



REPORT

Response 2 to CIRNAC on Progressive Reclamation Cost Update

Lupin Mine, Nunavut

Submitted to:

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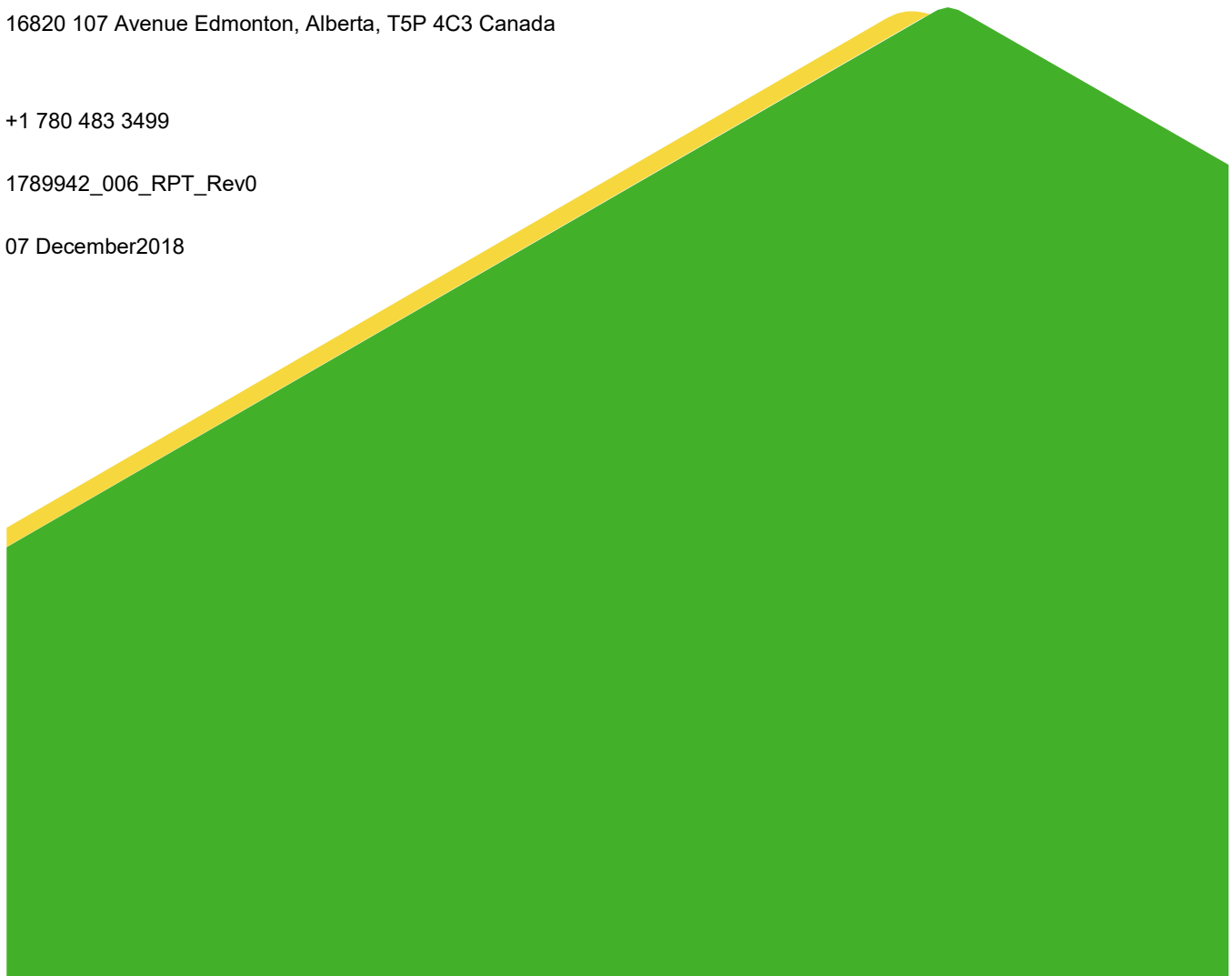


Table of Contents

1.0 INTRODUCTION	1
2.0 BACKGROUND	1
3.0 RESPONSES TO CIRNAC COMMENTS	1
3.1 Responses to Specific Comments on Chapter 3 of PRCU:	1
3.2 Responses to Comments on Chapter 4 of PRCU:	4
4.0 RESPONSES TO ATTACHMENT 2	7
5.0 UPDATED COSTS	11
6.0 CLOSURE	12

