



Energy, Mines and Resources  
Box 2703, Whitehorse, Yukon Y1A 2C6

May 22, 2015

Mr. Jing Yu Lu  
Chief Operating Officer  
Yukon Zinc Corporation  
#410-700 West Pender Street  
Vancouver, BC V6C 1G8

Dear Sir

**RE: AMENDMENT TO PLANS UNDER QML-0006 –  
DISPOSAL OF SPECIFIED REAGENTS ON-SITE AT WOLVERINE MINE**

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I am in receipt of a letter dated May 21, 2015 from Mr. Malcolm Swallow (the "letter"), on behalf of Yukon Zinc Corporation ("Yukon Zinc" or "Licensee"). The letter speaks to a number of matters, including the disposal of certain mill reagents located on-site at the Wolverine minesite (the "site") into the tailings storage facility (the "facility") located at the site.

The mill reagents proposed for disposal into the facility are set out in paragraphs 1 and 2 of the letter. These paragraphs also detail the amounts to be disposed of in the facility. For reference, I have appended the letter to this document.

Paragraphs 6.2 and 6.3 of Quartz Mining License QML-0006 (the "Licence"), issued to Yukon Zinc on December 5, 2006, state:

6.2 Where the Licensee wishes to undertake and activity other than as described in an approved plan, the Licensee must submit to the Chief for approval a document describing the proposed change or a document updating the entire plan and including the proposed change and where such document is approved, the document shall replace the previously approved plan, in part or in its entirety, as the case may be.

6.3 The Chief may approve a plan subject to any terms and conditions considered appropriate by the Chief and where such terms and conditions are provided by the Chief in writing the plan shall be considered to be amended by the terms and conditions and the Licensee must implement the plan so as to include these terms and conditions.

On October 16, 2013, as noted in Schedule C of the Licence, the following plans were approved by the Chief of Mining Land Use:

- a. *Wolverine Mine Reclamation and Closure Plan, Version 2013-05*, dated July 17, 2013,
- b. *Waste Management Plan, V2010-03*, dated February 4, 2011; and
- c. *Spill Contingency Plan V2010-03*, dated March 10, 2011.

Each of these approved plans refers to management of reagents. The request to deposit the specified reagents into the facility represents a deviation from each of the approved plans. However, on the basis of paragraph 6.2, I am prepared to accept the letter as a document describing the proposed change and in accordance with paragraph 6.3 of the Licence approve an amendment each of the plans as follows.

1. The reagents identified in paragraph 1 of the letter (i.e. cyanide, flocculant and various laboratory reagents) may immediately be deposited into the facility on a one-time basis. Only the amount of each reagent set out in paragraph 1 of the letter may be deposited.
2. The twenty (20) totes of SMBS, as described in paragraph 2 of the letter, must immediately be restacked, re-packaged, as necessary, and protected from sun damage. The totes may remain on the facility wall temporarily and may be deposited into the facility when authorized by an inspector.

For greater certainty, the sections or tables, as noted below, of each of the above-noted approved plans are amended by the two preceding paragraphs.

The relevant sections in the plans itemized above are hereby replaced, to require the disposal of mill reagents into the TMF in accordance with the proposal.

- a. *Wolverine Mine Reclamation and Closure Plan, Version 2013-05*, section 3.1;
- b. *Waste Management Plan, V2010-03*, table 4.1; and
- c. *Spill Contingency Plan V2010-03*, Appendix B.

For greater clarity, the handling and/or disposal of other reagents and chemicals that are not proposed to be transferred to the facility, as described in the letter, are not approved.

Yours truly,



Robert Holmes  
Director, Mineral Resources

- cc. Carola Scheu, Director Yukon Water Board Secretariat  
Heather Jirousek, Director, Water Resources  
Justin Hooper, Natural Resources Officer - Mining  
Lorraine Millar, Manager, Mineral Services

21/05/2015

Robert Holmes  
Director  
Yukon Mineral Resources Branch, EMR  
By e-mail

Dear Bob,

**Re: Telecon. – 20<sup>th</sup> of May 2015.**

Further to our telephone conference call yesterday, the following note is intended to reflect the matters discussed and agreed.

