include much of those areas that will not be extensively modified from the pre-mining condition.

5.5 Reclamation Research

Revegetation trials will be used to determining what reclamation prescriptions are most likely to be successful in the Jericho Project area; reclamation research is scheduled to commence early in the production phase. The reclamation research planned will build on the experiences of Ekati.

Annual reports on revegetation trials will be issued to NWB once internal review is completed.

5.6 Reclamation Trials

Reclamation trials will be conducted throughout the mine life with greater intensity of activity during the initial years. The purpose of the trials will be to develop a database on establishment and growth success of vegetation on reclaimed land. As discussed previously, other diamond mine operators in the area will be canvassed as to their successes and failures. The reclamation literature will also be reviewed on an on-going basis. Conceptually, trials could include:

- the effects of top dressing on plant growth for a particular land unit;
- the effects of mixing organic and mineral soil;
- the success of establishment of various vegetation prescriptions;
- the effects of fertilizer mixtures and rates of application;
- the existence and rate of encroachment of native species;
- effects of water content of soil;
- effects of drainage characteristics of soil including erosion resistance;
- soil characteristics measurements:
    - pH
    - organic carbon content
    - texture/particle size distribution
    - salinity (sodium adsorption ratio)
    - electro-conductivity (EC)
    - total N
    - trace metals in soils, roots and shoots

Because some limited success with use of PK as a growth medium has been demonstrated by Ekati, test plots both on and off the PKCA will be established at Jericho to test the use of PK at the mine. As part of this program, the on going results at Ekati and other diamond mines will be monitored by the Jericho Mine.

6.0 RECLAMATION PROGRAM

6.1 Temporary Shutdown

A temporary shutdown for this plan is defined as a cessation of mining and processing operations for a finite period with the intention of resuming operations as soon as possible after the reason for the shutdown has been resolved. Possible causes for such a shutdown could be a major mechanical equipment failure, late delivery of critical equipment or supplies, or labour conflict.

6.1.1 Open Pit

The follow procedures will be undertaken:

- All mobile equipment will be removed from the pit and stored in the plant area.
- During the summer, electricity to the pit will be maintained and the sump pumps operated as required to keep the pit drained; if maintenance of power to the pit is not practical, diesel pumps will be substituted for the normal sump pumps. During the winter this precaution is not necessary.
- All hazardous materials will be taken from the pit and stored in appropriate central locations.
- The pit will be inspected regularly to ensure overall integrity.

6.1.2 Processing Plant

The plant will be shut down in a planned and orderly sequence to prevent damage to equipment, piping and instrumentation. The following preparatory measures will be taken:

- The plant will be run until all kimberlite in the process stream is through the plant.
- The plant will be purged of all diamondiferous materials.
- All diamonds will be removed from the site.
- All slurry lines will be flushed of solids.

Procedures during the shutdown will be as follows:

- Minimal heating to the process building will be maintained to prevent equipment freezing.
- Electricity to the building will be maintained.
- All major equipment will be run periodically to ensure lubrication and integrity of the rotating parts.
- Ferrosilicon will be recirculated once per day to prevent setting up in the circulating medium tanks.

6.1.3 Surface Infrastructure

During temporary shutdown, the site infrastructure will be placed into a care and maintenance mode to ensure environmental stability and orderly restartup as follows:

- Minimal heating to critical facilities will be maintained to prevent equipment freezing.
- All non-critical equipment will be shut down.
- All necessary support facilities and services for care and maintenance personnel will continue to operate:
    - freshwater intake and potable water treatment;

    - sewage treatment;
    - power plant;
    - glycol heating systems;
    - diesel fuel storage and distribution;
    - part of the accommodation and kitchen facilities.
- All major equipment will be run periodically to maintain operability.
- All hazardous materials stored within site facilities will be collected and stored in a central secure area, e.g., hazardous materials storage building.

6.1.4 Mine Waste and PKCA

The following actions will be taken:

- PK slurry lines will be purged, flushed and drained.
- Dust control operations will be maintained.
- Routine dam inspections will be continued.
- Pump back equipment below dams (except the reclaim water system) will continue to operate.
- The reclaim pump and line will be purged, flushed and drained.

6.1.5 Water Management Facilities

Collection sumps and ditches around the site will be maintained to manage runoff from the site.

6.1.6 Monitoring

All monitoring required by the Jericho water licence would be maintained, except that required by PKCA discharge if no discharge is to occur.

6.2 Indefinite Shutdown

For this plan, indefinite shutdown is a cessation of mining and processing operations for an indefinite period with the intention of resuming operations in the future. During indefinite shutdown the site will be placed into a mode of minimal operating expense while maintaining safety and environmental stability. Possible causes included prolonged unfavourable market conditions or protracted labour dispute.

6.2.1 Open Pit Mine

Procedures similar to those for temporary closure will be followed.

6.2.2 Processing Facilities

Procedures similar to those for temporary closure will be followed. In addition:

- Equipment and gearboxes will be drained of lubricants, which will be stored in sealed drums in the maintenance shop.
- Tanks will be drained.
- Remaining ferrosilicon will be pumped to the PKCA.
- All water, glycol and slurry lines will be flushed and drained. Glycol will be stored in sealed drums.
- Reagents will be stored in locked sea containers.

