September 15, 2016

Mr. David Wells
Superintendent – Environment
P.O. Box 2498, 300-5201, 50th Ave
Yellowknife, NT X1A 2P8

Dear Mr. Wells,

**DDMI’s Waste Rock Management Plan – Version 7**

The Wek’èezhii Land and Water Board met on August 30, 2016 to consider Version 7 of DDMI’s Waste Rock Management Plan (WRMP), which is required by Part H, Item 7 of Water Licence W2015L2-0001.

The Board did not approve WRMP Version 7, and requires DDMI to make the revisions in Table 1 of the attached Reasons for Decision, and submit WRMP Version 7.1 by November 16, 2016.

The Board does not accept most of DDMI’s proposed criteria for use of Type III rock, which are described on pages 13 and 14 of WRMP Version 7, but accepts certain uses/disposal locations, as outlined in the Reasons for Decision. If DDMI continues to believe that it requires criteria for uses/disposal of Type III rock, DDMI should attempt to refine the criteria to address the Board’s concerns related to inspection, the definition of “temporary”, record-keeping, and security. See Section 3.3 of the Reasons for Decision for more information about this issue.

The Board also does not accept DDMI’s proposed regulatory disclaimer, but acknowledges that some of the requirements in Schedule 6, Item 5 appear to be problematic for DDMI, and believes there may be a variety of possible solutions. The Board agrees with the company’s proposal to discuss the issue with Board staff and reviewers, and submit a proposed solution to the Board once it has done so.

Also, the Board believes it is necessary to initiate an amendment process for the Water Licence Schedule(s). This process will begin with an opportunity for DDMI to propose amendments to the Licence Schedule(s) related to the WRMP. DDMI should identify each Schedule requirement that is problematic, explain why it is problematic, and propose changes to the
Schedule by December 16, 2016. Board staff will then distribute the following for public review:

- Proposed amendments submitted by the company;
- Amendments that describe: a verification program; improved descriptions of monitoring; and an A21 characterization program; and
- As appropriate, other improvements to the Schedules.

The Board will consider the proposed amendments following the public review process. See Sections 3.2 and 3.4 of the Reasons for Decision for more information about this issue.

**Non-Compliance Issues**

At its August 30, 2016 meeting, the Board also considered non-compliance issues associated with DDMI’s waste rock management. The Board identified four key activities that DDMI conducted that put the company out of compliance with its Water Licence. For each non-compliance issue, the Board assessed the nature of the non-compliance, environmental considerations, and outstanding issues. The Board’s assessment is presented in Attachment #1 of the RFD.

As a result of its assessment, the Board requires DDMI to do the following:

1. DDMI must submit a closure cost estimate for the Type III rock in the CLR basin by October 16, 2016. This cost should address the maximum liability during the life of the mine.
2. DDMI cannot use the Type I rock that underlies Type III rock in the CLR basin as cover material unless it can demonstrate, through testing, that this material is suitable for use. This prohibition must be included in WRMP Version 7.1 (as identified in Table 1 of the Reasons for Decision).
3. By October 16, 2016, DDMI must submit to the Board a revised analysis of whether there were any environmental consequences related to the placement of Type III rock in the A21 dike. This analysis must account for the fact that the rock was not “fresh” and had been stored for some time before being used.

The reasons for these requirements are provided in the RFD.

Because of DDMI’s non-compliant activities, DDMI’s 2001 Design Report does not reflect the actual construction of the WRSA. However, the 2001 Design Report is not a management plan, and is not meant to be regularly updated. When a company wishes to deviate from a design, it should request a Modification, as outlined in the Water Licence, which DDMI did not do. However, the Waste Rock Storage Area is nearly complete, and a revised design report may not be the best way to address the design changes, and may create significant work for the company, the Board, and reviewers. This conclusion is unrelated to whether the Inspector might be assisted by a revised Design Report, since his roles and responsibilities are different from those of the Board.

It is, however, problematic that the Design Report on the public registry does not describe how the actual Waste Rock Storage Area was built, and would mislead future readers of the Design
Report. To remedy this, the Board has required DDMI to provide information about the differences between the design and actual construction in Version 7.1 of the Waste Rock Management Plan (see Table 1 of the Reasons for Decision). The Board will then ensure that the 2001 Design Report directs the reader to the latest Version of the Waste Rock Management Plan for information about how the Waste Rock Storage Area was actually built.

Finally, the Board is considering the possibility of requesting from the GNWT a regularly updated compliance record for DDMI. The compliance record could identify past non-compliance issues and any “unacceptable” ratings on Water Licence Inspection Reports. The Board could then post this record to the public registry. This would allow the Board, the Inspector, and all other parties to have complete and easily accessible information on DDMI’s compliance record. It would also allow all parties to identify any compliance trends over time. The Board is interested in hearing the views of the company and the GNWT on this matter; Board staff will initiate discussion.

The Board appreciates that DDMI appears to have made changes to better manage Water Licence compliance. For example the Board understands that DDMI recently has developed a tracking tool for Board requirements, obtained additional human resources to assist with Licence requirements, and will be increasing communication with the WLWB. The Board is of the view that this is a positive step forward.

Please see the Reasons for Decision for additional information regarding the Board’s decisions. Should you have any questions, please contact Ryan Fequet at rfequet@wlwb.ca or by phone at 867-765-4589.

Sincerely,

Mason Mantla
A/Chair, Wek’eezhii Land and Water Board

Copied: Diavik Distribution List
## Reasons for Decision

<table>
<thead>
<tr>
<th>Reference/File Number:</th>
<th>W2015L2-0001 (Type “A” Water Licence)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensee:</td>
<td>Diavik Diamond Mines (2012) Inc. (DDMI)</td>
</tr>
<tr>
<td>Subject:</td>
<td>Waste Rock Management Plan, Version 7</td>
</tr>
</tbody>
</table>

### Decision from the Wek’èezhìi Land and Water Board

**Meeting of August 30, 2016**

### 1.0 Decision

On August 30, 2016, the Wek’èezhìi Land and Water Board (the Board) met to consider DDMI’s [Waste Rock Management Plan Version 7](#) (WRMP) submitted on March 31, 2016 in accordance with Part H, Item 7 of Water Licence W2015L2-0001. The Board made the following decisions regarding the WRMP:

1. The Board did not approve WRMP Version 7, and requires DDMI to make the revisions in Table 1 and submit WRMP Version 7.1.
2. The Board does not accept the regulatory disclaimer in WRMP Version 7.
3. The Board supports use of Type III rock in the production of cemented rock fill (CRF) to be permanently placed in the underground (criterion ‘a’).
4. The Board does not accept proposed criterion ‘b’, but accepts the placement of Type III rock in the CLR basin of the Waste Rock Storage Area.
5. The Board does not accept proposed criterion ‘c’, but accepts the use of Type III rock in the PKC north dam (as previously approved).
6. The Board does not accept proposed criterion ‘d’.
7. The Board does not accept proposed criterion ‘e’.
8. The Board believes it is necessary to initiate an amendment process for the Licence Schedule(s), beginning with the opportunity for DDMI to propose amendments (as discussed in Sections 3.2 and 3.4).
9. DDMI must submit a closure cost estimate for the Type III rock in the CLR basin. This cost should address the maximum liability during the life of the mine.
10. DDMI cannot use the Type I rock that underlies Type III rock in the CLR basin as cover material unless it can demonstrate, through testing, that this material is suitable for use. This prohibition must be included in WRMP Version 7.1 (as identified in Table 1 of the Reasons for Decision).