APPENDIX A

Letter from NWB to LMI – NWB 2018(c)

APPENDIX B

Photos of Piping Removal

APPENDIX C

ChemKleen Tank Certification

APPENDIX D

2015 – 2018 Waste and Hazardous Waste Removal and KBL Manifests

APPENDIX E

Updated Estimate of Progressive Reclamation Credit

APPENDIX F

Attachment 2 to CIRNAC (2018b)

1.0 INTRODUCTION

Golder Associates Ltd. (Golder) was retained by Lupin Mines Incorporated (LMI) to update the closure cost estimate for the Lupin Gold Mine located in Nunavut.

2.0 BACKGROUND

LMI is currently applying to the Nunavut Water Board (NWB) for a renewal of their Water Licence (2AM-LUP1520). Lupin intends to carry out final closure of the Site and submitted a Final Closure and Reclamation Plan (FCRP) (Golder, 2018a) on July 30, 2018. A cost estimate to implement final closure of the Site is appended to the FCRP. The FCRP and the associated cost estimate are currently in the permitting process and have not yet been approved.

In the meantime, LMI is continuing to carry out progressive reclamation works consistent with the existing Water Licence and the Interim Closure and Reclamation Plan (ICRP, approved July 20, 2018). LMI is planning to continue progressive reclamation work throughout the winter of 2018 - 2019.

On 24 September 2018, LMI submitted a report (Golder, 2018b) which documented the progressive reclamation work that had been completed as of July 5, 2018, as well as the work that is planned to be completed during the winter of 2018 – 2019. The report (referred to herein as the Progressive Reclamation Cost Update, or PRCU) also provided estimates of the amounts by which the closure financial liability had been reduced by July 5, 2018 and will be reduced by the end of the winter of 2018 – 2019. This information was provided in response to an e-mail request (NWB, 2018c) from NWB to LMI (see Appendix A).

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) provided a response to the PRCU in a letter (CIRNAC, 2018a), which requested additional information. LMI provided a response (Golder, 2018c). CIRNAC responded in an additional letter (CIRNAC, 2018b), which accepted some of the responses, but requested additional responses in some other instances. The following sections of the current report provides responses to the outstanding questions in the CIRNAC (2018c) letter. The CIRNAC comments are reproduced in boldface italic, followed by LMI responses in plain font.

3.0 RESPONSES TO CIRNAC COMMENTS

3.1 Responses to Specific Comments on Chapter 3 of PRCU:

Chapter 3.1 of Golder Report

CIRNAC Recommendation 1 – Request for FCRP and Final Schedule and Timelines

Golder Response: Section 3.1 Golder provided link for FCRP.

CIRNAC comment: LMI has satisfied this recommendation.

Chapter 3.2 of Golder Report

CIRNAC Recommendation 2 - Verification of work completion to specification

Golder Response: In Section 3.2 Golder states Section 3.4 provides documentation of works completed / to be completed.

CIRNAC comment: Our comments on these items are provided below in the order as addressed by Golder.

Chapter 3.3 of Golder Report

CIRNAC Comments and Recommendations - LMI clarify if IARP and ICRP are same, or if not note the difference

Golder Response: Golder noted that both IARP and ICRP refer to the same document, the latest of which is dated October 2017.

CIRNAC comment: LMI has satisfied this recommendation

Chapter 3.4 of Golder Report

- 1) **CIRNAC Comments and Recommendations** - LMI identify differences between KP and FCRP cost estimate.

Golder Response: Golder states that FCRP cost estimate is not relevant as the FCRP is not yet approved.

CIRNAC Comment: *CIRNAC believes that the KCRP [sic, FCRP] is relevant as it represents LMI's plan for the site as submitted to the NWB. As such, LMI needs to identify differences between KP and FCRP cost estimate.*

Golder Response: The FCRP and the associated cost estimate are currently in the permitting process and they have not been approved. As a result, the FCRP cost estimate cannot currently form the basis for evaluation of the value of progressive reclamation work that has been or will be completed. That valuation can only be made in reference to the KP (2016) cost estimate because that is the basis for the current security amount.