- The entire process plant will be locked and all heating and electricity turned off.

6.2.3 Surface Infrastructure

Procedures similar to those for temporary closure will be followed.

6.2.4 Mine Waste and PKCA

Procedures similar to those for temporary closure will be followed.

6.2.5 Water Management Facilities

Procedures similar to those for temporary closure will be followed.

6.2.6 Monitoring

All monitoring in the first year of indefinite shutdown would be as established by the mine's Water Licence. If no significant changes in water quality or aquatic receptors as determined from the mine's AEMP after one year, monitoring would be reduced to once in the spring before breakup, once in the summer and once in the fall before freeze up. During any discharge of PKCA supernatant required to maintain storage capacity in the facility, monitoring as required by the mine's water licence would be conducted.

6.3 On-Going Reclamation

Table 6-1 lists areas of disturbance and the year reclamation will be carried out.

Table 6-1: Reclamation Areas by Year

Facility	Area (m^2)	Year Reclaimed
Waste Rock Dump tops	218,962	Years 7&8
Roads	175,000	Year 9
Airstrip	92,700	Year 9
PKCA	94,350	on going
Coarse PK	67,220	on going
Camp and Storage, Explosives, Crusher, Waste Transfer	233,667	Year 9
Exploration Camp[1]	50,000	Year 1-3
Borrow Area A1	31,000	on going
Borrow Area A2	8,000	on going
Borrow Area A3	29,000	on going

1 Reclamation underway; not included in reclamation cost estimate, Appendix D.

6.3.1 Borrow Areas

To date only Borrow Area A has been disturbed. There is currently no timeframe to develop any other borrow area.

Once borrow areas are no longer required, they will be reclaimed. Borrow pits are exclusively on eskers or kame deltas and overburden is granular, thus not presenting surfaces easily eroded by wind. However, any steep micro-slopes will be subject to water erosion during the summer. Removal of esker surface material will increase the depth affected by freeze-thaw. As

well, there is a potential to expose ice-rich overburden, which could result in further melting and slumping; geotechnical investigations by Bruce Geotechnical (1996) suggest limited existence of ice lenses in areas proposed for extraction. This in turn may lead to additional potential for erosion. During active use, esker borrow areas will be managed so as to minimize any potential for water erosion. Once areas are no longer active, steep slopes will be regraded to the angle of repose or 3:1, as appropriate, and revegetated as indicated by reclamation trials.

