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May 26, 2021

Mr. Richard Dwyer, Manager of Licensing
Nunavut Water Board
Gjoa Haven, NU

Via Email: licensing@nwb-oen.ca

Re: 2AM-LUP2032 Lupin Mines Incorporated Final Post Closure Monitoring Plan

Dear Sir:

This is the submission of the Kitikmeot Inuit Association (“KIA”) in response to the Lupin Final Post-Closure Monitoring Plan (PCMP) for water license 2AM-LUP2032 made by Lupin Mines Inc. (LMI) on April 9, 2021.

I. BACKGROUND:

The KIA is the Regional Inuit Association for the Kitikmeot Region of Nunavut and the Designated Inuit Organization for Article 20 of the Nunavut Agreement for the Kitikmeot Region. The KIA is not a regulating agency with respect to this project, however we are representing Inuit interest due to the historic importance of Tahikyoak (Contwoyto Lake).

KIA has reviewed the materials filed in support of the PCMP by LMI. We have been assisted in this review by Mr. Steve Januszewski, P.Eng., of SteveJan Consultants Inc. (SJCI).

KIA staff and advisors have reviewed the submitted materials by LMI during the preparation of this submission to the Board.

II. KIA SUBMISSIONS:

KIA’s resources are limited and our work reviewing LMI’s submitted materials benefitted from retaining SJCI to assist in the review. Furthermore, the SJCI technical memorandum in response to LMI’s Lupin PCMP is enclosed and forms the submission.



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The KIA thanks the Board for the opportunity to address our concerns regarding this file. Should you have any questions or would like any clarification, I can be contacted at srlands@kitia.ca or by phone at (867) 982-3310.

**ALL OF WHICH IS RESPECTFULLY SUBMITTED:
ON BEHALF OF THE KITIKMEOT INUIT ASSOCIATION**

A handwritten signature in black ink, appearing to read "Wynter Kuliktana".

Wynter Kuliktana
Senior Lands Officer
Department of Lands, Environment & Resources
Kitikmeot Inuit Association

Cc: Geoff Clark, Kitikmeot Inuit Association Director of Lands, Environment and Resources

Enclosed: SJCI Techncl Memo Review of LMI Final PCMP 2010520.pdf



SteveJan Consultants Inc.
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CANADA
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TECHNICAL MEMORANDUM

Date: May 20, 2021

Subject: SJCI Comments on Lupin Mine Inc.'s Final Post-Closure Monitoring Plan Document as Required Under NWB Water Licence 2AM-LUP2032

1. INTRODUCTION

On behalf of the Kitikmeot Inuit Association (KIA), SteveJan Consultants Inc. (SJCI) has undertaken a review of the Lupin Mines Incorporated (LMI) Post-Closure Monitoring Plan (PCMP), in its final form as submitted to the Nunavut Water Board (NWB) on April 9, 2021 for distribution to stakeholders for review. The Plan is a requirement of Water Licence 2AM-LUP2032 for the Lupin Mine as the Company undertakes final closure and reclamation of the site.

The KIA is a stakeholder in the current Lupin Mine closure review process. Mr. Januszewski, Principal Engineer at SJCI has been retained by the KIA to assist in the review of several LMI documents as they pertained to several conditions in the new Water License and the latest Final Closure and Reclamation Plan (FCRP) amongst others. SJCI has been asked by the KIA to review the most recent LMI submission, the final PCMP.

The KIA appreciate that they were able to engage in an iterative review process with LMI in providing comments on several documents for the Lupin site including the PCMP.

As part of the review of the first two revisions of the PCMP, SJCI provided comments through the KIA to LMI and the other stakeholders. LMI responded to the first SJCI review with a written March 16, 2021 Response. A March 25, 2021 "Teams" teleconference consultation session hosted by LMI followed. It included LMI, their consultants and the various regulatory agencies' representatives including SJCI on behalf of the KIA. SJCI then submitted a Technical Memorandum dated March 26, 2021 which was subsequently forwarded by the KIA to LMI for their consideration on March 26, 2021. No follow-up comments on it were received from LMI.

Mr. Januszewski has over 25 years experience in general mine closure work, notably with northern sites. This memorandum is a general high-level review of the final PCMP document and not a specialized detailed engineering or scientific review.

Due to the tight timeline for completing this report, neither a technical nor senior review of the draft report were undertaken, by a third party.

2. GENERAL COMMENTS

The PCMP generally meets the requirements of it as stated in the listing provided in Schedule J: Conditions Applying to Monitoring of Water Licence 2AM-LUP2032.