11. DDMI must submit to the Board an analysis of whether there were any environmental consequences related to the placement of Type III rock in the A21 dike. This analysis must account for the fact that the rock was not “fresh” and had been stored for some time before being used.

2.0 Background

DDMI disposes waste rock from underground and open pits in its Waste Rock Storage Area (WRSA) and also uses waste rock on-site (e.g., in construction). Some of the rock is potentially acid-generating (PAG) and some is non-PAG. The PAG rock is associated with biotite schist.

During the environmental assessment for the Diavik mine, the regulatory authorities determined that “the potential acid rock drainage can be mitigated by implementing an on-site collection and treatment system and by developing plans for segregating and managing biotite schist, or by capping or other equivalent engineering technique.”

DDMI’s Water Licence (the initial Licence N7L2-1645 and subsequent renewals) required DDMI to submit a Waste Rock Storage Area Design Report and a Waste Rock Management Plan for approval. In accordance with Water Licence N7L2-1645, the company submitted a Waste Rock Storage Area Design Report (the “2001 Design Report”) in 2001. The 2001 Design Report addressed the environmental assessment findings, including segregation of rock, on-site collection and drainage system, and a plan to cover the PAG rock. A key feature of the design was to segregate the rock into three types, as shown in Figure 1. These types are:

- Type I rock – non-PAG
- Type II rock – intermediate, mixed rock with low acid generating potential
- Type III rock – PAG

---

1 See WLWB (www.wlwb.ca) Online Registry for Comprehensive Study Report Diavik Diamonds Project, 1999; page 144
2 See WLWB Online Registry for Country Rock and Till Storage Updated Design Report, 2001
3 ibid, Figure entitled “North Rock and Till Storage Site Plan”
Based on the design, DDMI planned to segregate the three types of rock into five different basins, promote freezing of the pile, and cover the pile at closure. Also, any seepage during operations would be collected and treated.

The Waste Rock Management Plan was approved following the environmental assessment, and has since gone through a number of revisions. In general, the Plan describes how DDMI will identify the different types of rock and identifies uses and disposal locations for each type of rock. Both the 2001 Design Report and the Waste Rock Management Plan address the existing WRSA, which receives waste rock from the A154 and A418 open pits and underground. In accordance with the Water Licence (Part F, Item 16 and Part H, Item 8), DDMI is to update these documents at least six months before starting Construction of the A21 Waste Rock Storage Area, which will receive waste rock from the A21 open pit.

In his November 2015 Inspection Report, the GNWT Inspector found that DDMI had deviated from the 2001 Design Report, by placing Type III rock in basins designated for other rock types:

“Potential Environmental risks were identified at the time of the Inspection (i.e., "deviations from the Country Rock and Till Storage Design Report"). The actual risk is uncertain at this time & will be evaluated and reported in future Inspection Reports (as this information becomes available).”

---

4 See WLWB Online Registry for Review Summary, Figure 4 in Attachment #1 of DDMI Response to Comments
5 See WLWB Online Registry for Water Use Inspection Report, November 27, 2016
DDMI placed Type III waste rock outside of the areas designated in the 2001 Design Report. Specifically, DDMI placed Type III rock in the SED basin (designated for Type II rock), the CLR basin (designated for Type I rock), the north dam of the PKC Facility, and the A21 dike.

The Inspector addressed this issue again in his January 2016 Inspection Report: “The failure to adhere with the Country Rock Till Storage Design Report (2001) represents a non-compliance which must be addressed as soon as possible.” 6 The Inspector informed DDMI that immediate submission of a revised Design Report and Waste Rock Management Plan was necessary and that “DDMI will continue to be out of compliance with their Licence until DDMI is operating in conformance with an approved Waste Rock Management Plan” (page 2 of the Inspection Report cover letter). DDMI and the Inspector continued to correspond about how DDMI should address the non-compliances identified by the Inspector.7

At its April 7, 2016 Board meeting, the Board approved the use of Type III rock in the north dam, but indicated it would consider this and other compliance issues related to Type III rock placement when it considered the updated Waste Rock Management Plan.8 See the Board’s April 7, 2016 Reasons for Decisions on the PKC north dam Modification for more detail.

On March 31, 2016, DDMI submitted Waste Rock Management Plan Version 7, which, in part, addressed the Inspector’s requirements. On April 6, 2016, Board staff distributed the Plan for public review. On April 19, 2016, DDMI submitted additional information in the form of a memo, to address information requested by the Inspector. This memo included important information related to the non-compliance issues and to the WRMP. Board staff therefore added the memo to the Online Review System for the WRMP, and extended the comment deadline to June 15, 2016, with a June 22, 2016 proponent response deadline. In this way, the public was able to comment on both the revised WRMP and the non-compliance issues identified by the Inspector. The GNWT Inspector (GNWT-Lands), GNWT Environment and Natural Resources (GNWT-ENR), the Environmental Monitoring Advisory Board (EMAB) and WLWB Board staff submitted comments. DDMI requested an extension to the proponent response deadline to June 30, 2016, which Board staff granted. Public comments and proponents responses are presented in the Review Summary.

The WLWB hired SRK Consulting to assist with the review of the Waste Rock Management Plan.

3.0 Reasons for Decision
This section summarizes the required WRMP revisions (Section 3.1), and provides additional detail about the Board’s assessment of DDMI’s proposed regulatory disclaimer (Section 3.2) and proposed criteria for management/disposal of Type III rock (Section 3.3). An amendment process for the Water Licence Schedules is discussed in Section 3.4.

6 See WLWB Online Registry for Water Use Inspection Report, February 1 2016
7 See WLWB Online Registry for Letter from Dave Wells to Inspector, Feb 4 2016 and Letter from Inspector to Dave Wells, Feb 11, 2016
8 See WLWB Online Registry for Directive and Reasons for Decision for the PKC Facility North Dam Modification, April 7, 2016
### 3.1 Summary of Required Revisions

As a result of its review of the WRMP, the Board has identified a number of required changes to the Plan. The required revisions and supporting rationale are in Table 1.