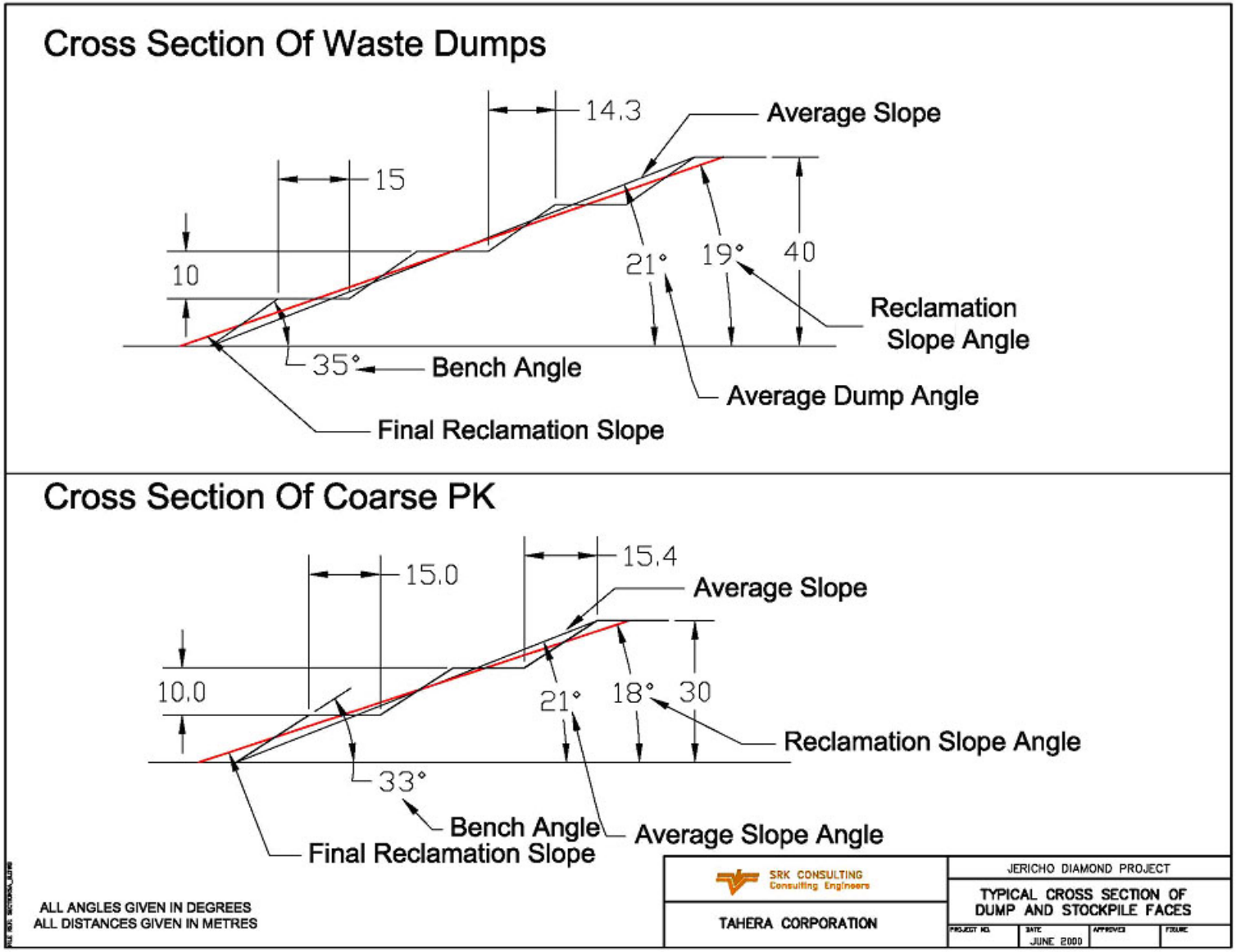
6.3.2 Waste Rock Dumps

Waste rock dumps will remain active until the end of open pit mining. Open pit mine equipment on site for mining will be used for reclaiming the dumps. Dumps will be constructed in step-back lifts; final regrading of slopes will be to attain an average slope of approximately 19° by pushing material down onto benches. Top surfaces will be compacted from traffic use and will be ripped or scarified to loosen the surface and provide microhabitat for plants. Dumps are expected to be dry microhabitats and inimical to plant growth. If revegetation trials indicate the potential for successful revegetation of the dump tops, salvaged top dressing material will be placed on the top or flat surface of the dump to a depth of up to 0.3 m. This top dressed material will be fertilized and seeded as indicated by reclamation trials. Consideration will be given to placement of boulders on the dump top surfaces to provide perches for raptors. Ramps will be built into lifts to allow safe caribou transit across the dump slopes.

Portions of the dumps that remain active throughout the mine life will be reclaimed at closure in the manner indicated above. The side slopes will be left in a stable condition not subject to water or wind erosion, but will not be revegetated. Slopes will be coarse rock to retard water and wind erosion. Both moisture content and the probability of successful revegetation on these slopes will be very low. Organic overburden will be scarce, making their use in areas with a low probability of successful revegetation unwise. Any planting will take place in the spring or fall so as not to moisture stress seedlings during summer months.

Figure 6.1 illustrates reclamation regrading concepts for dumps.

Figure 6-1: Cross Section of Dumps and Coarse PK Stockpile



6.3.3 Open Pit

The open pit will remain for a number of years as a large opening in the ground. To prevent accidental entry or fall into the pit by animals such as caribou, or by people that may visit the site after closure, a rock berm will be placed around the lip of the pit. The rock berm will be built of rock mined from the open pit after it is pushed back to its final position. Waste rock from the mine will be directly dumped in place and dozed into a berm. The berm will remain unfinished at the access road point until pit closure. A swale will be placed at the location in the berm where the natural channel of Stream C1 would exit once the pit fills. There are a number of options for managing pit water on closure that have been considered and these are discussed in Section 6.4.3.4. The present plan, subject to change pending on results of monitoring after closure, is for a channel to direct pit water, once it fills, back into the Stream C1 channel if water quality is acceptable or away from the lower Stream C1 channel to the east where the water will enter Carat Lake either with or without in pit treatment. In pit treatment is discussed by John Chapman in a memorandum to SRK (Appendix C).

6.3.4 Ore Stockpiles

The ore stockpile area will be completely processed at the end of Year 8. Following processing the pad will be reclaimed by scarifying and grading down the perimeter as required. Top dressing the margins with overburden will be undertaken, if reclamation trials indicate probable success.

6.3.5 Access Roads

Access roads are anticipated to be required throughout the mine life. Should access roads no longer be required, these roads will be reclaimed during the mine life before closure. The road surface will be scarified, or ripped, and the surface revegetated as indicated from reclamation trials.

6.3.6 Monitoring of Progressive Reclamation

Monitoring of revegetation will be dependent on the reclamation research carried out during mine operations. Monitoring frequency will be annual. An outline of possible revegetation initiatives was presented in Section 4.

Monitoring of chemical and physical stability will be identical to monitoring programs for active mine components until final mine closure. Final reclamation is discussed in the following section.

6.4 Final Reclamation

6.4.1 Schedule of Studies Required for Closure

A number of studies have been identified that are required to finalize decisions regarding final closure of some of the facilities at Jericho. Table 6-2 provides a list of those known at the time of writing of this update report.

