

**TECHNICAL REVIEW OF THE
DIAVIK DIAMOND MINE
2010 INTERIM CLOSURE AND RECLAMATION PLAN
Version 3.1**

Prepared for:
Environmental Monitoring Advisory Board
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SUMMARY

Diavik Diamond Mine Incorporated (DDMI) has prepared an updated Interim Closure and Reclamation Plan (Version 3.1, ICRP). Overall, the ICRP is well prepared and thorough with extensive supporting documentation. The ICRP addresses essentially all regulatory requirements. The ICRP has addressed many issues raised in previous reviews.

The ICRP is still quite conceptual in nature with detailed plans to be provided by 2015. The main concerns from this review are as follows:

- 1) It is unknown how water from the flooded mine water and ground water will effect pit water quality and mixing characteristics in future and whether these effects are important to aquatic life in the pit.
- 2) Monitoring of seepage from large scales test piles suggests that contaminated seepage is possible from the waste rock piles. This indicates there may be a need for long term treatment and this aspect has not been considered by DDMI (other than as a contingency measure and no provisions for treatment are provided in the cost estimate).
- 3) DDMI has not considered vegetation of waste piles or the tailings pond but has assumed these will naturally revegetate. DDMI should defend this decision. At this point it appears to be simply a method for reducing closure costs.
- 4) The closure cost estimate has not addressed all items in the ICRP. These include allowances for relocation of the till pile, vegetation of the site and allowances for long term treatment. These items could significantly increase the closure cost estimate.

By far the issue with the greatest uncertainty is item 2 above, the need for long term treatment of the seepage from the waste piles. The current piles are very large and absorbing rainfall producing little to no seepage. In contrast, the small test piles of waste rock have saturated and produce seepage. This seepage has an acidic pH and elevated levels of metals. Should these test piles be indicative of the future drainage at the large scale waste dumps, then long term treatment of these piles will be required.

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1.0 INTRODUCTION

1.1 OVERVIEW

Diavik Diamond Mine Incorporated (DDMI) has submitted a Revised Interim Closure and Reclamation Plan -Version 3.1 (ICRP). This Plan provides an update of the proposed closure works and is a revision and update of Version 3.0 submitted in 2009. Version 1 was prepared in 2001 as part of the EIS documentation and version 2 was prepared in 2006. The Plan content and format are similar to the previous plans but provides new information on closure plan criteria, project changes and updated research plans.

The version 3.1 report remains preliminary in nature and contains no detailed or design information on the closure works. Many key decisions on closure methods have been deferred pending further study and it is understood a detailed plan will be prepared in 2015. This is not unexpected as the mine is early in its life with closure not anticipated until about 2023.

There have been no major changes to the closure concepts since Version 3.0. Version 3.0 contained material changes to the closure concepts for the Processed Kimberlite Containment (PKC) facility and the waste rock piles. The revised Plan includes many editorial changes, information on community engagement, a revised closure cost estimate and changes to closure objectives and criteria.

Overall the Plan is well prepared and DDMI has made a serious commitment to address weaknesses and concerns raised in previous versions of the report. For the most part, we would support the concepts prepared but have several residual concerns which DDMI will need to address. These concerns are addressed in the following sections.

1.2 TERMS OF REFERENCE

As defined in the EMAB Terms of Reference, the tasks to be completed for the review of the ICRP are as follows:

- Task 1 – Conduct a Technical Review of the Revised ICRP
- Task 2 – Provide comments to EMAB using the WLWB comment format
- Task 3 – Provide a Plain Language Summary of the review to EMAB
- Task 4 – Participate in a conference call with the EMAB Board to present the findings

This report and the attached excel sheet address Tasks 1 to 3 above.

1.2 REGULATORY BACKGROUND INFORMATION

Section 1.2.1 is copied from the SENES 2009 peer review report of Version 3.0 and is included as background information. Section 1.2.2 is also copied from SENES 2009 with minor edits as appropriate.