#### Table 1. Required Revisions to WRMP Version 7

<table>
<thead>
<tr>
<th>Reference</th>
<th>Revision</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision History</td>
<td>1. Add a list of specific differences between Version 6 and Version 7.</td>
<td>The revision history currently does not include a number of noteworthy changes to the WRMP.</td>
</tr>
<tr>
<td>Regulatory Disclaimer</td>
<td>2. Remove this section</td>
<td>See Section 3.2</td>
</tr>
<tr>
<td>Executive Summary</td>
<td>3. Revise the Executive Summary and any other text within the Plan, as necessary, to reflect the Board’s required revisions.</td>
<td>This will ensure the Executive Summary is accurate.</td>
</tr>
<tr>
<td>Various sections</td>
<td>4. Include basic information related to the following key aspects of waste rock management: - Water management - Closure planning - Geochemical characterization, including testing after 1998</td>
<td>This will provide context to and improve the ability of the reader to understand the Waste Rock Management Plan. (WLWB Staff Comment #9, GNWT-ENR Comment #89)</td>
</tr>
<tr>
<td>Section 1.1</td>
<td>5. Add “SOPs” to the list of DDMI Strategies to achieve objectives, and re-insert (and update if necessary) the text from Section 2.4 of WRMP Version 6, or provide a rationale for why this information was removed. (For clarity, the Board is not requiring DDMI to include SOPs in the WRMP, only that DDMI mentions the SOPs, as in previous versions of the WRMP.)</td>
<td>This text was removed without explanation and was not identified in the revision summary. Although SOPs themselves are typically not for Board approval, they can be an important mechanism for DDMI to ensure that it implements the WRMP.</td>
</tr>
<tr>
<td>Sections 1.3 and 5</td>
<td>6. Ensure that references to geochemistry and test pile research findings are current. How this information is best updated has yet to be</td>
<td>Readers of this Plan should have the ability to review current information.</td>
</tr>
</tbody>
</table>

---

9 References are to the public comments in the Review Summary.
| Section 3.2 | 7. Add waste rock destinations, till quantities (if any), and ore storage amounts to Tables 4, 5, and 6. | (WLWB Comment #5) The Plan does not conform to Schedule 6.5a (WLWB Comment #8, GNWT-Lands Comment #3, EMAB Comment #4). Also, the information will provide a clearer picture of waste rock destinations. |
| Section 3.3, page 11 | 8. Remove or revise this sentence: "The SED drainage basin was designated a Type III storage area during A418 dike construction". | As noted by the Inspector, and agreed to by DDMI, the sentence is inaccurate. (GNWT-Lands Comment #4) |
| Section 3.3, Section 3.5 (Table 7) | 9. Table 7 of the WRMP indicates that Type III rock is placed in the WRSA in accordance with the 2001 Design Report. While reference to the 2001 Design Report is appropriate, the WRMP should also describe how the WRSA was actually built (as discussed in the Board’s directive associated with these Reasons for Decision). For example, the table that DDMI presented as Attachment #1 to its response to comments could be included. Section 3.3 of the WRMP should include a complete description of where DDMI placed each type of material, and, perhaps most importantly, a new figure that clearly shows where each Type of material (till, Type I, Type II-only, and Type III rock) has been placed in the WRSA. The figure should be unambiguous and “user-friendly”. DDMI currently refers to the design drawing in the WRSA Final Closure Plan; however that drawing appears to have the objective of showing the areas of the WRSA that will be covered, and does not clearly illustrate the differences between the actual WRSA and the design, and does not clearly illustrate where Type I, II, and III rock was placed. | The WRMP should have an accurate and easily understood description of how the WRSA was built. Existing figures are insufficient to adequately convey this information to the reader. |
| Section 3.3 or 3.5 | 10. Add information on re-mining areas, including figures, as recommended in GNWT-Lands Comment #7. | This better enables inspection of DDMI’s waste rock re-mining activities. |
| Section | 11. Add the following text to Section 3.4, or provide a | This text was removed from |
3.4 rationale for why it was removed: “The duration that waste rock is temporarily stored in these areas depends on: the quantity of material being mined and hauled to surface; the ratio of rock types being brought to surface; and the availability of surface haul trucks and loaders.

To minimize the amount of time waste rock is stored at temporary storage locations DDMI established a 2-week maximum storage time at the temporary storage locations. In the event mining operations are suspended (e.g. a shut down), material in the temporary storage areas will be removed to appropriate locations in the NCRP or construction areas.”

| Section 3.5 | 12. Add the following uses:  
|             | • North dam of PKC Facility  
|             | • Use as cement rock fill  
|             | (Note that disposal of Type III rock in the CLR basin is not listed here because it is already described in WRMP Version 7)  
| Section 3.5 | 13. Revise the proposed criteria to reflect the Board’s decisions on this matter.  
| Section 3.5 | 14. Add a statement that the company will not use the Type I rock underlying the Type III rock in the CLR basin unless testing confirms the material is suitable for use.  

Because of the number of significant required revisions to the WRMP, the Board did not approve WRMP Version 7.

- **Decision #1**: The Board did not approve WRMP Version 7, and requires DDMI to make the revisions in Table 1 and submit WRMP Version 7.1 within 30 days.

As noted in Table 1, the reasons for requiring revisions related to DDMI’s proposed regulatory disclaimer and DDMI’s proposed use criteria, are further explained in Sections 3.2 and 3.3.

### 3.2 Proposed Regulatory Disclaimer

DDMI proposed the following “regulatory disclaimer” in WRMP Version 7 (page 3):

> The contents of this document include descriptions of management practices, procedures and information that is explanatory or predictive in nature. This information is subject to change
without a requirement for WLWB/Inspector notification or approval. For certainty the following requirements in this plan can only be changed with WLWB approval; submitted 90 days prior to the effective date of change:

1. Table 2: Waste rock type classification criteria.
2. Criteria for visual classification of underground waste (Section 2) – i.e. >10% biotite schist and/or diabase.
3. Criteria for use of Type II/III waste rock in construction (Section 3.5 points a) through e) inclusive.

DDMI clarified during the public review that for the three topics listed above, the company proposes to submit the revised Plan 90 days in advance and obtain Board approval. For any changes to the remaining content of the Plan, DDMI proposes to update the Plan annually, after the changes have been implemented. The company proposes that in that case, the Plan would still undergo the public review and Board approval process (Response to GNWT-Lands Comment #1).

Schedule 6, Item 5 sets out the required contents of the WRMP; namely 12 specific requirements (a through l). DDMI’s proposed disclaimer would mean that DDMI could change the contents of the Plan related to most of the 12 requirements in the Schedule without Board approval.