3. LAYOUT OF REPORT

This memorandum is considered a follow-up to the earlier SJCI reviews (dated March 8 & 26, 2021) of the two previous revisions of the PCMP (i.e., Revs. A & B).

This memorandum flags changes between the two previous draft versions of the PCMP and the final version, but especially issues that are considered to still remain. It does not comment on every element of the final PCMP.

4. COMMENTS ON CHANGES IN THE FINAL PCMP

The main issues that were raised in the earlier SJCI reviews that still remain and how those points were or were not considered in the final PCMP are provided in this section.

4.1 Duration of Post-Closure (PC) Monitoring Phase

The final PCMP continues to refer to the PC phase as being 5 years long, i.e., from 2022 to 2026. A number of examples are present within the final version that acknowledge monitoring will continue beyond then, for as long as required, with the minimum being to February 27, 2032 when the current Water Licence is due to expire. However, not in all cases.

In Section 6.2.1-Site Inspections, is the first mention of a Phase 3 – Passive Closure Period. The next paragraph in the PCMP discusses components of the visual inspections, presumably referring to those to be undertaken during the Phase 3. It is unclear why this additional Phase has been included here and only here.

4.2 Focus on Including Text on How LMI can Reduce Monitoring Requirements (Sec. 6.2.6)

Although the text now has a section titled Adaptive Monitoring, only a brief mention is made of the possible need for enhanced monitoring while several subsections within the above titled section elaborate on how reductions in monitoring requirements at the site can be undertaken.

4.3 Lowering Discharge pH Limits to 5.5 from 6.0 (Sec. 6.2.3)

The PCMP continues to promote the idea of a pH 5.5 lower site-specific trigger limit for the TCA and its discharge versus the federal and NWB Water Licence lower limit of 6.0. The PCMP lists several lower pHs measured at a number of water quality monitoring sites in the surrounding water bodies of the TCA as it did in the earlier versions of the PCMP. However, a pH at or near the proposed lower pH limit in the TCA

could be an indication that the soil cover over the previously exposed tailings is not effective and that acid generation is occurring. A defensible case (with significantly more data than shown in the PCMP) would need to be made within an application to the NWB for a lowered pH trigger point for discharges from the site to be considered.

Text in Section 6.2.2-Tailings Containment Area PC Monitoring goes on to outline how monitoring could be reduced even when pHs are around the 5.5 value. And if pHs were found to be below 5.5 and dropping it proposes using the same monitoring frequency as in Phase 1, which for LUP-10 (Pond 2 Discharge at Dam 1A) is weekly during discharge versus twice yearly during Phase 2 at LUP-10b (new spillway). When pHs are around the lower limit, be it 6.0 or the suggested 5.5, monitoring frequency should be increased, with additional sampling within the TCA itself being required to help identify where the lower pH could be coming from to then enable remedial measures to be implemented.

The possible ramifications of allowing a lower pH lower limit at the TCA discharge and suggested adjustments to monitoring frequencies are unjustified, with the suggestion that downstream natural lake pHs are below 6.0 and therefore, the discharge limit from the TCA should be less than 6.0. A comprehensive defensible case should be required to enact such a change.

4.4 Lack of Contingency Plans or AMPS in the PCMP

The Mar. 16, 2021 LMI response memo to the SJCI draft comments on the first draft PCMP querying the lack of contingency plans mentions that they will need to be submitted to the NWB for their approval and do not fit in a PCMP type document. However, the PCMP should be comprehensive and include discussions on what contingency plans and adaptive management plans (for both better and worse monitoring results) or the frameworks for them as to what they may look like in a follow-up detailed procedures type manual. The LMI response to the SJCI draft comments claims the PCMP has an Adaptive Management framework included in it. The PCMP has no such framework, only several sections of text outlining how it can reduce monitoring requirements. The LMI response goes on to say that their inclusion of plans (“guiding principles” according to the PCMP text) on how LMI can reduce monitoring requirements with the body of the PCMP is acceptable.

The lack of Adaptive Management Plans or Contingency Plans continues to be the case in the final PCMP as is found in Section titled 6.2.6–Reductions in Adaptive Monitoring Requirements (previously Section 6.2.2 in earlier revisions of the PCMP). That is not an Adaptive Management Plan or framework, or a Contingency Plan. It is a plan on how to reduce monitoring requirements. As a minimum, the alternative scenarios and corresponding response plans should be described in the document.

4.5 Need For Consultation With Local Stakeholders During C&M and Active Closure Phases

LMI led 2 teleconference calls with regulatory stakeholders in March of 2021 and some items of concern were considered in the final version of the PCMP.

