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To: Andrew Mitchell, Wolfden Resources

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Subject: Selenium Treatment at High Lake

While reviewing information on the High Lake Project, NRCan asked if selenium (Se) could be an issue. Specifically, Wolfden Resources Inc were asked if treatment for Se could be needed and to explain why it is not an issue if that is the case.

Mineral recovery testing showed that the tailings water could contain up to a maximum of 0.086 mg/L of Se. This soluble Se would continue through the tailings pond and through to the receiving environment. The resulting concentration of Se in the receiving environment is not expected to surpass CCME guidelines but it could approach it.

The current plan for the High Lake Tailings Containment Facility (TCF) will be to treat it for heavy metals and maintain the pond water within compliance throughout the mine life. This will be done with lime addition alone or in conjunction with ferric sulphate addition. This is not the preferred treatment for Se.

Se is not easily treated through conventional means. It is possible to use membrane processes, but to apply such a process on the entire tailings stream or on the TCF overflow is cost-prohibitive. It can be partially treated by ferric co-precipitation depending on its' form (SeO_3^- or SeO_4^-). Ferric is to be used in treatment at High Lake, and may likely partially decrease the concentration of Se. Unfortunately, Se treatment is best at neutral or slightly acidic pH, while the pH is intended to be maintained high to control heavy metal concentrations.

At this point, Se is not expected to be an issue, but a strategy for decreasing concentrations can be developed if the concentrations exceed expectations. For example, it may be possible to add excess ferric iron with the tailings discharge to adsorb some of the Se and decant it with the tailings. Se concentrations are expected to be low during the first years of operation and increase as the ore being milled is changed. If the initial concentrations exceed expectations, control measures can be developed before CCME guidelines are met (let alone exceeded) in the receiving environment.