Table 6-2: Studies Required Before Final Closure

Item	Study/Data Required	Mining Years
Pit in-fill time after closure estimate	Water balance	Until the waste rock dump is developed to its final extent and freeze back is complete, all estimates are approximations. Improvements in the initial estimation can be made but will remain approximations until after completion of the waste rock dump. A minimum of 3 years water balance calculations commencing the 1st operating year (2006) will be collected before a re-estimate of pit filling time is attempted
Revegetation of mining units	Vegetation trials on target units	As soon after commencement of mining as possible and on going until closure
Treatment of PKCA supernatant water for discharge on closure	Water quality data throughout mine life to determine trends	Should trends in water quality indicate discharge on closure may be problematic, at least one year prior to closure testing of PKCA supernatant water will be undertaken with the goal of selecting a treatment system that will treat the water to Water Licence objectives.
Need for water collection Pond A	Runoff patterns from the waste rock dump	Commencement of mining until the fall before the waste rock dump reaches the area where runoff could drain to Carat Lake
Need for alternate pit overflow discharge than Stream C1	Water quality in the refilling pit	Post closure through the number of years required to establish trends
Causeway reclamation	Recycling of construction rock as fish habitat	One year prior to closure, discussions with DFO
Finalize estimation of volume of demolition waste	Not applicable	Prior to closure once open pit-related facilities are demobilized

6.4.2 Waste Rock Dumps

6.4.2.1 Reclamation

Dumps that remain active throughout the mine life will be reclaimed at closure in the manner indicated in Section 6.3.2. The tops of the dumps may be revegetated. The side slopes will be left in a stable condition not subject to water or wind erosion, but will not be revegetated. The principal reasons for this are:

- the impracticality of making granular mineral overburden remain in place on angle of repose rock slopes;
- the low probability of successful revegetation on these slopes considering the high probability of very low moisture content; and
- the probable scarcity of overburden available for top dressing, making its use in areas with a low probability of successful revegetation unwise.

6.4.2.2 Long-term Stability

The final angle on the waste rock dumps will be an average 19°, slightly more than half the angle of repose of 33°. Stability of the dumps during operations will be monitored by an independent geotechnical engineer annually as required by the water licence; monitoring will continue as required after closure until the water licence is cancelled. Any modifications of dump configurations suggested from monitoring results will be implemented during the life of the mine.

6.4.2.3 Alternatives and Contingencies

Alternatives for cover and soil amendments for the tops of the waste dumps will be assessed in light of vegetation trials. Should revegetation not prove practical, due to low survival of plants in test plots, the tops of the dumps will not be dressed with wind or water erosion prone soils, rather the use of coarse run-of-mine rock in erosion prone areas will be evaluated.

6.4.3 Open Pit

6.4.3.1 Final Configuration

A plan of the expected ultimate pit configuration is presented in Figure 6.2.

A safety berm will be constructed beyond the ultimate crest of the till slope. The berm will be constructed with a steep outer face to discourage caribou entry, and a flatter inner face to allow any caribou to exit. The setback distance will be adjusted as necessary to allow snowmobiles and caribou that happen to cross over the berm sufficient time and space to stop before reaching the pit edge. As required by the mine water licence, the lip of the ultimate pit will be graded and/or blasted down to a 5:1 angle for 10 m between the berm and the lip of the pit.

The final pit will have steep walls and a ramp road connecting the bottom and top of the pit. Walls will be entirely in bedrock. The pit will be allowed to flood on closure which will require a minimum of 20 years if all mine area drainage is directed to the pit. If pit water quality on filling is of adequate quality (assumed to be CCME), Stream C1 will be re-directed back into its natural channel.

Runoff, precipitation, and melt water will not exit the pit until it is filled. The pit will form a deep, relatively small lake. Some shallows will be present near the lip of the pit, especially where the access ramp enters and the mining 8 m mining catch bench that lies below the final pit water level. Once the pit is filled, water will flow out and into Carat Lake. Pit water quality estimates on closure were provided by SRK (2003) in Technical Memorandum F and re-examined taking into account probable partial freeze back in a subsequent memorandum (SRK 2004a, Appendix B).

