EPA Comments – Pebble Project Preliminary Draft EIS, Section 4.24 - Fish Values

Agency	Comment Number	Section, Paragraph, and Page #	Relevant Text/Subject	Comment	Response
EPA	1	Section 4.24	General comment	At various points, statements are made to the effect that controls and best management practices would be in place to limit adverse impacts from various activities. We recommend that the DEIS discuss the certainty that BMPs and controls will be effective over the lifespan of the project.	Monitoring of Best Management Practices are discussed in Chapter 5, Mitigation.
EPA	2	Section 4.24	General comment	We recommend that the DEIS include a summary of data gaps (if any), assumptions, and uncertainties, which is helpful for communicating relative confidence in any analysis and is relevant here.	Data gaps have been identified in the DEIS, in Section 3.1, Introduction to Affected Environment, and in appropriate places in the text of the document.
EPA	3	Section 4.24.2.1, Page 4.24-2	Table 4.24-1	We recommend that the DEIS present data on total stream miles affected (this is impossible to calculate from the table, given overlap between categories).	Table was removed and stream miles affected described in text by drainage.
EPA	4	Section 4.24.2.1, Page 4.24-2	"The mine site area is one of the few areas in the Bristol Bay drainage where numerous small channels and tributaries have been surveyed for salmon."	We recommend that the DEIS state what % has been sampled and explain what this means for estimates of streams affected along the transportation corridor (most likely a significant underestimate).	Streams along the Alternative 1 transportation corridor were sampled in 2018 and data was included in DEIS. No available data for un-sampled streams in the Bristol Bay watershed. See comment response matrix EPA Section 3.24, Fish Values.
EPA	5	Section 4.24.2.1, Page 4.24-2	"…approximately 2.3 miles of Tributary 1.19 mainstem and sub-tributary stream channels would remain free-flowing."	It is not clear how this is possible, if tributary is blocked downstream. We recommend that the DEIS clarify this point for agency decision makers and the public by showing this reach on a map.	Language added to clarify.
EPA	6	Section 4.24.2.1, Page 4.24-2	"…changes in riparian wetlands would likely not be detectable downstream for the mine site."	We recommend that the DEIS provide evidence that supports this statement.	Comment acknowledged.

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EPA	7	Section 4.24.2.1, Page 4.24-2	South Fork Koktuli section	We recommend that the DEIS clarify whether Figure 2.24-1 includes all the streams in the SFK footprint.	Text revised for clarity in DEIS.
EPA	8	Section 4.24.2.2, Page 4.24-4	"Sockeye salmon are known to use shoreline habitat…"	We do not recommending citing the EPA report to support the statement that spawning areas are >0.5 miles from ferry terminals; sampling was not done to test this statement.	Statement and citation removed
EPA	9	Section 4.24.2.3, Page 4.24-6		We recommend that the DEIS clarify why a net reduction in streamflow is predicted. The text explains how water may be captured and stored and released at different times, but it does not explain why water is lost. (e.g., is some water being exported from basins via some other process?)	Addressed in Section 4.16, Surface Water Hydrology: "*Water available for discharge to the environment after treatment would be less than the baseline flows because of water lost in tailings voids, evaporation, and other minor uses; possibly on the order of 22 to 28 cubic feet per second (cfs) annually (Knight Piésold 2018r).*"
EPA	10	Section 4.24, Page 4.24-7	"Treated water releases from mine site facilities would be optimized to benefit priority species and life stages for each month and stream."	We recommend that the DEIS specifically explain how this would be done, for each species and for each stream. Without details, it is not possible to evaluate the effectiveness of the strategic treated water discharge system and, therefore, the extent to which it would reduce impacts.	The strategy to optimize flows for priority species and life stages (Table 4.24-1) was performed by examining the discharge-Weighted Useable Area (WUA) relationships for priority species per month in relation to the mine site water-balance. Flows per watershed were then augmented or reduced in each stream to meet water demand and surplus flow quantities and maximize priority fish species habitat WUA values.
EPA	11	Section 4.24, Page 4.24-8	"Throughout the mine site area in average precipitation years, Chinook and coho spawning habitat would be reduced, which chum, sockeye, rainbow…"	We recommend that the DEIS provide evidence/data that supports this statement.	WUA habitat models are based on the suitability of depth, velocity, substrate, and other habitat metrics for a given species and life stage. When discharges change, these parameters change which results in changes in WUA. Since each species has its own range of

