



Water Resources Division
Nunavut Regional Office
Iqaluit, NU X0A 0H0

November 2, 2018

Richard Dywer
Manager of Licensing
Nunavut Water Board
PO Box 119
Gjoa Haven, NU X0A 1J0

CIDM # 1230667

**Re: 2AM-LUP1520 – Review of Progressive Reclamation Cost Update –
Lupin Mine Property – Kitikmeot Region, Nunavut**

Thank-you for the email notice received on September 26, 2018, regarding the opportunity to comment on the Progressive Reclamation Cost Update – Lupin Mine Property.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) reviewed the documents provided by the Nunavut Water Board (NWB) under Part C on the Nunavut Water Board FTP site as it relates to 2AM-LUP1520. CIRNAC's comments are provided pursuant to its mandated responsibilities from the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

If you have any questions or require further information with respect to this matter, contact me at (867) 222-9278 or by email at ian.parsons@canada.ca.

Sincerely,

Original signed by

Ian Parsons
Manager, Water Resources

Cc. Spencer Dewar, Director Resource Management, CIRNAC, Nunavut Regional Office
Justin Hack, Manager Field Operations, CIRNAC, Nunavut Regional Office



Memorandum

To: Richard Dwyer, Manager of Licensing, NWB

From: Ian Parsons, Manager, Water Resources CIRNAC, Nunavut Regional Office

Date: November 2, 2018

Re: **Review of Progressive Reclamation Cost Update – Lupin Mine Property – Kitikmeot Region, Nunavut - 2AM-LUP1520**

Applicant:	Lupin Mines Inc. (LMI)
Project:	Lupin Mine Project
Region:	Kitikmeot

Background

The Lupin Mine Site is situated in Nunavut's Kitikmeot region, approximately 250 km West of Arviat, 285 km southeast of Kugluktuk, Nunavut, and about 400 km north of Yellowknife, Northwest Territories. The airstrip serving this Site is at 65° 46'00" N and 111° 14'41" W. The Site is on the western shore of Contwoyto Lake, approximately 60 km south of the Arctic Circle.

The mine property is currently owned by Mandalay Resources with the licensee of the site being Lupin Mines Inc. (LMI). The Lupin Mine was in operation from 1982 to 2005 with temporary suspensions of activities between January 1998 and April 2000, and between August 2003 and March 2004. The mine resumed production in March 2004 until February 2005. The site has remained in Care and Maintenance since 2005.

Currently LMI is looking for progressive reduction in security and implementing their final closure plan in the coming months.

CIRNAC worked with Arcadis Canada Inc. to review the documentation for the final Closure Plan (CP) and undertook a site investigation on July 5, 2018 for assessing and validating security requirements for the Lupin site. Attached below are CIRNAC's comments and recommendations on the Progressive Reclamation Cost Update (PRCU) document and notes from field observations and the meeting held with LMI and Golder prior to the site visit.

A. SUMMARY REVIEW COMMENTS

CIRNAC is of the understanding that the PRCU provided by LMI is intended to serve as the basis for reduction of the security until issuance of a renewal license (anticipated in 1 year by LMI). However, there has been no confirmation of when to expect the renewal process to start; LMI has a valid Water Licence until May 10, 2020. The progressive reclamation activities consist of two parts: work completed after the site visit of July 5, 2018; and work that is expected to be complete



before spring of 2019. The PRCU uses unit costs for work expected to be performed developed by Knight Piesold (KP).

Recommendation 1: LMI should provide CIRNAC with the FCRP and the final schedule / timelines and revised cost estimate in keeping with the FINAL CP. Not having this information at this time, limits our assessing the PRCU based on our numbers from earlier closure plans reviews.

