

**Proposed Pebble Project
Preliminary Draft Environmental Impact Statement
Review Comments**

Reviewer: NARF Technical Team
Date: December 21, 2018
Chapter: Appendix K
Section: Section K3.18 Water and Sediment Quality
Document: K3.18_WaterQuality_FINAL

Comments

Section K3.18.1 Criteria. K3.18.1.1 Surface Water Quality Criteria. The point of this section and Section 3.18 in the preliminary draft environmental impact statement (PDEIS) is not to determine whether water quality and sediment quality exceed the most stringent regulatory threshold, but to characterize current conditions and the water body uses that are supported. A simple numerical comparison to the lowest water or sediment quality criterion does not provide this information. Water quality criteria should be presented for a variety of different uses (e.g., protection of fish, protection of human ingestion of seafood, etc.) and when there are exceedances of any water quality criteria, describe which ones are exceeded and therefore which uses may be affected under natural conditions. Groundwater quality data should be addressed in the same manner.

This discussion of water body uses in Alaska should be moved to Section 3.18 so that the reader knows what these standards are designed to protect. Section 3.18 should also make it clear that the only sediment standards being considered are for protection of benthic organisms and that these values are not necessarily protective of bioaccumulative impacts to higher trophic levels, such as fish, birds, land mammals, marine mammals, or humans eating fish.

Table K3.18-1. Criteria Used for Comparison to Water and Sediment Quality Data.

Sediment quality guidelines for metals are normally listed in mg/kg. Mass units such as mg/kg or µg/kg (for organic chemicals) should be used, rather than ppm or ppb, which are outdated and inaccurate units. The primary source of the TELs and PELs should be stated, and all acronyms should be defined in the table footnotes.

Section K3.18.1.2 Groundwater Quality Criteria. If the water quality standard for ammonia depends on temperature and pH, what temperature and pH were assumed to obtain the values in Table K3.18-1?

The discussion of groundwater uses in Alaska should be moved to Section 3.18 so that the reader knows what uses these standards are designed to protect. Table K3.18-1 should separate out surface water and groundwater standards for various uses, or have different tables, with the most stringent values highlighted. That way, if one of the values is exceeded, or projected to be exceeded for certain project alternatives, the reader can determine which uses will be protected and which will not.

Section K3.18.1.3 Sediment Quality Criteria. The NOAA quick screening tables are out of date and originally contained errors. Primary references for the TELs and PELs should be used.

Section K3.18.2 Geochemistry. As noted for Section 3.18, much of this entire section appears to be aimed at predicting geochemical weathering of tailings and other rock once the proposed mine is in operation. This is very important information, but it belongs in Section K4.18 pertaining to impacts of the alternatives on the existing environment. Please separate information pertinent to current conditions to place in this appendix from information pertinent to the alternatives to place in Section K4.18.

Section K3.18.2.1 Waste Rock Geochemical Characteristics. Much of the text in this section appears to be the same as that in Section 3.18. Please revisit and revise the text in the section and Section 3.18 to reduce redundancy.

Section 3.18.3 Surface Water Quality. K3.18.3.1 Data Tables. The last paragraph of this section states that the mean and standard deviation of detected parameter distributions is included in the tables; however, only the mean and range are provided. The standard deviation or some other indicator of distribution should be added to the tables. For any tables, such as these that summarize larger data sets, a footnote should be provided indicating where the reader can obtain the entire dataset or access the database. The USACE should make these databases available along with the Draft EIS for public review.

Section K3.18.3.2 Trend Analysis at Mine Site. Graphics are generally a better way to portray statistical trends than tables. Please consider greater use of graphics throughout this section (e.g., box plots for data distributions and scatter plots with regressions for trends) so that the data are more accessible to the reader.

Section K3.18.3.3 Cook Inlet: Iliamna/Iniskin Estuary. This information should be moved to the main text, since discussion of Alternative 2 and Alternative 3 should be given the same consideration and emphasis as discussion of Alternative 1.

Table K3.18-17: Groundwater Data Summary – Mine Site. Table K3.18-18: Sediment Data Summary – Mine Site. Table K3.18-19: Sediment Data Summary – Iliamna Lake, Transportation Corridor. Please see comments above regarding surface water data tables and make the necessary additions and revisions to these tables.