The current request for security reduction is necessarily based on approved activities being undertaken on site under the approved IARP/ICRP. The cost estimate under consideration is based on the foundational document developed by the NWB independent consultant (KP, 2016). The assessment of costs and reductions and/or increases must be based on approved documents accepted by the NWB to allow the NWB to make valid comparison. LMI understands that there will be differences between the KP (2016) cost estimate and the final FCRP cost estimate that will need to be addressed and accounted for once the FCRP and associated estimate have been acknowledged and accepted for the purpose of administering an amendment application to the current licence. LMI acknowledges that an updated cost comparison may be required during the regulatory review process at that time to accurately capture the current real time estimated costs taking into account any works that have been completed under the ICRP/IARP.

- 2) **CIRNAC Recommended** - LMI provide value of progressive reclamation reduction not including value of fuel.

Golder Response: answer provided.

CIRNAC Comment: *LMI has satisfied CIRNAC's request.*

Golder Comment: No further comment.

- 3) **CIRNAC Recommended** - Confirm when 2018 water treatment and discharge started at the site.

Golder Response: Golder revised date of lime treatment and discharge to be from August 21 to September 19, 2018.

CIRNAC Comment: *LMI has provided the dates requested [with respect to the treatment and release of water], however at this time we have not seen information on water chemistry confirming compliance with water Licence discharge criteria.*

Golder Response: The water quality was monitored in compliance with the licence and the results were filed with ECCC. CIRNAC, ECCC and the NWB were e-mailed pre-discharge quality results on August 20, 2018, and the CIRNAC Inspector approved the discharge on the same date. A summary will be provided in the 2018 Annual Report. In accordance with the water licence results of discharge will be provided with the Annual Report on or before March 31, 2019. LMI would like to note however the results have been provided to federal Regulatory Information Submission System (RISS) in accordance with reporting requirements under the MDMER.

- 4) **CIRNAC Recommended** - LMI should provide verification of information of the progressive reclamation work completed subsequent to the site visit.

Golder Response: In response to this request, Golder has provided additional discussion under nine bullet items. Of these nine (9) items, supporting information is provided for two (2) of these items as noted below:

- field records of truck loads for esker materials hauled and placed for the Cell 5 cover, and
- quantity of treated water discharged

CIRNAC Comment: *Additional verification information is required for the other 7 items*

Golder Response:

- 4,000 m of tailings pipeline were removed – This was pointed out during the site visit of July 2018 - see attached pictures in Appendix B
- 3,000 m of power cable were removed – The line from the Dam 2 to the explosive buildings has been removed.
- The generator was removed from the Freshwater pumphouse – This was observed by all during the site visit. There was a visible hole in the wall of the pumphouse and everyone was advised that this was to remove the generator. The hole has now been repaired.
- Additional instrumentation was installed in the TCA. This is documented in the annual geotechnical report (Stantec, 2018) to be posted to the NWB .ftp site.
- 26 fuel storage tanks were cleaned and certified – The certification report from ChemKleen is attached as Appendix C.
- A fleet of equipment at Ulu has been serviced and prepared for shipment to Lupin. - LMI is currently tendering the closure implementation at Lupin. The successful Contractor will be required to provide a fleet of equipment that he deems necessary to complete the work. The Contractor will choose to either bring the equipment from Ulu and/or mobilize additional equipment by ice road. In either case, the required fleet will be mobilized to the site prior to July 2019.
- See attached waste list and KBL manifests from 2015-2018 in Appendix D

- 5) **CIRNAC Recommended** - LMI be more specific with respect to and clarify what and how much work is planned to be performed in the Winter 2018-2019

Golder Response: Golder noted that work planned for winter 2018-19 comprises of “gutting” of removable building materials. The value of “gutting” is estimated at 15% of demolition value. Also provided in Appendix E of the Golder report is a response to provide the requested additional details. During CIRNAC’s review of this additional information it is not clear as to what happens to the various items described in the appendix after they have been “removed” during the “gutting” action.

- 6) **CIRNAC Comment:** This partial satisfies CIRNAC’s recommendation and are requesting clarification on what happens after equipment and materials are “removed” during the gutting process.