1.2.1 Environmental Agreement

As part of the Environmental Agreement of March 8, 2000 between the Government of Canada (represented by the Minister of Indian Affairs and Northern Development), the Government of the Northwest Territories (represented by the Minister of Resources, Wildlife and Economic Development, now Environment and Natural Resources), DDMI, Tłı̨chǫ Government, the Lutsel K'e Dene Band, the Yellowknives Dene First Nation, the North Slave Métis Alliance, and the Kitikmeot Inuit Association, DDMI is required to undertake environmental management of the Project through the implementation of Environmental Management Plans. The Environmental Management Plans shall, where applicable, include the following specific and comprehensive plans designed as part of a program of adaptive environmental management: (a) Waste Management Plan; (b) Water Management Plan; (c) Hazardous Materials Management Plan; (d) Blasting/Explosives Management Plan; (e) Quarry Management Plan; (f) Emergency Response Plan; (g) Processed Kimberlite Containment Management Plan; (h) Country Rock and Till Storage Management Plan; (i) Dredged Lakebed Sediment Management Plan; (j) Reclamation and Abandonment Plan(s) (including Initial, Interim and Final Plans); (k) Biotite Schist Management Plan; (l) Exploration Environmental Management Plan; (m) Traffic Management Procedures; (n) Fish Habitat Management Plan; (o) Construction Area and Activity Management Plan; (p) Operations Area and Activity Management Plan; and (q) Wildlife Management Related Extracts from above noted plans.

The Environmental Management Plans shall include the mitigation measures outlined in DDMI's Commitments and in the conclusions of the Responsible Authorities documented in the Comprehensive Study Report. DDMI shall adapt or revise these mitigation measures in accordance with the principles of adaptive environmental management.

DDMI shall, in the development and implementation of Environmental Plans and Programs include, where appropriate, the following: (a) quality control and assurance programs; (b) environmental awareness training for employees and contractors; (c) regular briefings on environmental matters to on-site supervisors; and (d) detailed adaptive environmental mitigation measures.

Overall, the ICRP is consistent with the environmental agreement.

1.2.2 Water Licence

The water licence for the Diavik Diamond Mine (N7L2-1645) sets out numerous conditions with respect to the taking of water and the depositing of waste of any Type in any waters. Specifically, Part L sets out conditions applying to abandonment and restoration. Appendix XII of Volume 3 of the report provides DDMI's table of conformance with respect to the licence conditions. DDMI has addressed all licence conditions however, the responses are not necessarily fully compliant. The following are areas which may require additional input and discussion. The licence condition and our comments are provided below.

Condition 1c) *a detailed description, including maps and other visual representations, of the pre-disturbance conditions for each site, accompanied by a detailed description of the proposed final landscape, with emphasis on the restoration of surface drainage over the restored units;*

DDMI has provided descriptions and visual representations but they are not very helpful. For the waste rock piles, there are no sections showing the height, proposed closure slopes, cover concepts, etc. Similarly a section through the closed PKC facility with details regarding the cover would have better described the final concept and cover plans. We understand these are concepts but these high elevation plans do little to help the reader understand what is proposed.

Condition 1d) *a comprehensive assessment of materials suitability, including geochemical and physical characterization, and schedule of availability for restoration needs, with attention to top-dressing materials, including maps where appropriate, showing sources and stockpile locations of all reclamation construction materials;*

DDMI provides an inventory of cover materials (waste rock and till) and show locations. What is uncertain is what quantities of materials are needed for cover and vegetation and whether adequate quantities of these materials are available. In the previous plans (Version 1 and 2), much of the material for closure was to come from the development of the A21 open pit which contained large quantities of Type I rock. It is important that DDMI provide minimum and maximum estimates of cover requirements for all areas and a discussion as to the source of these cover materials. For example for the plant and mine site areas, if till is used in the cover and for vegetation, how much till is required.

Condition 1e) *a description of the procedure to be employed for progressive reclamation, including details of restoration scheduling and procedures for co-ordinating restoration activities within the overall mining sequence and materials balance;*

There is minimal progressive reclamation proposed for the site but DDMI has addressed progressive closure tasks in the report.

Condition 1h) *an evaluation of the potential to re-vegetate disturbed sites that includes the identification of criteria to be used to determine technical feasibility and alternative restoration options;*

DDMI has a research plan for vegetation but the plan does not appear to address the requirements for the vegetation of waste rock. In previous plans there was some indication that portions of the waste rock would be till covered and vegetated (islands). Version 3.1 specifically states that the waste rock piles and PKC facility are not candidates for vegetation.

Condition 2) *The Licensee shall annually submit to the Board, an updated estimate of the anticipated mine restoration liability, utilizing the current version of RECLAIM, or another method acceptable to the Board. This estimate shall include the expected liability at the end of the upcoming year.*

DDMI has included a revised estimate.