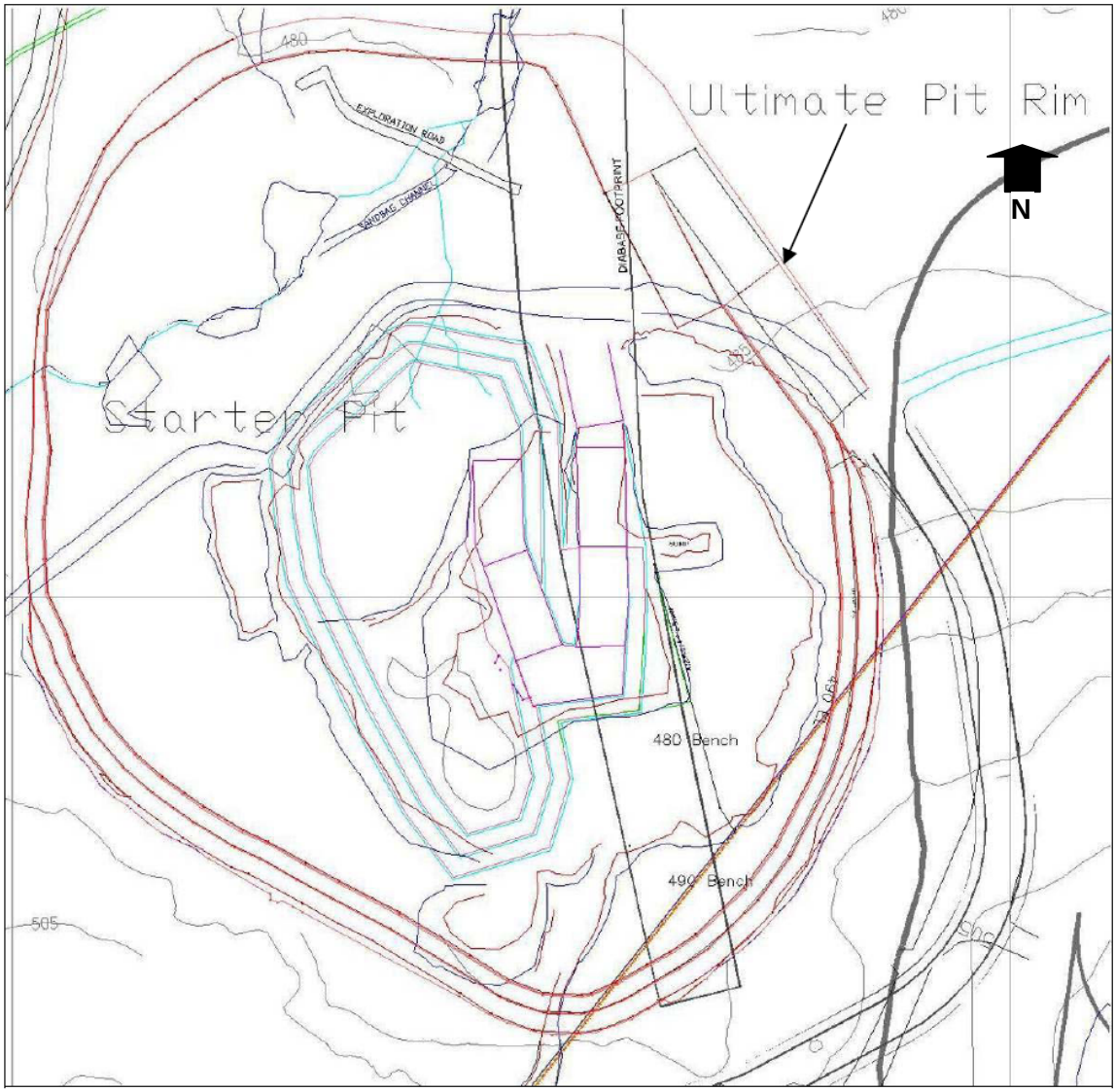
6.4.3.2 Alternatives and Contingencies

An alternative to allowing the pit to flood would be to backfill with waste rock. This alternative was examined and rejected on economic and practical grounds. Cost to backfill the pit would be approximately $2 per tonne; total cost $16 million plus mobilization / demobilization. Backfill could not occur until the end of mining. At that time much of the mass of waste rock dumps is expected to be infiltrated by permafrost. Any use of this rock would require re-blasting, which would further raise costs. Finally, because there would be void spaces in the backfilled rock, only about two thirds of the 13 million tonnes of waste rock could be backfilled into the pit without overtopping the pit rim. Any runoff water from the pit would require treatment for some years after pit backfill to reduce ammonia levels to acceptable discharge concentrations. This alternative approach to reclaiming the pit would make mining the deposit uneconomic and also increase, rather than decrease, environmental impacts.

6.4.3.3 Exploration Portal

The existing exploration portal is now within the planned ultimate pit and will cease to exist.

Figure 6-2: Jericho Ultimate Pit: Plan View



Source: Jericho Mine Plan October 2005. Grid interval is 500 m. Carat Lake is beyond the top of the figure.

6.4.3.4 Post-Closure Water Management

It is estimated that the pit will take over 20 years to fill, which should allow ample time for flushing and removal of any residual blasting residues from the dumps. Freeze back of the dumps is also expected to occur in the first few years following deposition, which will reduce the exposed surface area and therefore available loading from the rock. During this period, flows to Stream C1 will be maintained to ensure this area remains acceptable for fish habitat.

Current estimates of long-term water quality using the conservative assumptions discussed in SRK Technical Memorandum Q (SRK 2004a, Appendix B) indicate that the pit lake may not meet CCME guidelines for freshwater aquatic life. Monitoring of seepage and runoff during

operations and the post closure filling period will result in improved estimates of long term water quality.

If the updated estimates indicate the pit water will meet CCME guidelines for freshwater aquatic life or can be demonstrated to have negligible impacts on aquatic life, the pit will be allowed to spill into the original Stream C1 channel, and Stream C1 will be redirected into the pit. If the revised estimates indicate the pit will not meet CCME guidelines, but could be discharged without significant impacts to the shore of Carat Lake, it will be discharged via a constructed channel to the northeast of Stream C1. The location will be determined when the need is identified and in consultation with regulators. In the unlikely event that the pit water quality would be unacceptable for discharge, contingency measures such as in-pit biological treatment could be used to reduce concentrations to acceptable levels for discharge (SRK 2004b, Appendix C). Current estimates of post-closure concentrations in the pit discharges are presented in Table 6-3.