During the public review of WRMP Version 7, Board staff asked the company to identify what parts of the Plan are problematic. DDMI responded, in part, as follows:

Rather than attempt to identify each of the aspects of the WRMP requiring flexibility, DDMI expects that a more comprehensive discussion to determine the core aspects of the management plan that must not change without prior approval by the Board would be more useful and practical. DDMI requests that the Board provide for an opportunity to identify which items should require 90 days approval, as per Part H Item 12a, prior to providing direction on this aspect of the WRMP. (Response to WLWB Staff Comment #1)

DDMI did however, provide as an example, that the following requirement in Schedule 6, Item 5a is problematic:

“an annual schedule for till storage, ore stockpiling, Processed Kimberlite generation and Waste Rock production by rock type, tonnage, and destination over the term of the Project including sources and volumes of each rock type;”

The company explained why it is a problem to seek approval of changes related to this requirement 90 days in advance:

“DDMI currently provides predicted values based on the mine plan, but structural or material availability issues may arise that dictate a need to mine from a different area and require a quick response. This may happen many times a year, and it is not practicable or valuable to amend the WRMP and wait 90 days for an approval (as per Part H, Item 12a) every time such an action is required. (DDMI Response to GNWT-Lands Comment #1).
The company noted that it provided a more general view on its difficulties with Part H, Item 12 in an April 8, 2016 letter to the Board. The letter has been posted to the public registry; however since DDMI made no specific requests within the letter, it did not undergo public review.10

The Inspector was of the opinion that the disclaimer should be removed entirely and commented as follows (GNWT-Lands Comment #1):

“This disclaimer, if put into effect, would place DDMI in non-conformance with Part B, General Condition 16, which states that "the Licensee shall operate in accordance with any Plans approved pursuant to the conditions of Water Licence W2015L2-0001". Compliance with all Plans approved under W2015L2-0001 is based on the Inspectors assessment of whether or not DDMI has adhered with the approved Plan on record. Compliance can’t be based on a version of a Plan which the Inspector is not fully aware of/privy to, and will not be based on a version of a Plan not approved/subjected to Board Review/Approval.”

The Board agrees with DDMI that certain requirements in Schedule 6 may not warrant a 90-day approval process and in fact may be more appropriate as requirements in the Annual Water Licence Report. In addition, the company may wish to make small changes to the details in the WRMP, and it’s not clear whether every revision requires approval, and if not, how the company should determine whether approval is necessary. However, the Board also agrees with the Inspector that the proposed regulatory disclaimer is not an appropriate solution, for the reasons expressed by the Inspector, and because the disclaimer would allow DDMI to revise the content required by most of Schedule 6 without Board approval.

➤ **Decision #2: The Board does not accept the regulatory disclaimer in WRMP Version 7.**

DDMI suggested next steps towards addressing their concerns in their responses to comments:

*DDMI welcomes an opportunity to discuss improvements for regulatory clarity regarding requirements in the management plan, including possible amendment of Schedule 6 Item 5 (as per Part B Item 10) and/or structure of the Plan, prior to providing direction on this aspect of the WRMP (Response to Board Staff Comment # 8).*

*DDMI suggests that the WRMP could be re-formatted to include one section that clearly describes the items and procedures requiring 90 days approval (i.e. Items 5b, c, d and e) and another section consisting of ‘supporting information’ that would include the other items identified above and listed under Schedule 6 Item 5, additional information to align with the Standard Outline for Management Plans or information requested by reviewers to assist with understanding a specific plan. The ‘supporting information’ section would be updated annually,*

---

10 Board staff and DDMI staff discussed this letter on June 27, 2016, and staff suggested the company considering modifying the letter to include more specific solutions. On June 28, 2016 DDMI confirmed that it did not wish to modify the letter.
as required, including links to applicable plans or reports. It is expected that any such updates would still be distributed for review and comment through the WLWB process.

DDMI is interested in an opportunity to meet and discuss the above-noted considerations with Board staff or other interested parties once they have had an opportunity to review all response comments. DDMI anticipates that Board staff and DDMI will be able to determine a preferable approach to resolving the challenges of implementing Part H Item 12 and provide the Board with a workable solution that meets the needs of all parties (DDMI’s Cover Letter to proponent responses).

The Board is encouraged by DDMI’s suggestions for a collaborative approach to resolving this issue. As noted in the Board’s directive accompanying these Reasons for Decision, the Board supports an amendment process that begins with the opportunity for DDMI to propose amendments to the Schedule(s). DDMI may also propose additional solutions that do not require amendments to the Schedule.

3.3 Proposed Use Criteria

DDMI proposed five criteria (‘a’ through ‘e’) for using or storing Type III waste rock, as outline below. In previous versions of the WRMP, DDMI was restricted to using Type I rock only in construction. Part F, Item 5 of the Water Licence addresses this issue:

“All rock used in Construction must meet the geochemical criteria specified in the approved Waste Rock Management Plan as per Part H, Item 7.”

During the public comment period, Board staff asked DDMI where the Type III rock from the A154 and A418 underground would go if DDMI’s proposed use criteria were not approved (WLWB Staff Comment #12). DDMI stated that:

“Type II/III rock is/will be used for underground backfill and North PKC Dam construction. If these construction uses were not permitted, DDMI would be required to expand the NCRP footprint (i.e. into Pond 3) resulting in increased operational (increased haul distances, double handling, etc.) and closure costs and ARD/ML risks. If the Board approves the criteria, no new Type II/III is expected to be added to the NCRP.”

In subsequent emails between Board staff and DDMI (August 9, 2016), the company clarified that there is room to put more Type III in the Waste Rock Storage Area without going over the design footprint and height of the pile. DDMI’s proposed uses are intended to “take advantage of a better use for Type III rock”.

The GNWT-ENR commented on the proposed criteria (GNWT-ENR Comment #5):

“ENR recommends that this section of the Plan be revised to state that construction at the mine site should be completed with rock which has the approved geochemical criteria associated with
Type I rock. In some instances, other rock types may be used for construction purposes, following a request and approval of the WLWB.”

DDMI responded that:

“DDMI appreciates the ENR suggestion. This seems like a straightforward and clear approach however DDMI understands that the current structure of W2015L2-0001 does not allow this. It appears that the WLWB could not approve specific requests to use "other rock" in construction as that decision would be in conflict with Part F Item 5 unless the "geochemical criteria" in the Waste Rock Management Plan included enabling criteria. DDMI drafted Section 3.5 of the Waste Rock Management Plan to enable approval of the "some instances" as referenced by ENR. DDMI welcomes any recommended regulatory language or approach to resolve this issue. ENR’s recommendation is aligned with DDMI’s intent.”