Golder Response: As outlined in the approved ICRP, and consistent with the existing Water Licence, the management and disposal of all progressive reclamation waste, equipment and materials at Site has been managed in accordance with the Lupin Mine Site Waste Management Plan (Solid and Hazardous) and its Appendices: Landfill Management Plan and the Liquid Waste Management Plan (LMI 2016)). In summary, all materials are segregated based on waste type for placement in the on-site landfill, burning in the on-site burn pit or incinerator, or for shipment off site (hazardous or potentially salvageable materials). During the winter 2018-2019 gutting process, all materials are being segregated based on these same waste types and are being placed into empty sea cans or the cold storage building for summer landfilling or burning. The Landfill Management plan lists what is suitable for disposal in the landfill and the what can be burned in the on-site burn pit or incinerator. Hazardous materials are being placed into barrels or suitable shipping containers and are being shipped off site for disposal this winter

3.2 Responses to Comments on Chapter 4 of PRCU:

CIRNAC Comment: *In this chapter, Golder responded to CIRNAC Issues & Recommendation pursuant July 4, 2018 meeting in Yellowknife and July 5, 2018 site visit as provided in Attachment B of CIRNAC’s letter of November 2, 2018.*

Our comments on the Golder responses are as provided below. For ease of reference to the issues and recommendations, we have provided Attachment B as supplementary information at the end of this document

Golder replied that issues and recommendations associated with items 1 through 6 inclusive of Attachment B would be considered during the process of FCRP approval and water licence amendment and renewal.

We recommend that these items [items 1 to 6 inclusive of Attachment B of CIRNAC (2018a)] be included as part of the FCRP as appropriate.

Golder Response: LMI agrees that Items 1 to 6, and all other relevant questions on the FCRP will be addressed in the FCRP review process.

With respect to Item 7, Golder notes that the Dam M earthwork was carried out in 2016 as part of tension crack earthwork stabilization work on Dam M and made reference to a “2017 Lupin Mines Tailings Containment Area Geotechnical Inspection” report (Norwest, 2017). No specific references to the contents of the report were provided in Golder’s response.

Given this response, several comments/ questions arise:

- 1) **CIRNAC Comment:** It is unclear without further review to assess the findings of the inspection report

Golder Response: The inspection report is available on the NWB .ftp site at the following link: [ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-LUP1520%20LMI/3%20TECH/4%20WASTE%20DISP%20\(D\)%20\(E\)/E%206%20Annual%20Geotechnical%20Inspection/2017/](ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-LUP1520%20LMI/3%20TECH/4%20WASTE%20DISP%20(D)%20(E)/E%206%20Annual%20Geotechnical%20Inspection/2017/) Section 3.4 of that report outlines the repair procedures and the status of Dam M as inspected by the TCA engineer of record during his inspection. Table 3 of that report compares the status in 2017 to that observed in 2016.

- 2) **CIRNAC Comment:** As the work was done to address issues in the existing structure, should the work not be classified as ongoing maintenance and repair as opposed to progressive reclamation?

Golder Response: No, LMI's security cost estimate filed with its renewal application in February 2014 did not include riprap for dam repairs. CIRNAC requested during the water license process that LMI include dam repairs and that it must include the Dam M tension crack repair. CIRNAC advised that if LMI abandoned site that CIRNAC would be responsible for the repair. LMI agreed to include a line item for dam repairs, including the Dam M repair. As a result, in December 2014 LMI submitted a revised security cost estimate to include the dam repair. LMI is now requested that they be given a reduction in security for the repairs completed in 2016 as agreed to with CIRNAC in 2014.

- 3) **CIRNAC Comment:** *If the latter, given that the work was done in 2016 has it not already been included in the 2018 reclamation reduction?*

Golder Response: No, it was not one of the items that were considered in Amendment No. 2.

- 4) **CIRNAC Comment:** *Golder further states in respect to Item 7, that "at closure a dozer will be used to re-slope the existing materials used to construct the above to a minimum of 2:1 and up to 2.5:1 as directed by the EOR. The existing esker materials will be used to re-slope in addition to the existing rip-rap." This is a fundamental change to the approved ICRP which specifically committed to a "major program of dam enhancement" in which the sides of all dams will be brought to 2.5:1 slope by the addition of through the addition of quarried rip-rap."*

Golder Response: There are no plans to deviate from the overall intent of the ICRP and the work done to repair the tension cracks and toe erosion at Dam M was carried out according to the engineering recommendations of the EOR. Re-sloping to 2.5H:1V was not part of the geotechnical recommendations for the stabilization work and all work occurred above the final closure water level elevation. The stabilization buttress was constructed as per EOR instructions and boulders sourced from the esker borrow source were used as armoring materials to protect the toe of the buttress. The final configuration of all dams, including Dam M, will be part of the discussion during the review of the FCRP.