1.2.3 Deficiencies in the 2009 ICRP

There were two deficiencies identified in the 2009 closure plan and many of these items have been identified in Appendix XII and addressed by DDMI. The following issues as presented in the appendix remain to be addressed:

Item 3) *Include a contingency plan for resloping of the waste rock and till piles.*

This plan has not been prepared. The resloping plan should also include input from a landscape specialist such that the final piles are more natural and better assimilate with the surroundings. Based upon our understanding the current plan is to leave the waste piles as is with steep slopes to encourage freezing. DDMI indicated that they had responded to this in section 5.2.2.9 of Version 3.0 but we can find no reference in this section.

Items 4, 5, 6- *North Inlet sediment issues*

DDMI has undertaken a preliminary investigation of the suitability of the sediments as fish habitat and some additional study is proposed.

There was also a request to investigate alternative disposal methods for the treatment sludge and this was provided in Version 3.1.

2.0 INTERIM CLOSURE AND RECLAMATION PLAN REVIEW (Version 3.1)

2.1 GENERAL OVERVIEW COMMENTS

DDMI has prepared an updated ICRP for the Diavik mine site. The Plan includes an extensive data file and for the most part provides the type of information one would expect to be included in such a plan. The Plan is well done and thorough although there are areas where we believe technical issues remain. This is not unexpected as research and development is ongoing and many key decisions on the final closure plan have not been made.

2.2 TECHNICAL REVIEW COMMENTS

The technical comments below include residual comments from the SENES 2005/2009 reviews that were not specifically or adequately addressed in the version 3.1 ICRP.

2.2.1 Underground Workings

The ICRP for the underground mine includes the cleaning up the mine (removal of equipment, explosives and hydrocarbons), flooding the workings, and sealing all openings to surface in accordance with NWT Mine Safety Regulations.

There are no fatal flaws or material deficiencies in the ICRP. The ICRP is reasonable but still does not address the issue of mine water discharge. The following questions remain to be addressed:

- 1) To what level will the mine flood and will there be a discharge to Lac de Gras or the surface? If so, how much water is expected? Where will it overflow and how would this be managed?
- 2) What is the predicted quality of the mine water (salinity, metals content, etc.)?
- 3) Is there a potential to contaminate ground waters?

2.2.2 Open Pit and Dyke Enclosures

The ICRP is to flood the pits and partially remove the dykes to allow for water circulation and navigation. Pre-flooding activities will include the development of fish spawning habitat on the inner dykes faces and shallow water areas to replace habitat lost through mine development.

In the previous review one of the primary issues raised was the potential to have the pit become meromictic (salty water at the bottom of the pit). This has been observed at other sites and can

result in a permanent condition of meromixis (a stagnant layer of water at the bottom of the pit that does not mix with the lake water above). It is known that there is saline ground water that enters the pit both from the pit walls and possibly from future mine discharge through the access ramps at the bottom of the pit. This salty water may develop into a meromictic layer that grows over time and could impact upon the future water quality and ecology of the pit. This could be exacerbated by the limited currents and depth of mixing as a result of the majority of the dykes being left in place.

In the 2009 plan, DDMI made the development of meromixis as a closure target for the pits. Although we concede this is a likely condition, it is certainly not a preferred condition. Under meromictic conditions, the bottom waters will be devoid of oxygen and not a suitable habitat for aquatic species. DDMI should investigate options to avoid this condition (initial mixing, more openings in the dykes, prevention of saline mine water discharges into the pit, etc.).

In Version 3.1 DDMI undertook some preliminary modelling of the flooded open pit to investigate how flooding methods may affect mixing of the waters in the pit. The model specifically assumes no ground water or mine water will enter the pit once flooded. As such, the primary issue of the addition of saline water to the pit at depth has not been considered.

2.2.4 Till Storage Area

The future of the till pile is uncertain. In Version 3.1, DDMI indicates it is expected there will be 3.65 Mt of till in the pile at closure. They also indicate that they expect to utilize all of the till in the reclamation work however there is no estimate of what till is required for closure works and there is no cost included for relocation of any till material or reclamation of the till storage area.

2.2.5 Country Rock Storage Areas

There are three types of rock placed in the waste piles: Type I clean rock; Type II low sulphur rock (0.01-0.04% S) that is not expected to produce contaminated drainage; and Type III reactive rock which has potential to leach metals and produce acidity.

The South Country Rock storage area is no longer required as pit A21 will not be dewatered and excavated.