The Board agrees that new uses of Type III rock must be described in an approved Waste Rock Management Plan and that there is no other process for DDMI to request approval.

Criterion ‘a’ addresses a specific use, whereas criteria ‘b’ through ‘e’ are very broad in that they do not specify uses or locations but instead set out general rules for where Type III rock could be used or placed. In general, the Board is of the view that these “blanket” criteria are not fully justified and could allow the indiscriminate use and storage of Type III rock around the site. As noted by DDMI’s expert consultant: “Type III waste rock should not be used indiscriminately for construction material on-site, but could be warranted under some circumstances.” 11 While this comment was not made with direct reference to the full set of DDMI’s proposed criteria, the Board agrees with the comment. The broadness of the criteria could present difficulties related to inspection, security, and record-keeping, and could leave room for differing interpretations of what is authorized.

Also, DDMI’s blanket criteria could result in an increase in liability related to Type III rock, and potentially allow DDMI to create Type III disposal areas without increasing its security deposit prior to disposing the rock. In response to WLWB Staff Comment #20, DDMI indicated that security updates to address new disposal areas of Type III rock could occur as part of annual Progress Reports. This could theoretically result in the mine being under-secured for up to a year, or even beyond. 12 To align with the INAC’s Mine Site Reclamation Policy for the NT (2002), security should be posted before a liability is incurred.

The Board is generally not supportive of DDMI’s proposed blanket criteria; the Board prefers to approve specific uses and locations for Type III rock, as discussed further below.

**Criterion ‘a’ for Use of Type III Rock**

DDMI’s Proposed Criteria: *Use in the production of cemented rock fill (CRF) to be permanently placed in the underground.*

---

11 See WLWB Online Registry for the Review Summary – Attachment #3 to proponent responses, page 6
12 This period could be more than a year because of the additional time for public review and Board approval.
As part of this review DDMI submitted a letter, dated October 8, 2010, from DDMI to the WLWB informing the Board of its intent to use Type III as underground backfill. To the Board’s knowledge, there is no record of any correspondence related to this letter in the public registry.\(^{13}\) There were no public comments specifically addressing criteria ‘a’.

With regards to the environmental implications of this activity, DDMI’s technical experts stated in their memo that:

“The use of Type III waste rock for cemented rock fill to be placed underground permanently is advantageous because it encapsulates and removes a quantity of Type III waste rock from subaerial exposure and weathering, and reduces the volume of Type III waste rock that requires a closure cover.”\(^{14}\)

The Board does not anticipate any environmental concerns associated with use of Type III waste rock in the cemented rock fill, and notes that this appears to be an appropriate location for long-term storage of Type III rock.

➢ **Decision #3: The Board supports use of Type III rock in the production of cemented rock fill (CRF) to be permanently placed in the underground.**

**Criterion ‘b’ for Use of Type III Rock**

DDMI’s Proposed Criteria: *Use is temporary, within the site water collection system such that any drainage can be collected and treated as necessary, and material will be removed at closure to ensure no long-term exposure of Type III waste rock in un-designated areas (see for example the temporary Type III storage area in Figure 3).*\(^{15}\)

The GNWT Inspector commented that:

“Temporary storage should only occur if explicitly and formally (i.e., written) approved. And temporary storage should have a clearly established, approved time-limit, which has been established by a qualified professional engineer to ensure oxidation and weathering issues have been adequately mitigated.

Recommendation: Provide written assurances that define the time limits of “temporary” storage which will mitigate oxidation and weathering concerns associated with that storage.” (GNWT-Lands Comment #8)

---

\(^{13}\) The letter was however placed on the registry during the Board’s review of WRMP Version 7.

\(^{14}\) See WLWB Online Registry, Review Summary, Attachment #3 to DDMI Response to Public Comments, page 6

\(^{15}\) See WLWB Online Registry for WRMP Version 7, page 13
DDMI responded that:

“DDMI’s definition is that "temporary" means that it will be used or moved before/at closure. DDMI requested an external expert view as requested. A copy is provided as Attachment #3.”

Attachment #3 of DDMI’s responses is a technical memo prepared by DDMI’s consultant, which DDMI included in its response to public comments (see Review Summary). The consultant’s analysis was specific to the Type III rock stored in the CLR basin, and not specific to DDMI’s proposed criteria ‘b’. DDMI’s consultants indicate that the possibility that temporarily stored Type III rock will generate contaminated seepage depends in part on the height of the pile, because the height influences how long it takes to “wet up” the pile and how much of the pile is in the active zone. DDMI has therefore not demonstrated that “temporary” should mean storage until closure. Also, as discussed above, this type of “blanket criteria” could present difficulties related to security, inspection, and record-keeping.

Board staff asked DDMI what uses it foresees would meet this criteria (WLWB Staff Comment #15), and DDMI confirmed that this criteria would allow storage and not use. In its response, DDMI stated that “Currently the only intended uses for temporarily stockpiled Type III is underground backfill and PKC North Dam”. As discussed in the “Background” section, the Board has already approved the use of Type III in the north dam, and use in underground backfill (see criteria a, above).

Placement of Type III rock in the CLR basin would also appear to fall under criteria b. In response to GNWT Comment #14, DDMI indicated that any seepage from this area reports to Pond 1, which means it will be treated if it does not meet Effluent Quality Criteria (EQC). Further, DDMI has agreed to include additional information that will address premature closure of the temporary stockpile in the CLR basin and final closure (if the stockpile still exists at closure) in ICRP Version 4 (Response to EMAB Comment #6). As noted in the Board’s directive accompanying these Reasons for Decision, the Board is requiring DDMI to increase its security deposit to reflect the cost of covering Type III rock in the CLR basin, and requiring DDMI to test Type I rock stored under the Type III rock before use in construction and closure. The Board therefore concludes that issues related to placement of Type III rock in the CLR basin have been addressed, and approves of this storage location going forward.

- Decision #4: The Board does not accept criteria ‘b’, but accepts the placement of Type III rock in the CLR basin of the Waste Rock Storage Area.

Criterion ‘c’ for Use of Type III Rock

DDMI’s Proposed Criteria: “The construction area is within a drainage basin that already contains Type II/III waste rock such that closure designs for Type III waste rock will be applied (for example the North PKC Dam).”\(^{16}\)

The criterion is again too broad and has the potential to allow indiscriminate placement of Type III around the site. For example, if in the future, the Board authorizes placement of Type III in a basin that

\(^{16}\) See WLWB Online Registry for WRMP Version 7, page 14
does not yet contain Type III rock, this criteria would then allow placement of Type III rock anywhere within that new basin. Further, this criterion does not specify that the rock must be placed within the site water collection system. The Board is of the view that it would be more prudent to allow specific uses.

