NorthMet Mining Project and Land Exchange

Preliminary FEIS Extended Comment Form

Agency: **GLIFWC**

Comment #:

Comment:

GLIFWC Technical Review of the Mine Site MODFLOW Model

As commented in the GLIFWC letter of June 18, 2015, GLIFWC staff are very concerned about the level of scrutiny that the mine site MODFLOW model has received to date. In that letter, GLIFWC staff also detail the fatal flaws of the groundwater characterization and modeling and expand upon those concerns in a letter dated August 11, 2015.

We have learned from the MNDNR project managers that ERM and lead agency staff never ran the mine site MODFLOW model during their technical review. In fact, only the applicant's consultant (Barr Engineering) and Tribal staff have run the model and tested its functionality. It is surprising to discover that at no time during the eight years of project review have the lead agencies and/or their consultant tested how the model works. This fact leads to serious questions about the legitimacy of the conclusions reached by the ERM and lead agencies regarding the quality of the applicant's model.

As previously commented, the review of MODFLOW is documented in the water modeling data package v13. There are several factual errors in this review. For example, the reviewer identifies the model as a 7 layer model, when it is an 8 layer model; the reviewer identifies the software version as MODFLOW-NWT, when the base calibration modeling was done with MODFLOW-96 and the PCG2 solver; and the reviewer states that the effects of boundary conditions were evaluated when there was no evaluation of the effect of the P-M pit constant-head boundary conditions. These factual errors are readily apparent and serve to further undermine confidence in the model review.

Flaws in the MODFLOW model are particularly serious because as the GLIFWC letter of August 11, 2015 makes clear, the MODFLOW model is integral to the impact characterization in

most of the resource areas of the PFEIS. Had the lead agencies and their consultant run the mine site MODFLOW model, it is likely that the serious calibration errors described in the GLIFWC letters of June 18 and August 11 would have been discovered. This would have provided an opportunity for the errors to be corrected prior to the PFEIS. Despite the difficulty of correcting fundamental parts of the PFEIS at this late point in the NEPA process, the modeling errors must be corrected and proper impact characterization developed for the proposed project.