The original plan for the North waste pile contains areas with Type I, Type II and Type III waste rock. The closure plan was to:

- flatten the slopes of all piles (typical best practice)
- apply 1.5 m of till and 3 m of Type I waste rock over the Type III waste rock
- apply 4 m of Type I rock over the Type II waste
- place islands of vegetation on the waste

- provide ramps and transport corridors for animals.

The current plan as understood is to:

- keep slopes steep (i.e. no flattening of the side slopes)
- apply 3 m of Type I rock over the exposed Type III rock
- no vegetation
- no cover on Type II rock
- no till layer over the Type III rock

The rationale for the changes is related in part to research findings but more to the fact that direct haul material for cover will not be available as Pit A21 will not be developed.

The justification for the steep sided slopes, lack of till barrier on Type III waste, lack of Type I cover on Type II waste, no replacement of vegetation lost by covering the surface with waste rock etc. is weak. The following comments are noted:

The elimination of cover on Type II rock is defended on the basis that water quality in the collection ponds has not been impacted and therefore it is concluded that contaminated drainage is unlikely. While this is certainly possible, the dumps are not likely to contribute any seepage for many years as the precipitation to date is insufficient to meet the water storage capacity of the dumps. Therefore little contaminated drainage would be expected even if the piles contained contaminated porewaters. The elimination of the till cover was included as there is a potential for the cover to delay freezing of the piles. Conversely if the cover is applied before the piles freeze, the till would insulate the piles. Whether or not the till is required is unknown at this time and as such, the precautionary principle would dictate the till should be included. The problem is that the till would have to be applied to shallower side slopes and this would need to occur before the Type I material from ongoing mining is depleted. Because of the timing of the waste rock production (ends in 2012) and the need to cover the Type III waste, DDMI is proceeding with the cover activities without regarding the piles and applying till and this will be essentially completed by 2012. Research to date suggests the piles will freeze back more quickly with steeper side slopes. Given the research on the piles and cover are not complete and answers are not definitive, it is difficult to justify such major changes to the plans. We understand these changes are in large part the result of the new mining plans for A21 which eliminate the potential for the future direct haul of cover materials.

Of greatest concern are the results from seepage monitoring of the large scale test piles. These piles have become saturated and are draining (full scale dumps will take many years to saturate and seep). Seepage quality is poor from the Type III waste and is on occasion even contaminated from the Type I waste. Although seepage quality is poor, DDMI continues to assume that seepage will not be an issue from the waste piles and that no form of treatment will be required in the long term and as such no provisions for long term collection and treatment are included in the cost estimate. Although this may prove in future to be the case, evidence suggests that seepage

quality is an issue and seepage management could well be required. Furthermore, the till covered pile also produced contaminated seepage. Till cover over Type III waste was proposed as a contingency measure to control contaminated seepage if seepage quality was an issue.

It is also possible that seepage chemistry could change well after the mine is decommissioned and the site effectively abandoned. DDMI assumes they will be able to stop monitoring about 7 years after closure of the site and this may well not be reasonable especially in lieu of the seepage monitoring data from the test piles.

DDMI does indicate that they propose to remove all ponds and replace them as required with settling basins or wetland areas. The cost estimate includes no provision for the construction or operation of these elements at closure.

2.2.6 Processed Kimberlite Containment Facility (PKC)

The PKC covers an area of about 152 ha and is contained by 2 main dams and 2 saddle dams. Coarse PK is placed around the perimeter with fine PK slurry pumped into the central portion of the impoundment. In the original concept, excess water was to be reclaimed for use in the process plant. The actual water balance shows much less reclaimed water is available from the PKC therefore alternative sources are required. The other key finding is that the PKC water quality was much better than expected and in fact met discharge criteria. The North Inlet is now the process water supply which means the PKC facility no longer needs to retain large quantities of water.

In the original plan, because the PKC is a potential source of contaminated drainage, the plan was to apply a cover. Prior to formal covering, a layer of coarse PK and waste rock would be used to shape the surface to allow for a concave shape. This layer would also provide storage for porewater displaced from the fine PK as it consolidated. The cover design proposed included a 0.5 m cover of till followed by a 3m layer of Type I rock thermal barrier. The objective was to allow the pile to freeze to provide a permanently frozen stable pile. The original plan also provided for the coarse PK to be progressively reclaimed while the fine PK beaches will be reclaimed only once the mine is closed.