- 5) **CIRNAC Comment:** *Golder state [In response to Item 8] that "rip-rap salvaged from the higher elevations of the dams will be placed at the toe of the dams where they will be exposed to wave action, and only if the rip rap in those areas is deemed inadequate." They go on to say that "the dams will be re-sloped as per the direction of the EOR and there are no plans to use rip rap in general to flatten the slopes".*

The responses provided by Golder in regard to Item 8 are troubling. The responses clearly indicate LMI is expecting to implement a fundamentally different approach toward final embankment than has been approved in the ICRP and its predecessors which committed to placement of addition clean rip rap to ensure 2.5:1 outer slopes on all embankments for final closure.

Reference is made to re-use of existing rip rap from the upper portion of the dams. As the dams were constructed of waste rock, much of which is now known to be PAG, this would mean that potentially PAG waste rock would be used in this regard.

Golder Response: The rip rap are boulders sourced from the esker. They are not waste rock material. Similarly, the TCA external dams themselves were constructed of esker material, not using waste rock. No geochemistry testing was done on the esker materials as they are alluvial materials that are deemed inert.

- 6) **CIRNAC Comment:** *Golder statement that the placement of “rip rap will only occur in areas where the toe of dam will be exposed to wave action, and only if the rip rap in those areas is deemed inadequate” casts uncertainty on the entire design basis of embankment stabilization and is inconsistent with the approved design concepts as provided in the ICRP. These statements suggest a design build field fit approach by the proponent which is substantially different than the ICRP commitments.*

Golder Response: The final configuration of the TCA dams will follow engineering drawings that will be prepared by the EOR and these will be discussed in the FCRP review process. In dam engineering there is an important distinction made between “rip rap”, which is heavy material designed to resist wave action and “erosion protection”, which is finer than rip rap and is used on the upper part of the slopes to resist the effects of runoff.

- 7) **CIRNAC Comment:** *In response to Item 9 Golder states unit costs for rip rap will be lower, as to the degree that rip rap is needed, rip rap will be salvaged rather than quarried. Golder have nonetheless still used the existing unit cost of 15.20/m3 as carried in the security estimate.*

Golder Response: This comment is not material to the credit request.

- 8) **CIRNAC Comment:** *We re-iterate our comment that this is a material change regarding existing commitments related to embankment stability and that the costs carried in the ICRP estimate were in fact for esker material placement not rip rap placement. We also note that the final engineering designs should be provided for review to ensure that all applicable details are considered and included when placing rip-rap (e.g. will geotextile be placed to improve the performance of the rip rap cover over esker materials on the toe of slope if this alternative approach to stabilizing the Dam is accepted).*

Golder Response: The final configuration of the TCA dams will follow engineering drawings that will be prepared by the EOR. and these will be discussed in the FCRP review process

- 9) **CIRNAC Comment:** *Golder acknowledged the need to add cost for an engineered permanent portal plug.*

Golder Response: This item not material to the credit request. This has been acknowledged and will be discussed in the FCRP review process.

- 10) **CIRNAC Comment:** *Golder confirmed CIRNAC observation that LMI’s waste rock management strategy as stated is different from that approved under the ICRP. Golder indicated that notwithstanding the changed approach, that the cost allowance for waste rock management remained unchanged.*

Golder Response: This item is not material to the credit request. This will be discussed during the FCRP review process.

- 11) **CIRNAC Comment:** *Golder stated that the changed approach between the ICRP and FCRP will be discussed during the approvals process.*

Golder Response: Golder confirms.

4.0 RESPONSES TO ATTACHMENT 2

Attachment 2 to CIRNAC (2018b) is appended to this document for reference. Attachment 2 contains 8 points which are responded to in order below:

- 1) **CIRNAC Comment: Underground Workings –** *This issue is acknowledged to have been resolved.*

Golder Response: Golder confirms.

