Nondalton Tribal Council Comments – Pebble Project Preliminary Draft EIS, Section 3.14 - Soils

Agency	Comment Number	Section, Paragraph, and Page #	Relevant Text/Subject	Comment	Response
Nondalton Tribal Council	1	Section 3.14.2.1	Mine Site. Erosion	According to the preliminary draft environmental impact statement (EIS), *"Possible consequences of erosion include sediment loading in surface water runoff, and alteration of soil profile characteristics and ecological communities."* Additional consequences of erosion that should be identified include damage to or compromise of reclamation cover systems with respect to intended performance characteristics and stormwater conveyances. These consequences should be recognized during operations but potentially pose greater consequences post-reclamation if monitoring and maintenance are not performed effectively.	Environmental consequences are described in Section 4.14, Soils. Monitoring and maintenance requirements after operations (e.g., post-closure) would be addressed prior to commencing construction within the State-approved Reclamation and Closure Plan prepared in accordance with State of Alaska regulatory requirements. Impact analysis assumes activities from construction through post-reclamation would be performed in accordance with prepared water management and sediment control plans, and necessary Alaska Department of Environmental Conservation permits (if issued) and stormwater pollution prevention plans. This includes typical or standard activities and BMPs.
Nondalton Tribal Counil	2	Section 3.14.2.1	Mine Site. Soil Chemistry	According to the Preliminary Draft EIS, "All trace elements (mostly metals) evaluated were detected in some of the surface samples." While the Preliminary Draft EIS goes on to describe some of the elements evaluated, all the trace elements evaluated should be identified. This information helps reviewers determine whether elements of interest or concern were included in the analysis.	A list of naturally occurring trace elements and cations evaluated as part of the baseline surface soil studies is presented in tables in DEIS Appendix K3.14. Source of data presented in the Appendix K3.14 tables is SLR et al. 2011a, which is available on the public project website.

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Nondalton	3	Section 3.14.2.1	Mine Site. Soil Chemistry	According to the Preliminary Draft EIS, "Notable deviations include those associated with bismuth and mercury. The mean concentration of bismuth and mercury in surface soil is 13 and two times greater, respectively, than shallow subsurface soil (SLR et al. 2011a)." This finding is significant and indicates a specific property associated with the Pebble deposit that could lead to adverse impacts associated with surface soil disturbance resulting in these toxic elements entering surface water. It is also indicative of bioconcentration that is associated with these two elements. The EIS should identify and evaluate the potential impacts that could occur in this instance.	The concentrations of bismuth and mercury represent baseline (background) concentrations reported at specific surface sample locations. SLR et al. 2011a notes concentrations of individual trace elements varies greatly across sampling locations, and concentrations among different trace elements varies greatly between individual locations. Despite these variations among locations, results of comparison of relative and mean concentrations of most trace elements are generally similar at both depth intervals –This is inclusive of sampled areas well outside the general deposit location. The comparison of analytical results of mercury and bismuth between surface and shallow subsurface (18 inches below ground surface) samples is intended to point out (as example), that disparities do exist between baseline concentrations of a few trace elements in surface soils and subsurface samples. This is a summary statement characterizing the natural background trace element concentrations in soil and does not indicate properties that could directly "lead to adverse impacts associated with soil disturbance." SLR et al. (2011a) also concludes that the concentrations of trace elements at the mine site are consistent with results of the USGS evaluation of element concentrations in soils collected across the US.
Nondalton	4	Section 3.14.2.1	Mine Site. Soil Chemistry	The Preliminary Draft EIS states "Because arsenic, copper, and lead are considered key trace elements associated with the deposit, additional . . ." The section should address whether other elements are considered "key trace elements" and if so, why weren't they also subjected to statistical tests? Also address why mercury and bismuth aren't considered key trace elements given their presence and potential toxicity?	Trace elements considered "key" in this statement for additional depth and temporal statistical evaluation means trace elements that are present in the Pebble deposit; present in vegetation; and have the potential for uptake and toxicity. Although a similar evaluation of bismuth may result in a different depth for soil based on the disparities described above, the frequency of detections and mean concentration for this element in surface and shallow soils and vegetation is one of the lowest of the evaluated metals suite. Similarly, the mean concentration of mercury in soils and vegetation is one of the lowest of the evaluated metals suite, and exhibits similar shallow soil and subsurface soil baseline trends as selenium, silver, thallium, and tin.

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					Furthermore, trace element loading of baseline conditions from fugitive dust in surface soils is not considered of sufficient magnitude to have an adverse impact based on the information provided in Table 4-14.1. Because sources of uncontrolled release (e.g., fugitive dust) would not adversely impact baseline surface soil chemistry, additional statistical testing for other trace elements is considered unwarranted. Lastly, mercury and bismuth naturally occur in soil at levels consistent with results from surface soil samples collected across the US (SLR et al. 2011a).