Disclaimer: This document is a working document. This document may change over time as a result of new information, further deliberation or other factors not yet known to the co-lead agencies.

EPA Comment #13: Page 5-61: the SDEIS shows that tailings leachate pH increases after 300 weeks, but does not show how leachate pH was extrapolated to the longer term, such as 50-100 years.
We understand this data is already available.

> **Recommendation:** The FEIS should show how leachate pH was extrapolated to the longer term, such as 50-100 years, through a graph or chart.

Response to EPA Comment #13: The pH in leachate from the various mining features was not predicted by the GoldSim model. However, the permanent subaerial waste facilities (e.g., Category 1 waste rock stockpile and tailings basin) would contain material that will never produce acidic leachate. The non-acid generating waste was identified using multi-year kinetic tests (humidity cells) on NorthMet rock samples, in which alkalinity released (by dissolution of the silicate minerals) exceeded acidity production (by sulfide-mineral oxidation) in all waste rock and tailings that contained less than 0.12% sulfide S. This <0.12% sulfide S threshold for selecting non-acid generation waste rock is further supported by long-term humidity cell tests on NorthMet waste rock (i.e., 42 samples of Category 1 waste rock, with tests now run for over 450 weeks; and 33 humidity cell tests run between 84 and 304 weeks [Waste Characterization Data Package v10, Section 4.3 and Attachment E, respectively]). These tests demonstrate that tailings and Category 1 waste rock do not generate acidic leachate, and acid generation rates decreases by depletion of sulfide S minerals.

Regarding the tailings in particular, the pH in the flotation tailings humidity cells have been observed to be stable or increasing between 100 and 300 weeks of humidity cell testing. However, pH of the flotation tailings in the GoldSim model is not directly based on, or extrapolated from, the observed pH in the humidity cells. This is because the neutralization mechanism for NorthMet tailings is understood to be silicate mineral dissolution, not carbonate weathering.

As noted above the humidity cells provide information on rates of acid producing and acid neutralizing reactions, which are similar for flotation tailings and Category 1 waste rock due to the similar sulfur content of these materials. A separate geochemical model was used to estimate long-term pH resulting from these reactions, including the conservative assumption that CO2 is elevated above atmospheric levels throughout the tailings. See FEIS Section XXXX for more information.

DRAFT