- 2) **Tailings Impoundment -**

- a. **CIRNAC Comment:** *The placement of esker material at Dam M would be considered an operation and maintenance (OM) activity and not reclamation work as this work was required to address stability issues as identify by SRK and Norwest. Per Golder's and LMI's statements the current PRCU is based on the ICRP and not the FCRP and as such the security related to the placement of rip rap should remain in its entirety. If Norwest provides assurances and design details confirming the work completed to date will provide a stable long-term solution and incorporates them into the FCRP, then LMI could then claim for relief of the security associated with this reclamation work. At this time given we are only considering the ICRP we cannot accept the security relief being claimed by LMI.*

Golder Response: See responses in Section 3.0

- b. **CIRNAC Comment:** *The volume of esker material placed to the end of the 2018 field work season is based on truck counts and not the in-situ volume of material placed and compacted. In order to confirm a metre of material has been placed and to get relief on security for the work done in this regard, the volume provided should be based on topographic survey quantities so as to confirm the proper cap has been placed and to avoid the potential for overstating the amount of work done to date.*

Golder Response: The thickness of the esker fill placed in the TCA was controlled to 1.0 m thickness using grade stakes. The calculation of the area covered has been reduced by 5% from truck volumes to account for compaction and any inadvertent placement to slightly greater thickness.

- c. **CIRNAC Comment:** *The claim for the removal of the tailings line should be based solely on the amount of piping removed to the end of September 2018. No credit should be given for forecasted work as this can be claimed for next year per the terms and conditions of the Water Licence. No advantage or protection to the Crown or KIA in the event that the work is not done by LMI.*

Golder Response: The updated PRCU cost estimate (Appendix B) correctly indicates that 4,000 m was removed by September 2018 and that the remaining 4,500 m is planned to be removed over the winter of 2018-2019. Together, this makes up an anticipated credit for the removal of 8,500 m of pipeline. This is not part of the current (July 5, 2018) credit request, rather it is included as part of the June 2019 request. See also comment to 2e below.

- d. **CIRNAC Comment:** *No concerns with the balance of the security amounts shown for the work completed to date.*

Golder Response: This acknowledges that balance of the security amounts for the work completed to date (i.e. the July 2018 figure) is acceptable.

- e. **CIRNAC Comment:** *I have reservations releasing additional security for work forecasted to be completed in 2019. LMI can apply for the additional release of security next year once the work is completed. NWB are under no obligation to release security for reclamation work not done.*

Golder Response: The estimate for the planned winter work (for this item and all other items) was provided in direct response to a request from the NWB (2018c) for an indication of the planned work schedule. Works 'yet to be completed' will be addressed in a security reduction request at the appropriate time and LMI is not currently seeking credit for 'planned' works.

3) **Waste Rock Pile –**

CIRNAC Comment: *No issues with the security as discussed in the context of the 2017 security review by Knight Piesold, however it is unclear how the security required to mitigate the issues with PAG rock at the mine site has been included in the PCRU.*

Golder Response: The PRCU did not make any change to the security estimate for management of the waste rock. It remains as per the KP (2016) estimate.

4) **Equipment and Buildings –**

- a. **CIRNAC Comment:** The removal of glycol, oils and other hazardous materials is forecasted to be completed in winter 2019 and as such LMI should not get security relief for work yet to be completed.

Golder Response: The estimate for the removal of glycol, oils and other hazardous materials forecast to be removed in the winter of 2018-2019 was provided in direct response to a request from the NWB (2018c).

- b. **CIRNAC Comment:** *Decommissioning of equipment and preparation of buildings for demolition work is scheduled for 2019. We recognize the dollar amounts presented by Golder/LMI are reasonable and reflective of the work to be done (except related to the demolition of the oil/fuel storage tanks) it is the timing of the security relief that is in question. There is no advantage to the Crown or the KIA to give LMI relief for work yet to be completed.*

Golder Response: The estimate for decommissioning of equipment and preparation of buildings for demolition forecast to be undertaken during the winter of 2018-2019 was provided in direct response to a request from the NWB (2018c).

- c. **CIRNAC Comment:** *Applying a 0.67 ratio for the decommissioning of the various tanks on site is not reasonable given that the work scheduled in 2019 is only related to the small tank assemblies. The 15 large ASTs will require substantially more effort to decommission and as such represent more than half the work related to this task. A ratio of 0.33 would be reflective of the work required to decommission the 26 smaller ASTs.*

Golder Response: This appears to have been misunderstood. The PRCU proposes a 33% reduction in the security amount, leaving 67% remaining.