Board staff asked DDMI to list the planned uses that would meet this criteria (WLWB Staff Comment #16), and DDMI identified use in the PKC north dam and haul roads within the PKC. As discussed above, the Board has already authorized use in the PKC north dam. Use of Type III rock in PKC haul roads is discussed under the next criterion (d).

- **Decision #5:** The Board does not accept criterion ‘c’, but accepts the use of Type III rock in the PKC north dam, as previously approved.

**Criterion ‘d’ for Use of Type III Rock**

DDMI’s Proposed Criteria: “The construction area is not within Lac de Gras but the Type II/III waste rock will remain water-saturated, which reduces oxygen exposure and subsequent sulfide oxidation and AMD production (INAC 2007; Environment Canada 2009) (for example road construction within the PKC that will become buried and water-saturated).”

In response to WLWB Staff Comment #17, DDMI stated that “The example already provided with 3d is the only use DDMI currently envisage that would fit into this criteria.”

This criterion would allow Type III rock that has been stored for some time and could have accumulated soluble oxidation products which could then be released. Similar to the criteria previously discussed, this criteria is a “blanket” criteria that may pose difficulties for the Inspector, although security should not be an issue with this criteria, since a cover is not anticipated for rock that will remain water-saturated.

Use in PKC haul roads may be reasonable, if those roads later become submerged, since the chemistry of the processed kimberlite (it is alkaline) is expected to prevent ARD. However, it is not clear where rock can be placed in the PKC Facility such that the Board can be confident it will eventually be submerged, and remain saturated following closure. As noted by the Inspector (GNWT-Lands Comment #9), climate change may affect whether rock is submerged and saturated post-closure. In response to the Inspector’s comment, DDMI indicated that “DDMI agrees that any potential climate change impacts on maintenance of a saturated condition would need to be considered before making this decision.” Without additional conditions placed on use in haul roads the Board cannot be certain the haul road will be submerged and saturated, and the Inspector may have difficulty confirming that the use is in a location that will later be submerged and saturated. Until DDMI can refine its proposed use of Type III rock in PKC haul roads, the Board does not approve of this use.

- **Decision #6:** The Board does not accept criterion ‘d’.

---

17 ibid
Criterion ‘e’ for Use of Type III Rock

DDMI’s Proposed Criteria: “As specified in construction design drawings approved by the WLWB (for example under Part F Item 4)”18

The appropriate place to propose new uses of Type III rock is in the Waste Rock Management Plan. This allows the Board to consider the proposal with the benefit of relevant information that would inform this decision (e.g., geochemistry, production schedules, etc.). Further, this proposed criterion would result in a situation where the WRMP does not identify the authorized locations of Type III rock, which may present inspection and record-keeping difficulties.

Decision #7: The Board does not accept criterion ‘e’.

In summary, the Board supports criterion ‘a’, does not accept criteria ‘b’ through ‘e’, and accepts the following activities related to Type III waste rock:

- Temporary storage of Type III rock in the existing stockpile within the CLR basin;
- Use in the PKC north dam; and
- Use in cement rock fill underground.

These decisions should be reflected in Version 7.1 of the WRMP, as noted in Table 1. If DDMI continues to believe that it requires criteria for uses/disposal of Type III rock, DDMI should attempt to refine the criteria to address the Board’s concerns related to inspection, the definition of “temporary”, record-keeping, and security.

3.4 Water Licence Schedule Amendments

The Board determined that the Water Licence Schedules would benefit from an amendment related to the WRMP for several reasons. First, for a number of public comments DDMI’s responses demonstrate that the company is interested in potentially revising the Schedule(s) to address some of its concerns with the WRMP. DDMI stated the following in its responses to comments:

“DDMI would appreciate an opportunity to discuss a preferred approach to improve regulatory clarity regarding requirements in the management plan, including possible amendment of the Schedule and/or structure of the Plan prior to providing direction on this aspect of the WRMP.

DDMI made this request in response to several reviewer comments, including those related to four of the required revisions in Table 1 (Revisions 4, 6, 7, and 10). Nonetheless, the Board is requiring those four revisions, to ensure the Plan conforms to the Licence and provides enough information for the reader to understand DDMI’s waste rock management practices. However, the Board agrees with DDMI that further discussion may assist the company with its difficulties with the 90-day timeline for changes to the Plan.

18 See WLWB Online Registry for WRMP Version 7, page 14
Second, some of the requirements in the Water Licence Schedule for the Waste Rock Management Plan may be better suited for other Schedules. For example, Schedule 6, Item 5a (an annual production schedule), and Item 5i (a comparison of predicted and measured quantities of each rock type produced in the preceding year) require annual updates. This type of annual reporting requirement is more appropriate in the Annual Water Licence Report. In order to move the requirement to the Annual Water Licence Report, Schedule 6, Item 5 (for the Waste Rock Management Plan) and Schedule 1 (for the Annual WL Report) would need to be amended.

Third, the Board identified three specific ways to improve the Waste Rock Management Plan. These improvements would be new requirements, and would best be achieved through an amendment to the Water Licence Schedule. Potential improvements include:

a. A verification program: Board staff enquired about the need for a program to verify that DDMI has properly segregated rock Types, and in particular to verify that Type I rock that will be used in Construction is non-PAG (see WLWB Staff Comment #6). In its response, DDMI stated that prior to proposing new classification methods in WRMP Version 4 (2009), DDMI verified that the new methods would be accurate. The company did not, however, describe a verification program to ensure that the classification methods have been properly implemented, and that Type I rock has been properly identified and segregated. A verification program, could for example involve taking a relatively small number of stockpiled Type I rock samples each year for confirmation.

Also, in their response to comments, DDMI provided an Acid Rock Drainage Risk Review completed by Golder Associates in 2012. Golder recommended that DDMI:

“verify the existing block model for the NCRP to evaluate its accuracy and reliability in terms of properly locating the three types of waste rock within the pile”, and if the reliability is insufficient, then DDMI should “develop a method for verifying the classification of re-mined waste rock prior to its reuse”.

Also, data from the waste rock research program has shown localized zones of ARD within the Type I test pile.19 This further indicates the need for verification that any Type I excavated for use in construction waste is appropriate for that purpose.

b. Better descriptions of monitoring related to the objectives of the WRMP, consistent with the type of information described in the Board’s Standard Outline for Management Plans (2013, page 2):

“a) All performance, environmental, and/or compliance monitoring related to the plan should be described along with identifying which individuals or departments are responsible for carrying it out. Describe links to Surveillance Network Program (SNP) and Aquatic Effects Monitoring Programs (AEMPs), and b) A description of how the management plan will be evaluated to ensure its effectiveness should be included along with the frequency and triggers for when the plan will be updated.”