With the changes in the water balance it was now possible to operate the PKC in a much drier state (no large surface pond). With this option, it was hoped to minimize ice lenses and improve the consolidation of the slimes during operations. The current plan calls for development of a concave surface at closure with a shallow covering of waste rock. There would be surface water discharge from the facility through a porous rock drain. This drain would be monitored and managed in the short term if discharge criteria would not be met. Linear trails for caribou access would be provided. DDMI propose not to vegetate the surface so as not to be an attractant to wildlife but indicate that the area is expected to naturally vegetate over time.

The plan as proposed is reasonable. Issues remain with the development of ice lenses and we are uncertain how the new plan will minimize these. At other sites in the North, flooding is the primary method used to minimize freezing and with no pond on surface one would expect more water to freeze within the slime tailings.

We do not understand the justification for not vegetating the surface. This is standard best practice and should be adopted unless specifically not desired by the local communities. DDMI's rationale for not vegetating is to avoid attracting animals to the area yet they also indicate that the area will naturally revegetate over the longer term. If attracting animals in the short term is an issue then it is also a problem in the long term and should be controlled. If it is not a problem, then the area should be vegetated.

2.2.7 North Inlet

The proposed closure plan is to breach the dam at the North Inlet and reconnect the inlet with Lac de Gras. DDMI is collecting additional data to confirm that this plan is acceptable and have investigated alternatives. The concern is the bottom of the North Inlet will contain upwards of 2 m of dilute alum sludge.

2.2.8 Process Plant and Infrastructure

There are no material issues with the proposed plan. The plan is simply to remove the infrastructure, grade the surface and apply a cover of Type I waste rock to create a bolder field and partially vegetated terrain. The concern is there is no commitment to vegetate the disturbed area and furthermore no allowances for vegetation are included in the closure plan estimate.

2.2.9 Cost Estimate

DDMI has prepared a cost estimate for closure. The closure estimate is based upon the RECLAIM model framework and addresses the commitment to update the estimate. The following items are deficient and would materially add to the costs.

- i) There is no provision for vegetation of any area of the mine site. This could add several million dollars to the closure costs.
- ii) There is no provision for relocation of 3.65 Mt of till from the till stockpile while DDMI indicates that all material will be used. This could readily add \$10 to \$15 million (at \$5-7/m³).
- iii) There is no provision in the costs for settling ponds or wetlands at the site of existing ponds but these are proposed in the closure activity tables. Cost for these works is unknown.

- iv) There is no provision for long term collection and treatment of seepage from the site. Indications from the large scale field test piles are that seepage may be contaminated and may require treatment. Provision of infrastructure for active treatment will be a material cost and could add more than \$10 million to the closure estimate.
- v) There is no provision for shaping of the waste piles to create more natural landscapes. The plan calls for rounding the edges of the pile.

2.3 OTHER DEFICIENCIES

There are a number of deficiencies in the closure plan, many of which have been identified in the previous review comments. The following are items which we have also identified as deficiencies.

2.3.1 Vegetation Plans

As discussed, DDMI has essentially deferred any decisions on the vegetation of disturbed areas to the future. There are few commitments and it is uncertain whether there is any commitment to restore vegetation to the site. DDMI should be required to make some definitive commitments and statements as to their proposed plans. Costing of future programs cannot be completed without this information and it is clear from the cost estimate that DDMI has included no provisions for vegetation of any portion of the site.

At this point DDMI needs to provide some form of justification for not vegetating the waste dumps and tailings facility. Not vegetating reduces closure costs but needs to be rationalized.

3.0 CONCLUSIONS

This review has identified no fatal flaws in the ICRP. The technical review has identified a number of issues that should be addressed in the updated plan. A summary of the key findings is provided below:

- 1) There is no contingency plan for resloping the till and waste rock piles.
- 2) No information was provided as to what level mine will flood or whether there will be a discharge to Lac de Gras, the flooded pit or the land surface. How much water is expected? Where will it overflow and how would this be managed?
- 3) No information is provided on the predicted quality of the mine water (salinity, metals content, etc.)
- 4) DDMI should investigate options to avoid the development of meromixis in the flooded pits. This analysis should consider the impact of minewater and groundwater inflow into the pit after flooding.