As noted in our site visit report, it appears that LMI may have inaccuracies in costing for some aspects of the required closure works (e.g. rip rap dam stabilization) and taken credit for that work even though that work has not been carried out in accordance with the ICRP or earlier closure plan commitments (e.g. esker materials have been used instead of rip rap and the slopes do not appear to be at 2.5:1). Thus, while efforts have been carried out and costs incurred to place materials, LMI needs to verify that the materials used are the materials that were specified. The use of improper material may have implications on long term performance of the reclamation and the release of security.

Recommendation 2: In general, LMI should provide additional information that will allow us to:

- ***verify that the work as stated Section 2.3 of the PRCU has been performed,***
- ***confirm that the work has been carried out in accordance with the design specification and in accordance with the Final Closure Plan, and***
- ***confirm that works completed and/or planned are consistent with the Final Closure Reclamation Plan.***

In the absence of the information noted in the above summary, and as discussed to some degree in the additional comments below, to agree to any future release of security for works stated to be complete or those that are still expected to be performed would be putting the Crown at risk of being under secured.

B. COMMENTS BY SECTION

The following comments are provided in keeping with the structure of the Golder Progressive Reclamation Cost Update.

SECTION 1 INTRODUCTION

Golder notes that LMI is carrying out progressive reclamation work in accordance with the existing Water Licence and the Interim Abandonment and Restoration Plan (IARP).

Comment: It is not clear if this is the same plan as the Interim Closure Restoration Plan (ICRP) dated October 2017.

Recommend: LMI clarify if IARP and ICRP are the same, or if not note the difference.



Golder notes that LMI has submitted a Final Closure Reclamation Plan which includes (in Appendix A) a cost estimate to implement final closure of the site.

Comment: As stated in section 2.1 it is noted that the progressive cost estimate is based on the KP cost estimate, not the Final Closure Plan Cost estimate.

Recommend: LMI identify differences between the KP and Final Closure Plan Cost estimate.

SECTION 2 CLOSURE COST REVIEW

Section 2.1 Background

Golder notes that KP was retained by the NWB in 2016 to review security estimates of CIRNAC and LMI and that the NWB set a security amount of \$34.65 million as recommended by KP. The security amount was reduced in April 2018 to \$29.305 million taking into account progressive reclamation work completed in 2017 based on the items completed as per the KP cost estimate.

Comment: Note that a significant portion of the reduction was related to the usability of the fuel. Since the usability of fuel on site has already been accounted for in the last security reduction, it is not clear to CIRNAC if a further reduction in security includes fuel.

Recommend: LMI provide value of progressive reclamation reduction not including value of fuel, since it has already been accounted for in an earlier reduction

Section 2.2 Site Visit

Golder notes that on 5 July 2018 a site visit occurred which was attended by LMI and its consultants as well as CIRNAC and its consultant. Golder notes that at the time of the site visit primary activities were:

- Ongoing placement of granular cover within the limits of the Tailings Containment Area (TCA)
- Ongoing bio-remediation of hydrocarbons in existing land farm cell, and
- Lime treatment of water in the TCA in preparation for discharge to the environment (outside the TCA).

Comment: During the site visit LMI was in the process of preparing for lime treatment, but treatment had not started.

Recommendation: Confirm when in 2018 the lime treatment and discharge started and ended at the site.



Section 2.3 Progressive Reclamation Work Completed Subsequent to the Site Visit

The Golder PRCU provides a bullet list of reclamation work that has been completed in this respect.

Comment: Golder states that the numbers presented have been “reviewed for reasonableness” but otherwise Golder has relied on what they call “information”. No verification or supporting information has been provided to confirm that these activities and quantities as stated have been completed or that they are in accordance with the ICRP or FRCP.

Recommend: LMI should provide verification of information.

Section 2.3 Progressive Reclamation Planned for the Winter 2018-2019

The Golder PRCU provides a bullet list of reclamation work that will be undertaken during the winter of 2018-2019. Golder has reviewed these plans and determined them to be both credible and appropriate measures in preparation for full scale closure.