5) **Chemicals –**

- a. **CIRNAC Comment:** *The additional security added in by LMI for the management of asbestos on site was not included in the original ICRP or the KP security estimate. As such given that LMI is planning to remove the asbestos in 2019 there is no point to adding this item in to the PRCU as the security estimate will need to be updated for the FCRP. We need to check if the FCRP has already been updated to address this issue.*

Golder Response: It is correct that the additional security was not in the original KP cost estimate. In Amendment No. 2, the NWB correctly added \$387,602 as a recognized debit item, thus increasing the security and reducing the amount of the credit. The cost table in Appendix B has been corrected in this regard. (The debit item in July 2018 has been deleted because, together with the debit in Amendment No. 2, it double counted this item.)

- b. **CIRNAC Comment:** *Hazardous waste removal is scheduled for 2019 however given that this work has yet to be completed it should not be included in the PRCU. There is no advantage to the Crown or the KIA in relieving LMI of their responsibilities in this regard. LMI can apply for the relief once the work has been executed.*

Golder Response: The estimate for the removal of hazardous waste during the winter of 2018-2019 was provided in direct response to a request from the NWB (2018c).

- c. **CIRNAC Comment:** *LMI is claiming that 500 m3 of hydrocarbon impacted soil has been successfully treated at the landfarm. No supporting documentation has been provided to confirm this amount. It is difficult to provide LMI will relief in this regard given the absence of information. Assuming the annual report may provide the necessary back-up.*

Golder Response: The 500 m³ has been picked up and placed in the landfarm and it has been partially remediated. Remediation needs to be completed and the material removed for use elsewhere. The claim for credit has been reduced to 67% to acknowledge work done and work that remains to be done.

- d. **CIRNAC Comment:** *Credit for an environmental site assessment per Addendum No.2 is odd and not consistent with my understanding of this task. I don't know why LMI thinks they have relief for this security. I have not read Addendum No.2 so it is unclear to me if this is in fact a correct statement. Seem illogical that CIRNAC would accept this. Note that LMI did do some ARD work but this line item is not intended to cover additional work required by the proponent to address new issues that come to light.*

Golder Response: The credit for the ESA has already been accepted in Amendment No. 2. There is no claim for further credit in the current credit update.

6) **Mobilization –**

- a. **CIRNAC Comment:** *LMI has claimed for reduction of approximately 550k for mobilization. In their document LMI outlines the viable equipment on site as of July 2018. We are not sure what the mobilization costs relate to and would suggest that LMI provide additional information as to what the mobilization reductions costs relate to and provide some documentation confirming that the equipment operational for intended remedial works of 2019 onward*

Golder Response: The July 2018 credit of \$550K is for operable equipment currently at Lupin. The inventory claimed comprises: 1 excavator, 1 dump truck, 1 dozer and 2 light duty vehicles. Having this equipment at Lupin will reduce the requirement (per the KP (2016) cost estimate) to mobilize further equipment over the ice road.

- b. **CIRNAC Comment:** *Claim for mobilization in 2019 should not be included in the PCRU as the work has not been done. As previously noted, there is no advantage to the Crown or KIA to accept this claim.*

Golder Response: The estimate for the mobilization of equipment from Ulu to Lupin during the winter of 2018-2019 was provided in direct response to the request from the NWB (2018c). LMI is currently receiving bids from Contractors for the implementation of closure. The successful Contractor will mobilize a fleet of equipment to Lupin that he judges to be necessary. The Contractor has the choice of using the Ulu equipment or bringing some or all of the fleet to site by ice road. In either case, equipment mobilization will be completed prior to June of 2019 and a credit for that will be claimed at that time.

- c. **CIRNAC Comment:** *(As an aside, it is not clear how the work related to the movement of equipment from Ulu plays out in the Lupin security as the Ulu site has its own security. I am assuming the two securities remain separate.)*

Golder Comment: LMI confirms that the two securities remain separate.

7) Post-closure Water Treatment –

CIRNAC Comment: *The volume of water being claimed is supported by documentation provided. However, it is possible this is more likely part of the annual care and maintenance requirements and not part of the year 1-10 post closure water treatment. This should be clarified.*

Golder Response: The treatment and release of water during 2018 resulted in the lowering of the pond water level by about 2.0 m, approximately to its proposed final closure water level. It is planned to complete the closure measures in 2019. As such, the treatment and release of about 2.0 Mm³ of water during 2018 is part of closure implementation, not care and maintenance.