Tahera has 8 years during operation to establish expected end-pit water quality, and a minimum of 20 years following closure to work out appropriate mitigation before discharge to Carat Lake is required.

6.4.3.5 Long-term Stability

Post-closure, the slopes may ravel or degrade to a slope as flat as approximately 15°. The bedrock below the till will also ravel back over the very long term. This is common in all rock slopes, and is the reason why there is no requirement for long-term stabilization of pit slopes in most mine reclamation guidelines. During 2005, as a starter pit was excavated for construction material, Tahera was able to assess the performance of slopes that intersected the overburden. Observations from that period suggest that the slope performance will be similar to, or slightly better than, expected. Stability monitoring through the mine life will allow assessment this initial finding.

Prior to filling warning signs and the perimeter berm will serve to keep people and animals away from the pit lip. The pit wall will not be dissimilar to the nearby cliff tops of the Willingham Hills. Extensive surveys in the area during baseline wildlife studies failed to reveal any evidence of animals falling accidentally.

Table 6-3: Post-Closure Estimates of Pit Water Quality

Discharge Scenario	TDS mg/L	TSS	Alk	Ca	Cl	K	Mg	Na	SO4	TAl* mg/L
Discharge from Pit Lake without Stream C1 1	372	2	16	38	161	13	62	8	70	0.15
Long-term Discharge from Pit Lake with Stream C1 2redirected to pit.	231	2	14	24	96	8	37	5	42	0.13
CCME Aquatic Life Guidelines	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*0.1*
Health Canada Guidelines	*500*	*na*	*na*	*na*	*250*	*na*	*na*	*na*	*500*	*0.1*
Carat Lake Baseline Data	*11*	*1.4*	*4.7*	*2.3*	*3.4*	*2.0*	*0.8*	*2.0*	*1.2*	*0.052*

Discharge Scenario	TAs mg/L	TCd mg/L	TCr mg/L	TCu mg/L	TFe* mg/L	TMo mg/L	TNi mg/L	TPb mg/L	TU mg/L	TZn mg/L
Discharge from Pit Lake without Stream C1 1	0.0005	0.0003	0.0017	0.009	0.20	0.032	0.015	0.0020	0.063	0.006
Long-term Discharge from Pit Lake with Stream C1 2redirected to pit.	0.0004	0.0002	0.0012	0.007	0.24	0.019	0.009	0.0013	0.038	0.004
CCME Aquatic Life Guidelines	*0.005*	*1.7E-05*	*0.0089*	*0.002*	*0.3*	*0.073*	*0.025*	*0.001*	*na*	*0.03*
Health Canada Guidelines	*0.025*	*0.005*	*0.05*	*1.0*	*0.3*	*na*	*na*	*0.01*	*0.02*	*5*
Carat Lake Baseline Data	*0.00016*	*0.00005*	*0.0025*	*0.0020*	*0.025*	*0.00005*	*0.0005*	*0.00005*	*0.00020*	*0.0020*

Notes:

Assumptions and Calculations are provided in SRK (2004a)

1Assumes all sources of water entering the pit have reached post-closure water quality by the start of filling
2Reflects mixed water quality in the pit in the long term, once steady-state mixing has been reached (approximately 30 years after pit is filled)

6.4.4 PKCA

6.4.4.1 Reclamation

During operation, the PKCA will be progressively filled from east to west (Site Water Management Plan, Tahera 2005). As areas are filled to design height, they will be covered by a 0.3 to 0.5 m layer of coarse kimberlite to act as a filter for runoff and to improve drainage characteristics of the cap. Coarse kimberlite will be taken from the stockpile for reclamation. The plant front end loader and dump trucks will be used for this operation. Once the coarse kimberlite buffer is placed, one of three scenarios will follow:

1. If vegetation trials indicate vegetation can be successfully established on the coarse kimberlite, finished areas will be revegetated. Ekati has had some success at planting directly onto dried fine kimberlite in the mine's PKCA and, pursuant to further favourable results, PKCA beaches at Jericho will be treated the same way, i.e., by direct planting on the dry beaches. There is some question about the long-term suitability of PK as a growth medium.
2. If vegetation trials indicate overburden promotes successful revegetation, areas will be top dressed with up to 0.3 m of overburden from the overburden stockpile. This will occur in either winter or summer, depending on the driving conditions on the cell. Reclamation costing (Appendix D) conservatively assumes both coarse PK and overburden will be placed on the PKCA at closure.
3. If vegetation cannot be demonstrated to establish successfully, PKCA finished areas will be covered with coarse kimberlite and run-of-mine rock to retard erosion and to provide perching areas for rodents and birds.
4. Revegetation, as indicated from reclamation trials, will take place either in the spring or fall, depending on timing of completion of the overburden placement. Organic overburden will be retained for reclamation of the PKCA as this facility has the best chance of successful revegetation. The proposed facility will occupy a shallow valley, where water naturally collects (a lake and meadows presently occupy the site) and therefore, with the proposed impermeable east and west embankments, can be expected to provide a moist microhabitat for plant growth after closure.