1. Regents to be disposed into the Tailings Pond as part of the reagent clean up exercise. Following on from our discussion, I understand that the only reagents that EMR would wish to be disposed of in the tailings dam at this time are:

Reagent	Amount to be washed to TSF - Kg	Total to be disposed in TSF	Amount washed into TSF from prior operations- Kg	Percentage increase in reagent content.
Cyanide	78% of Contents of Ready use tank – pre-diluted	82.1 Kg	88,845 Kg	0.084%
Flocculant	125Kg mixed in open ready use container	125 Kg	85,270 Kg	0.176%
Various Laboratory reagents in small volumes.	Currently includes 112L of Acetic Acid and 5 small pails of lead monoxide.			

2. The 20 totes of SMBS on the dam wall will be restacked, re-packaged as necessary and protected from sun damage. It is understood that while EMR is prepared to allow this to be placed in the TSF, they would prefer that this is completed close to winter freeze up.
3. The remaining 200 totes of SMBS will be repackaged as appropriate and placed into long-term secure storage into the CLO as soon as space is available. This material will be available to EMR to vary the chemistry in the TSF and can be easily mixed back into the TSF as required.
4. The Xanthates and other collectors in damaged barrels, (PAX and SIPX, etc.,) will be over packed into totes with the tops cut off for secure storage and then placed in a secure area, pending review of disposal options off site.
5. All remaining reagents will be re-packed as appropriately and stored securely on site, pending transfer to other operating mines. YZC has already arranged of the transfer of an amount of reagent to Cantung and is currently investigating the possibility of onward transfer of the remaining usable reagents. The primary aim of this exercise is to clearly identify the condition of each of the reagents and find homes for them at other operations wherever possible. YZC believes that the bulk of the reagents, if re-packaged where necessary, can be transported off site and used by other mining operations.

6. There was a question on the strength of the Cn in the holding tank. There are two separate reports on this. The first report suggests that the tank was washed out and refilled with a dilute solution of water and lime to neutralize the original contents. This was the procedure that was originally proposed in the JHA for the emptying of the reagent tanks on shut down. There is a second report that the tank was filled with a 950L mixed batch containing 100kg of Cn, giving a solution strength of 105.3g/L. The current volume of liquid in the tank is 780L. Thus in a worst case scenario, the total Cn to be placed to tailings would be 82.1Kg. To this would be added a very small amount of Cn that would be washed from the Cn preparation area during it's clean up.
7. We have no easy method to estimate whether or not the tank was flushed and re-filled. We would therefore prefer to treat it as filled with Cn and dump accordingly, using the appropriate methodology and PPE.
8. The water handling memo discussed amounts of water into the TSF. Not included in the memo were amounts due to direct precipitation into the TSF and evaporation. The Lorax report suggest that the precipitation amount for the site is 0.57 meters of rainfall per year and the evaporation amount is 0.24 meters per year. This results in net precipitation of 0.33m per year. The area of the top of the TSF is 138,487 m<sup>2</sup> as per the drawings. Thus the additional amount for rainfall, net of evaporation would be equivalent to 124.5m<sup>3</sup> per day, which needs to be added to the overall inflows to the pond.
9. Making an allowance for 1m of freeboard will remove 121,204m<sup>3</sup> of storage volume from the pond. Again, this was measured from the "as built". I will re-issue the water handling memo again with these changes incorporated.
10. We are installing some sort of measurement board into the TSF to allow measurement of the water contents on a regular basis without needing the surveyor. Once this is done, it will simplify the calculation of an accurate water balance.
11. I understand that EMR will issue the appropriate letter of approval to allow us to go ahead with the washing of the reagents to tails asap. We only have the reagent and clean up crew on site for another 6 days on the current schedule, so "time is of the essence."

Should there be any other questions on this matter, please do not hesitate to contact the author.

Sincerely,



MJA Swallow P.Eng.

**For and on behalf of Yukon Zinc corporation**

Attachments:- Revised Water Management Memo for Wolverine site – to follow under separate cover.