Comment: CIRNAC understands this section of the document to suggest that all of the work listed will be completed in the winter 2018-2019. Based on our understanding of the site and work elements, we need LMI to provide more information on how these tasks will be completed in the timeline suggested.

On review of the Estimate of Progressive Reclamation Reimbursement cost tables in Appendix A, we noted that not all of the work identified in Section 2.3 Progressive Reclamation Planned for the Winter 2018-2019 was actually being costed as being completed (100%) in winter 2018-2019 as the tables provided indicate 15% is expected to be performed during the period.

Recommend: CIRNAC would request that LMI be more specific and clarify what and how much work is actually planned to be performed in the winter of 2018-2019 against the bulleted general line descriptions listed in Section 2.3. As well as providing more information on how these tasks will be completed in the timeline provided.

CIRNAC requests that LMI provide the information as requested in the above recommendations before any reduction in security.



ATTACHMENT B

Based on July 4, 2018 meeting and July 5, 2018 site visit, the following is an initial list of issues and recommendations associated with the progressive reclamation cost update document and how it currently fits with the proposed final closure plan. In order for the Progressive reclamation cost update to be effectively reviewed it has to fit or work within the proposed final closure plan

Number	ISSUE	RECOMMENDATION / Question
1	Figures do not show final proposed conditions.	Add contours and bathymetry to show final elevations and water levels.
2	Figures do not provide final proposed cross-sections (e.g. dams, spillways, plans site, etc.).	Create and add figures as appropriate.
3	Existing water levels not known or readily apparent.	Add simple staff gauges in each water body.
4	Final water level control not known	Run invert elevation profile from Cell 4 pond through connecting drainage ditch and pond 1 and 2.
5	Waste rock dams may be PAG and exposed waste rock may remain if cover placement not carried up slope or thickened at these locations.	Need to ensure potential PAG waste rock is managed in an appropriate manner.
6	Not clear if ARD assessment of waste rock included materials in dams and roads	Confirm if ARD assessment included sampling dam waste rock materials.
7	Major earthwork stabilization addition at M Dam was carried out through the placement of esker materials, not rip-rap. Esker materials do not appear to be at 2:1 slope and are slumping.	Add rip rap cover to outer shell.
8	<p>The ICRP in section 6.5.3 page 41 states that <i>“a major program of dam enhancement is planned during the closure activities. The sides of all dams will be brought to at least 2.5H:1V slope by the addition of quarried riprap”</i>. Section 6.10 notes that <i>“a riprap quarry will be developed to provide the coarse (nonPAG) broken rock needed to enhance dam stability and provide additional armour for the faces of the embankments ...”</i>.</p> <p>Field comments during the site visit stated that there were no plans to quarry rock. This is a material change of design and will reduce the long terms stability and erosion resistance of the embankments. See also issue 9 below.</p>	<p>This is a material change that should likely not be accepted. If proceeding with this course of action it is likely that some form or long-term maintenance will be required.</p>
9	In ICRP closure costing LMI noted that Rip Rap costs should use actual costs as incurred in M Dam work. However, based on	Review and adjust closure cost to reflect cost of rip rap placement.



	field observation, M Dam work as noted above was carried out using esker materials not rip rap materials and do not appear to be at 2.5:1 slope.	
10	Temporary Portal plug exists on site. Draft final closure plan does not include for an engineered plug for the portal.	Need to include for engineered design and construction of permanent portal plug.
11	The ICRP in section 6.4, indicated that waste rock will either be excavated and placed underground/or in the TCA; or left in place, contoured and covered. The final draft closure plan presents a material change in waste rock management as it is now proposed to consolidate most of the waste rock in place at the mill site and cover with esker materials.	PAG waste rock should be placed U/G as much as possible. We are concerned that the proposed cover will only act as an intrusion barrier and not prevent flushing of acidic seeps. The proponent needs to demonstrate how placement of an esker cover over contoured waste rock will mitigate surface drainage of acidic water.