---

19 See WLWB Online Registry for Appendix II-4 of the 2015 Annual Closure and Reclamation Planning Progress Report
The Plan currently contains very little information about monitoring. Board staff raised this issue during the public review (WLWB Staff Comment #3), and DDMI responded, in part, by stating that any such monitoring would need to be specific to the Plan’s objectives. The Board agrees.

c. A characterization program for waste rock from the A21 area. Although the WRMP is not yet required to reflect A21 mining, the Board believes an amendment to the Schedule to require a characterization program would ensure that DDMI understands the expectation for the Plan when it updates it to reflect A21 mining. This issue is discussed in Golder’s Acid Rock Drainage Risk Review submitted in response to WLWB Staff Comment #27, and in GNWT-ENR Comment #3.

In summary, it would be beneficial to amend the Water Licence Schedules to address the issues described above. The details of the public review process are described in the Board directive accompanying these Reasons for Decision.

**Decision #8: The Board believes an amendment process for the Licence Schedules should be initiated, beginning with the opportunity for DDMI to propose amendments.**

**Non-Compliance Issues**

The Board recently approved the use of Type III rock in the PKC north dam. DDMI had already used Type III rock in the north dam, which put the company out of compliance with its Water Licence. At that time, the Board was aware that there were additional non-compliance issues related to the placement of Type III rock and noted in its April 7, 2016 Reasons for Decision that:

“The Board will consider any compliance implications associated with placement of Type III rock in the PKC north dam raises, the Waste Rock Storage Area, and the A21 dike, when the Board reviews DDMI’s revised Waste Rock Management Plan (currently under public review). In this way, the Board can consider these issues collectively, and benefit from any additional information provided by reviewers and the company. To be clear, Board approval of the modification to the north dam in no way limits the Board’s future decisions regarding non-compliance issues associated with placement of Type III rock.”

Based on a review of DDMI’s 2001 Waste Rock Storage Area Design Report (the “2001 Design Report”), the approved WRMP (Version 6), the GNWT Inspection Reports, correspondence between DDMI and the Inspector, and the Review Summary, the Board identified four key activities that DDMI conducted that put them out of compliance with their Water Licence. For each non-compliance issue, the Board assessed the nature of the non-compliance, environmental considerations, and outstanding issues. The Board’s assessment is presented in Attachment #1.

---

20 See WLWB Online Registry for the Board’s Directive regarding the PKC North Dam Modification, April 7, 2016

21 See WLWB Online Registry for Country Rock and Till Storage Updated Design Report, 2001
As explained in the Attachment, the Board made three additional decisions as a result of its assessment of the non-compliance issues:

- **Decision #9**: DDMI must submit a closure cost estimate for the Type III rock in the CLR basin. This cost should address the maximum liability during the life of the mine.

- **Decision #10**: DDMI cannot use the Type I rock that underlies Type III rock in the CLR basin as cover material unless it can demonstrate, through testing, that this material is suitable for use. This prohibition must be included in WRMP Version 7.1 (as identified in Table 1 of the Reasons for Decision).

- **Decision #11**: DDMI must submit to the Board an analysis of whether there were any environmental consequences related to the placement of Type III rock in the A21 dike. This analysis must account for the fact that the rock was not “fresh” and had been stored for some time before being used.

Signed the 15th Day of September, 2016, on behalf of the Wek’èezhìi Land and Water Board

Witness

Mason Mantla
A/Chair, Wek’èezhìi Land and Water Board
Attachment #1
Board Assessment of Non-Compliance Issues Related to
Waste Rock Management at the Diavik Mine

Non-Compliance Issue #1
Description: DDMI placed Type III rock in Lac de Gras to construct the A21 dike toe buttress, as shown in the “Type III Buttress Drawing” submitted with DDMI’s responses to public comments.22

<table>
<thead>
<tr>
<th>Why is this Activity Non-Compliant?</th>
<th>Environmental Considerations</th>
<th>Outstanding Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>This activity is not authorized in the WRMP. More specifically, the approved WRMP (Version 6) says: “There are currently no plans for subaqueous disposal of Type III material and DDMI would apply to WLWB for approval before initiating any subaqueous waste rock management strategies.” This means DDMI was out of compliance with Part F, Item 5 and Part H Item 7.</td>
<td>DDMI provided a response to EMAB Comment #2 and GNWT Comment #19 that underwater placement of potentially acid generating rock is a recognized and preferred mitigation strategy for preventing metal leaching/acid rock drainage. The Board does not dispute this. DDMI also presented an evaluation of metal releases from submerged Type III rock that has been placed in the buttress (Attachment #3 of DDMI’s response to comments). The evaluation showed a negligible difference in the amount of metal that would be released from Type III versus Type I rock. The evaluation is based on the assumption that the Type III rock was fresh – i.e. had not been exposed to oxidizing conditions prior to placement in the dike. However, in an August 4, 2016 email to Board staff, DDMI indicated that rock was excavated from a temporary stockpile that was exposed to air and water for a period of time before it was used for buttress construction. As a result, the evaluation presented by DDMI is not appropriate for estimating metal release rates from weathered rock used to construct the buttress. The Board concluded that there is insufficient</td>
<td>More information is needed to make an informed conclusion regarding the environmental consequences that may have occurred as a result of the use of Type III rock in the A21 dike.</td>
</tr>
</tbody>
</table>

22 See WLWB Registry for Review Summary, Attachment #4 of DDMI’s Responses.
Why is this Activity Non-Compliant? | Environmental Considerations | Outstanding Issues
---|---|---
In response to WLWB Staff Comment #21, DDMI agreed that this activity “likely” put DDMI out of compliance with the Water Licence. | information to determine whether there are any environmental concerns associated with this activity. |  
It is the Board’s understanding that any soluble oxidation products released from the buttress rock would have occurred over a short period of time after flooding, and would not be expected to persist over time. | 

As a result of the Board’s assessment of the use of Type III rock in the A21 dike, the Board is requiring DDMI to submit to the Board an analysis of whether there were any environmental consequences related to the placement of Type III rock in the A21 dike. This analysis must account for the fact that the rock was not “fresh” and had been stored for some time before being used. This will allow the Board, the Inspector and other parties to have a better understanding of whether there were any environmental consequences related to the placement of Type III rock in the A21 dike. Based on the information provided to date, it is the Board’s understanding that any release of metals or acidic drainage from the placement of Type III in the A21 dike has already occurred.