- 5) DDMI needs to better defend why i) Type I cover is not required for Type II waste, ii) till cover is no longer required for Type III waste, iii) side slopes will remain steepened, and iv) there are no plans for vegetation of waste rock.
- 6) DDMI needs to explain why the PKC facility will not be vegetated. This is standard practice at most sites. The plan assumes the site will naturally revegetate.
- 7) A mine site wide vegetation program needs to be developed with specific delineation of areas that will be vegetated.
- 8) DDMI needs to clarify what will happen with the till pile.
- 9) DDMI needs to include provisions in the cost estimate for:
 - vegetation of the infrastructure areas
 - relocation of the till pile and use in reclamation
 - construction of settling pond and wetland areas per the closure activities tables
 - implementation of long term treatment
 - grading and shaping the waste rock piles.

GENERAL INSTRUCTIONS FOR EXCEL TEMPLATE:

1. Do not leave blank rows above or between comments.
2. Do not modify the instructions or the column headings (i.e. the top three rows).
3. **Each comment must have an associated recommendation.**
4. All formatting will be lost when this file is uploaded to the Online Comment Table.
5. If necessary, adjust the cell width and height in order to view all text.

<u>TOPIC</u>	<u>COMMENT</u>	<u>RECOMMENDATION</u>
<i>Be as specific as you think is appropriate; for example a section or page of the document, a recommendation #, general comment, etc.</i>	<i>Comments should contain all the information needed for the proponent and the Board to understand the rationale for the accompanying recommendation.</i>	<i>Recommendations can be for the proponent or for the Board. Recommendations should be as specific as possible, relating the issues raised in the "comment" column to an action that you believe is necessary.</i>
Lincence Condition 1d) a comprehensive assessment of materials suitability, including geochemical and physical characterization, and schedule of availability for restoration needs	DDMI provides an inventory of cover materials (waste rock and till) and show locations. What is uncertain is what quantities of materials are needed for cover and vegetation and whether adequate quantities of these materials are available	DDMI should estimate how much material will be required for all uses (e.g. cover, vegetation etc.).
DDMI was to include a contingency plan for resloping of the waste rock and till piles.	DDMI idicated this was provided in section 5.2.2.9 but we could not find the plan.	DDMI should provide the plan or location of the plan.
Issues related to mine flooding of the underground mine.	DDMI has not stated to what level the mine will flood and if there will be a discharge to Lac de Gras or the surface. If so, how much water is expected? Where will it overflow and how would this be managed? What is the predicted quality of the mine water (salinity, metals content, etc.)? Is there a potential to contaminate ground waters?	DDMI should address the issues related to the underground mine flooding.

<u>TOPIC</u>	<u>COMMENT</u>	<u>RECOMMENDATION</u>
Future of the till pile	DDMI indicates it is expected there will be 3.65 Mt of till in the pile at closure. They also indicate that they expect to utilize all of the till in the reclamation work however there is no estimate of what till is required for closure works and there is no cost included for relocation of any till material or reclamation of the till storage area.	DDMI should clarify the future use of the pile and include these provisions in the closure cost estimate.
Type II waste pile closure	DDMI has indicated that the Type II waste will not be covered.	DDMI needs to provide a basis for this decision.
Vegetation of waste piles	DDMI has stated that waste piles are not candidates for vegetation.	In the original Closure and Reclamation Plan, waste piles were to be in part vegetated. DDMI should justify why this is no longer being proposed.
Waste pile seepage	The large scale waste rock field piles are producing contaminated drainage yet DDMI have made no provisions in the closure plan for collection and treatment of this drainage.	DDMI needs to justify why they believe that contaminated drainage is not a long term issue for the mine site. Given that the field piles are producing acidity and metals, provision for treatment should be included in the the closure plan and cost estimate.
Collection ponds	DDMI has indicated that the ponds will be removed and settling basins/wetlands will be used in lieu of these ponds. There is no provision for construction/operation of these systems in the closure plan.	DDMI should include provisions for these basins in the closure estimate.
PKC closure surface	DDMI does not propose to vegetate the PKC facility at closure. It will be left with an exposed waste rock cover and allowed to vegetate naturally. Standard practice is vegetation of tailings ponds.	DDMI should explain why vegetation is not proposed for the PKC facility.
Vegetation of the site	There is no provision in the cost estimate for till placement or vegetation of any component in the closure plan estimate	DDMI needs to provide details of the proposed vegetation plans and include costs in the closure plan estimate.

<u>TOPIC</u>	<u>COMMENT</u>	<u>RECOMMENDATION</u>
Waste rock slopes and aesthetics	There is no provision for shaping of the waste piles to create more natural landscapes. The plan calls for rounding the edges of the pile. The cost estimate does not include any allowances for reshaping or grading the piles	DDMI should include allowances for reshaping the waste piles in the closure plan cost estimate.