6.4.4.2 Long Term Stability

Long-term stability for the dams and impoundment requires different considerations. Stability after closure will be monitored throughout the closure and post closure period by mine staff and independent geotechnical engineers as a requirement of the mine water licence.

Impoundment

Physical stability of the section of the impoundment containing fine PK will be achieved by placement of coarse PK and top dressing materials if revegetation trials indicate probable success or coarse PK and rock. Chemical stability post closure was discussed in detail in SRK Technical Memorandum P (SRK 2004) submitted to the NWB in support of water licence application. Water in the western end of the PKCA (see Appendix A, Drawing 2 for PKCA anticipated final configuration) is forecast to meet mine discharge criteria; monitoring during operations will provide additional evaluation information. Should the water not meet criteria, the water will be treated until criteria are consistently met.

Should trends in water quality indicate discharge on closure may be problematic, at least one year prior to closure testing of PKCA supernatant water will be undertaken with the goal of selecting a treatment system that will treat the water to Water Licence objectives.

Dams

Stability analyses were completed for all dams which indicated Canadian Dam Association (CDA) guidelines for factors of safety would be met. The performance of the dams will be monitored during operations to verify stability and any adjustments that are required will be made prior to closure. The dams will be inspected annually during operations and post closure by an independent geotechnical engineer until such time as the water licence is cancelled.

East, Southeast and North Dams

All these dams are relatively low structures (maximum 8 m for east and southeast dams and 3 m for the north dam) that will not have water against their upstream faces at closure.

Design details for the east and southeast dams can be found in EBA Engineering (EBA) design reports (EBA 2005 a, b). Preliminary design details for the north dam can be found in SRK (2004d).

Divider Dykes

Design details for the divider dykes can be found in EBA design reports (EBA 2005c, d). The divider dykes on closure will have PK fines and no free water against the upstream face (Divider Dyke B) and both faces (Divider Dyke A). The divider dykes will be inspected post closure by an independent geotechnical engineer until such time as the water licence is cancelled.

A small amount of pore water may be expelled by the freezing process but will have negligible effect on the much larger volume of water in the downstream pond (SRK 2004).

West Dam

Design details for the west dam can be found in EBA 2005 e, f). The west dam is designed to hold water against the upstream face. Long-term thermal and dam stability monitoring will be instituted as part of PKCA operation as recommended by EBA (2005e).

Closure preparation of the west dam is discussed in SRK 2004d and closure procedures will be included in the PKCA Management Plan required by the water licence. At closure, ponded supernatant water will be pumped to Stream C3 if water meets discharge criteria or treated as indicated from operational experience prior to closure to meet these criteria. In order to minimize long-term stability risks, the dam will be breached; the final discharge elevation will be determined as part of final closure planning. The west dam will, therefore, no longer perform or

be classified as a dam. The discharge elevation will set so that fine PK in the upstream pond does not wash out through the discharge. Natural discharge from the basin is expected to be restored with these measures.

Figure 6-3, from EBA, provides a conceptual closure spillway located at the north abutment of the West Dam.

6.4.4.3 Alternatives and Contingencies

Alternatives and contingences considered for closure include final disposal of PKCA pond water and methods of breaching the West Dam. No alternatives to recontouring dams were considered.

- Should PKCA pond water not meet Water Licence discharge criteria on closure and no reasonable expectation that water will meet these criteria, water will be pumped to the open pit.