**Non-Compliance Issue #2**
Description: DDMI placed Type III rock in the CLR basin of the Waste Rock Storage Area.

| Why is this Activity Non-Compliant? | Environmental Considerations | Outstanding Issues |
---|---|---|
The 2001 Design Report shows that the CLR basin was designated for Type I rock only. This means DDMI was out of compliance with Part F, Item 16. The Inspector added that “his review of this storage did not find any formal written approval or authorization for this "temporary" storage, which has been in place for a number of years” | DDMI has proposed to include additional information that will address premature closure of the temporary Type III stockpile, final closure of the stockpile if it still exists at closure, and related financial security issues with the next version of the closure plan (response to WLWB Comment #14). The Board agrees that the closure plans can be added to ICRP Version 4, however, the security deposit should be increased to reflect closure costs associated with the Type III material in the CLR basin (see the discussion in the Outstanding Issues column for more details). | 1. According to the approved WRMP, DDMI can use Type I for construction; however, it is not clear that all Type I rock in the CLR basin is suitable for use as cover material.  
2. The security deposit does not include costs for closure and reclamation of the Type III rock in the CLR basin. Although DDMI and the GNWT-ENR agree that |
Why is this Activity Non-Compliant? | Environmental Considerations | Outstanding Issues
---|---|---
(GNWT-Lands Comment #5). DDMI did not dispute this. In response to WLWB Staff Comment #21, DDMI agreed that this activity “likely” put DDMI out of compliance with the Water Licence. | treated prior to discharge if it does not meet EQC. The Board also considered whether the Type I rock underneath the temporary Type III stockpile may have been contaminated by the Type III rock, and is therefore no longer suitable for use in construction. DDMI’s response to GNWT Comment #14 indicates that the temporary Type III rock pile in the CLR basin of the WRSA is likely still in the wetting up phase, and that freezing conditions are likely to have developed below a depth of 7 m, resulting in limited amounts of seepage to the underlying rock. DDMI’s response to WLWB Staff Comment #25 suggest that even if some seepage is occurring, the types of secondary minerals forming in this material would be limited to iron and aluminum oxyhydroxides. Although not stated, it is implied that these would have a relatively low solubility. No information is provided on the concentrations or fate of nickel and zinc in seepage from the Type III rock. Although the amount of seepage and therefore the potential for deposition of soluble minerals has probably not occurred to an appreciable extent to date, these are time dependent processes that are likely to increase over time. If there are secondary minerals in the Type I rock, or elevated metals in the porewater (trapped as ice), then use of this rock as cover material could result in poor water quality from a much larger area of the waste rock storage area. | this can be corrected with ICRP Version 4, which is due December 31, 2016 (See GNWT-ENR Comment #9), it is possible that this could mean that the security deposit would not cover this situation until late in 2017 (i.e., once the ICRP review and approval process is complete). This is contrary to the INAC Mine Site Reclamation Policy for the NT (2002).\

---

23 See page 6 of the Policy.
As a result of its assessment of DDMI’s placement of Type III rock in the CLR basin, the Board is directing DDMI to submit a closure cost estimate for the Type III rock in the CLR basin. This cost should address the maximum liability (e.g., the costs associated with the largest predicted size of stored Type III rock in the CLR basin) during the life of the mine.

The Board can then consider this estimate at the same time as, or shortly after, it considers the security deposit recently submitted with the 2015 CRP Progress Report.

The Board is also informing DDMI that it cannot use the Type I rock that underlies Type III rock in the CLR basin for any purpose unless it can demonstrate, through testing, that this material is suitable for use. This requirement must be reflected in the revised WRMP (as shown in Table 1 of the Reasons for Decision). If DDMI wishes to use this material as cover, it can present the results of testing for the Board’s consideration, and submit a revised WRMP.

Non-Compliance Issue #3
Description: DDMI placed Type III rock in SED basin of the Waste Rock Storage Area.

<table>
<thead>
<tr>
<th>Why is this Activity Non-Compliant?</th>
<th>Environmental Considerations</th>
<th>Outstanding Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Design Report shows that the SED basin was designated for Type II rock only. This means DDMI was out of compliance with Part F, Item 16. In response to WLWB Staff Comment #21, DDMI agreed that this activity “likely” put DDMI out of compliance with the Water Licence.</td>
<td>DDMI has included a cover for the SED basin in its draft final closure plan for the WRSA. DMI has indicated that “observations and modelling of the thermal behavior of the NCRP from the Test Piles research suggest that an active zone would remain in the cover system and not penetrate the Type III material under current climate conditions as well as a warming climate scenario” (Attachment #3 of DDMI’s response to comments). Additionally, the company indicated that during operations, seepage is collected and treated prior to discharge. On this basis, DDMI concluded that</td>
<td>None</td>
</tr>
</tbody>
</table>

24 See WLWB Online Registry for North Country Rock Pile Closure Plan, in Appendix IV of DDMI’s 2015 Closure and Reclamation Planning Progress Report
the likelihood of Type III rock in the SED basin causing deleterious environmental impacts would be the same as the Type III rock stored in the QUAR and CLAR cells.

The Board does not dispute this assessment, but notes that any residual risks associated with the covered waste rock are now present over a larger area of the site. Nonetheless, it does not appear that this will result in a significant increase in residual risk, which has been reasonably well characterized over the course of the test pile research program.

Further, DDMI has submitted a cost estimate for covering the Type III rock in the SED basin as part of the 2015 Closure and Reclamation Planning (CRP) Progress Report, which the Board will review when it reviews the Progress Report.

In conclusion, the Board did not identify any outstanding environmental concerns associated with placement of Type III rock in the SED basin.

<table>
<thead>
<tr>
<th>Non-Compliance Issue #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description: DDMI placed Type III rock in the Processed Kimberlite Containment (Facility) north dam</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Why is this Activity Non-Compliant?</th>
<th>Environmental Considerations</th>
<th>Outstanding Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part F, Item 5 says rock used in Construction must meet the geochemical criteria in the WRMP, which does not identify that Type III rock can be used in the dam. This means that DDMI was out of compliance with Part F Item 5 and Part H Item 7.</td>
<td>In its April 7, 2016 letter regarding Board approval of the PKC north dam modification, the Board stated that (page 1): “The Board concluded that any geotechnical, geochemical, closure and reclamation, or other environmental issues associated with the modification are immaterial or can be adequately mitigated (e.g., by covering the Type III rock with till and non-PAG rock)”</td>
<td>None</td>
</tr>
</tbody>
</table>

The Board has since approved this use as part of its approval of the PKC north dam Modification request (see Reasons for Decision, April 7 2016 Board meeting). Note that DDMI has already prepared
In response to WLWB Staff Comment #21, DDMI agreed that this activity “likely” put DDMI out of compliance with the Water Licence.

A cost estimate for covering the Type III rock in the PKC north dam; the Board will review the estimate when it reviews the Progress Report.