A teleconference call with the community of Kugluktuk continued to be promoted to LMI in discussions and review comments to them. A last minute (i.e., 2 day) invitation to Kugluktuk was made in a single

limited distribution website by LMI for an April 8, 2021 web-based teleconference. However, there were no respondents. A more concerted effort by LMI should be made in the future if the company wants to be able to claim they've included the community in their stakeholder interactions, albeit this being their first attempt and it being near the end of the implementation of the Lupin Mine's reclamation and closure plan and well beyond the planning stages when the input would have been most beneficial.

It is hoped that LMI will continue to engage with Kugluktuk and other area stakeholders as the Active Phase continues this year and rolls over into 2022 when major equipment demobilization is undertaken, and the site then heads into the Passive Monitoring Phase and there may be opportunities for the community to be involved.

4.6 Continued Operation of the Site's Automated Weather Station

Text concerning the automated site weather station is absent in the final PCMP. The second stakeholder teleconference raised the possibility that the automated station could continue to be utilized as it would generate useful information, although it would likely be up to ECCC as the owners of the station to do so and not LMI. The author has not heard any further updates on this possibility.

4.7 Getting All Geo-Technical Instrumentation Installed and Operating

With new instrumentation being planned for installation (as per Table 13) it is hoped that LMI will utilize the same equipment to replace the non-operational or problematic existing instruments on site. The final PCMP also mentions the possible plans to install volumetric water content probes within the TMA Cell Nos. 3, 5 and N (Sec. 6.2.5).

Section 7.4 also mentions the proposal to report on geotechnical data less frequently than every year during the P-C Monitoring Phase. The proposal is to drop it to every 3 years, then 5 and then every 10 years. This is in contravention to the schedule shown in Table 13 of the PCMP. Annual downloads of instrumentation and geotechnical inspections could be accommodated during scheduled annual site inspections and water quality sampling campaigns during the Post-Closure Phase as is specified in the Water License. Any adjustments to reporting requirements need to be negotiated with NWB and its stakeholders and will only be considered when a defensible case for that change can be made.

5. CONCLUSIONS

A number of improvements have been made in the Final PCMP compared to its earlier versions. This includes some mention of a potentially longer Post-Closure Phase, minor updating of figures, etc.

However, the document continues to fall short on addressing the deficiencies flagged previously by this reviewer including;

- Not providing Standard Operating Procedures (SOPs) or as a minimum to state a commitment to provide for them in the future for persons required to undertake the monitoring;
- Continuing to promote the use of a lower pH limit of 5.5 for the TCA discharge;

- For not providing any Adaptive Management Plans or Contingency Plans for the most likely issues which could arise during the Active and Post-Closure Phases that would be best outlined in advance rather than being left to contractors with limited knowledge and time to deal with the problems as they may arise;
- Continuing to promote the idea that the P-C Phase will be only 5 years in duration;
- Not including the local stakeholders (esp. the hamlet of Kugluktuk) in the development of the various plans for the site, including their possible direct involvement.

The following text is extracted from the March 8, 2021 draft SJCI Technical Memorandum with comments on LMI's first draft of the PCMP, and is still considered valid;

The main concern of the KIA concerning the future of the Lupin mine site after closure and active reclamation work is completed is the need for a regular presence to ensure it returns to a long-term sustainable environment.

Although the KIA are a secondary stakeholder in the project and in the review process, it is in their best long-term interest that the site be properly remediated and closed. The site is located in the Kitikmeot Region of western Nunavut. Section 1.3.5 of the recent FCRP document states *"...The KIA is the entity responsible for defending, preserving and promoting social, cultural and economic benefit to Inuit in the Kitikmeot Region..."* CIRNAC is the lead regulatory agency (as the site is located entirely on federal crown lands) overseeing the closure, reclamation and monitoring programs' implementation and as such are responsible for the Lupin Mine's ultimate and final closure that meet all the closure requirements and objectives.

The appropriate regulatory agencies will need to carefully monitor progress in implementing the closure tasks, to ensure they are undertaken safely and as per the approved FCRP and PCMP and supporting documents. This should involve timely reviews of submitted progress reports, monitoring data reports, regular annual reporting, meeting specified commitments, etc. These need to be supplemented by regular site inspections, especially during the Active Closure Phase when a significant amount of work towards properly and permanently remediating the site remains to be undertaken. And this needs to be followed-up during the P-C Monitoring Phase to confirm the site is stable and performing as planned.

<Original signed by>

S. Januszewski, P. Eng. (BC)
Principal Engineer
SteveJan Consultants Inc.