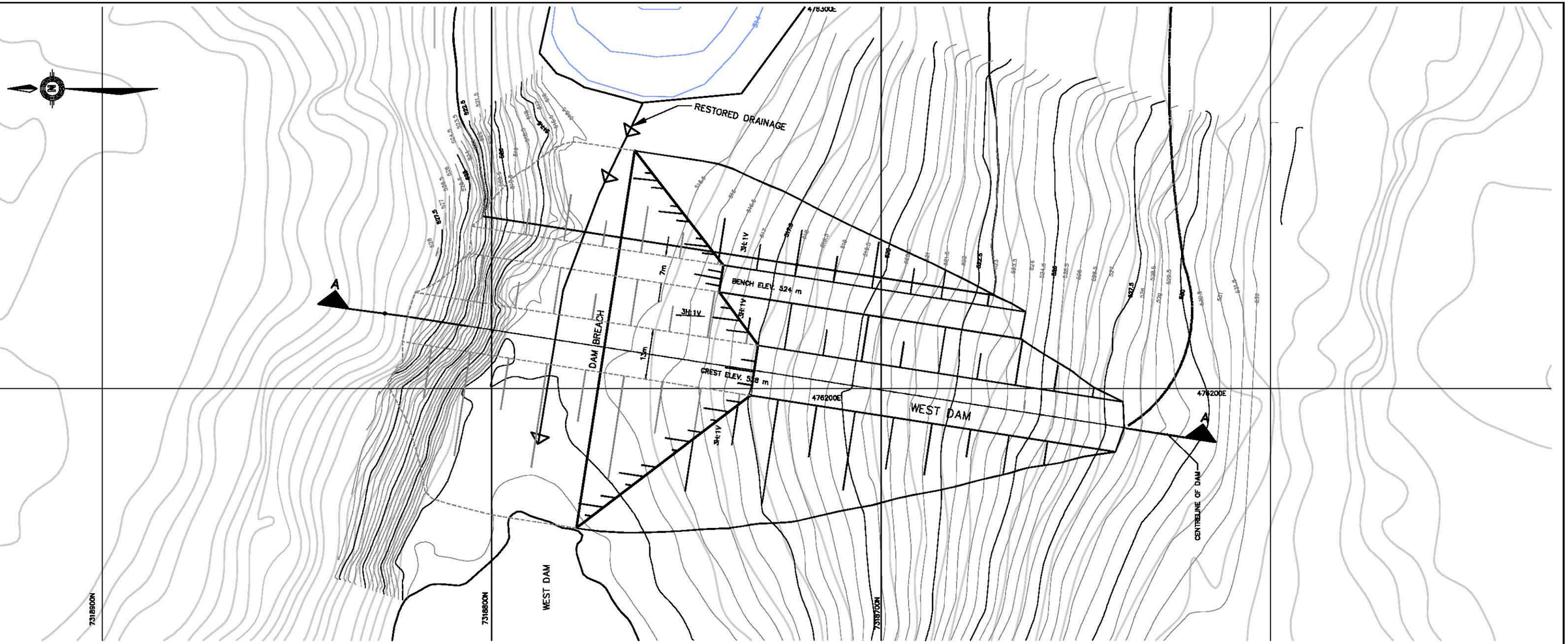
- If nutrient addition, as envisaged as possible treatment for the open pit on filling, promises to bring PKCA pond water to discharge criteria, this treatment will be applied. Should the treatment not be effective, water will then be pumped to the pit. If treatment is effective, water will be pumped from the PKCA pond to the West Pond and from there flow to Lake C3.

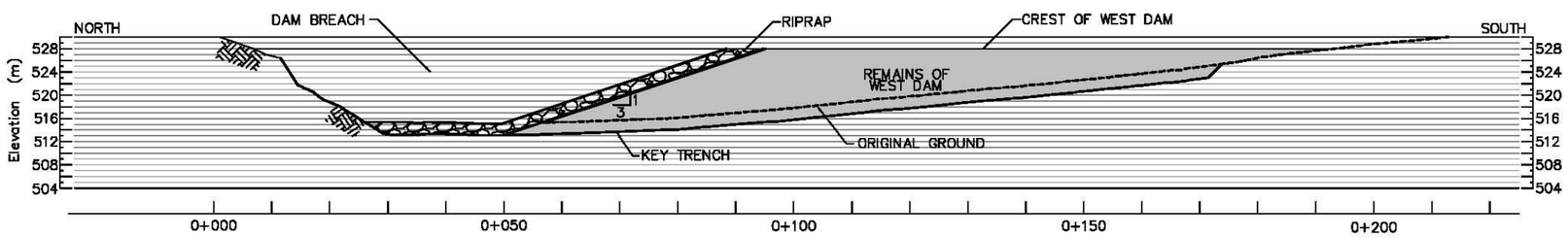
- Alternatives to breaching the West Dam that will be considered include the proposed conceptual spillway or breaching the dam approximately in the centre after water is pumped from the PKCA pond, and rock armouring the breach with clean, non-acid-generating run-of-mine rock.

6.4.5 Coarse Kimberlite and Recover Circuit Rejects Stockpiles

6.4.5.1 Final Configuration

As shown in Appendix A, Drawing 2, the current mine plan calls for separation of coarse PK into three stockpiles. This configuration was chosen to allow for better environmental control of the coarse PK, particularly of recovery plant rejects which will be stockpiled immediately south of the PKCA east end. Management of coarse PK is discussed in detail in the Jericho Waste Rock Management Plan, Part 2 (SRK 2006). The remainder of the coarse kimberlite and recovery plant reject stockpiles not used for reclamation will be sloped to approximately 18°, as shown in Figure 6-1, and covered with up to 0.3 m of overburden to prevent dust generation from fines should dusting become problematic (not expected since coarse rejects are thoroughly washed in the processing plant). A small amount of runoff may occur in the spring when the stockpile surface is frozen. A shallow ditch will be constructed on the down slope side of the stockpile to retard export of sediment overland in the initial years after reclamation and prior to surface consolidation. Monitoring will continue at the site through this time allowing sediment removal from ditches if required.





SECTION A – A

0 50
Scale: 1: 1000 (metres)

CLIENT
Tahera Diamond Corporation

Jericho Project - Closure

Jericho PKCA at Closure
West Dam Breach

EBA Engineering Consultants Ltd.

PROJECT NO./FILE NO.	DWN	CKD	REV
110060.004 110060004T02b.dwg	TK	WTH	1
OFFICE: EBA-EDM	DATE: March, 2007		

Figure 6-3

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