8) Other Indirect Costs –

CIRNAC Comment: *The amount claimed for these tasks should be recalculated based on the updated PRCU amounts. Given the dialogue noted above we would expect the dollar amounts claimed by LMI to be reduced.*

Golder Response: Three items under Other Indirect Costs (i.e., Engineering, Project Management and Contingency) are calculated as percentages of the direct costs. In the cost update table in Appendix E, changes in the amount of direct credits have been automatically updated.

5.0 UPDATED COSTS

The spreadsheet in Appendix B provides updated calculations of the following:

- 1) The value of the progressive reclamation work that had been completed as of the site visit of July 5, 2018, (bordered in yellow) and
- 2) The value of the progressive reclamation work that is planned to be completed over the winter of 2018 – 2019.

In both cases, the values were calculated with specific correspondence to the items, quantities and unit costs used in the estimate of KP (2016). The items (totalling \$5,345,000) that were included in the security reduction under Amendment No. 2 are identified separately. The incremental reduction in security (over and above Amendment No. 2) that was in place as of July 5, 2018 is estimated at \$3,197,697.

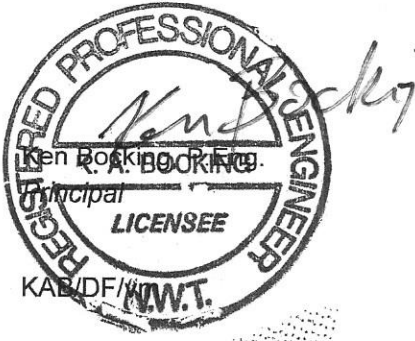
The further incremental reduction in security that will be in place as of the end of the winter of 2018 – 2019 is now estimated at a further \$3,072,810. This estimate is provided in direct response to a request from the NWB (2018c) for an indication of the planned work schedule. LMI is not currently seeking credit for these estimated 'planned' works. Works 'yet to be completed' will be addressed in a security reduction request at the appropriate time with appropriate adjustments for actual quantities

6.0 CLOSURE

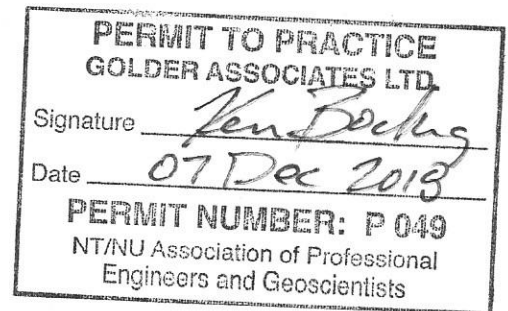
The current Type A Water Licence requires a total security of \$29,305,000 to be posted with the Minister. To account for works completed and inspected as of July 5, 2018, LMI is requesting a reduction in security in the amount of \$3,197,697.

We trust this report adequately addresses the additional questions raised by CIRNAC in response to the PRCU. If you have any questions on this report, please do not hesitate to contact us.

Golder Associates Ltd.



Dionne Filiatrault, P.Eng.
Project Manager



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6.0 CLOSURE

The current Type A Water Licence requires a total security of \$29,305,000 to be posted with the Minister. To account for works completed and inspected as of July 5, 2018, LMI is requesting a reduction in security in the amount of \$3,197,697.

We trust this report adequately addresses the additional questions raised by CIRNAC in response to the PRCU. If you have any questions on this report, please do not hesitate to contact us.

Golder Associates Ltd.

Ken Bocking, P.Eng.
Principal

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Project Manager

KAB/DF/vm

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APPENDIX A

Letter from NWB to LMI – NWB
2018(c)

APPENDIX B

Photos of Piping Removal



Figure 1 - Looking Cell 3 Left and Cell 4 Right – Pipeline removed (ran along internal dam shown)



Figure 2 - Cell 5 Tailings pipeline removal

APPENDIX C

ChemKleen Tank Certification

APPENDIX D

**2015 – 2018 Waste and Hazardous
Waste Removal and KBL Manifests**

APPENDIX E

Updated Estimate of Progressive
Reclamation Credit

APPENDIX F

Attachment 2 to CIRNAC (2018b)