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					suitable parameter values (and timing of life stage needs), a change in discharge may result in increases in WUA for one species and a decrease for another.
EPA	12	Section 4.24, Table 4.24-3, Page 4.24-8		We recommend that the DEIS provide information on how values were calculated. We also note that habitat area is discussed as proportions or stream miles in Chapter 3, but here switches to areal estimates, which is confusing. We recommend presenting the information in a consistent manner across Chapters 3 and 4.	Miles was used for direct habitat loss, acres was used for indirect modeling areal estimates.
EPA	13	Section 4.24, Table 4.24-3, Page 4.24-9		We recommend clarifying whether changes in available habitat for different species (e.g. Table 4.24-3) are being calculated downstream of the footprint only, or whether the calculations also incorporate losses due to the project footprint. We recommend clarification of this point in tables and text, as the reader may interpret these as net changes to habitat, with all sources considered, and it is not clear if that is the case.	Comment acknowledged. Language will be added to this section for clarity in the EIS.
EPA	14	Section 4.24.2.4, Page 4.24-11	"The extent or scope of the loss of riparian productivity would likely be limited to waters in the vicinity of the mine site footprint, and may not be measurable or detectible downstream from the affected stream channel."	This sentence lacks the necessary supporting data or information. We recommend also clarifying more specifically what this sentence conveys (e.g., "extent," "scope," "limited to waters in the vicinity of the mine site footprint," and "downstream from the affected stream channel".) so that decision makers and the public can better understand the impacts of the project.	Section reworded to: "*In terms of magnitude, extent, and duration, approximately 276 acres of riparian wetland would be directly and permanently impacted by the mine site footprint; predominately in the NFK watershed. These impacts would be certain to occur if the project is permitted and constructed, and include reduced surface water infiltration, retention, and groundwater flow; increased surface water runoff; and reduced water quality functions. Changes in*

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					riparian wetlands would likely not be detectable downstream from the mine site."
EPA	15	Section 4.24.2.4, Page 4.24-16	Water temperature	We that the DEIS discuss the methods for the analysis of expected water temperature changes in Section 4.24.2.7 or provide information on where those methods can be found.	Section 4.18, Water and Sediment Quality, describes temperature analysis (also RFI 047 - response from R2 Consultants, as referenced in Section 4.18).
EPA	16	Section 4.26.6, Page 4.24-25		We recommend that the DEIS clarify how cumulative stream miles blocked or captured by the proposed activities was calculated.	Analysis included in the DEIS was expanded with additional quantification of potential effects.
EPA	17	Section 4.24.6, Page 4.24-26		We recommend that this section include actual estimates for additional stream miles and wetland acres affected by the buildout, as well as how this may affect fish habitat and population. This information will help to support existing, more general, text.	Analysis included in the DEIS was expanded with additional quantification of potential effects.
EPA	18	Section 4.24.6, Page 4.24-25		The cumulative effects section contains many relative and imprecise terms regarding potential effects. We recommend providing additional detail to clarify statements of increases or decreases. As discussed above, statements without indication of geographic extent, magnitude, or significance, make it very difficult for the reader to evaluate the differences among and importance of the various potential impacts from this project.	Analysis included in the DEIS was expanded with additional quantification of potential effects.

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EPA	19	4.24.6		The cumulative effects analysis does not fully discuss induced development; that is the likely enhanced potential for multiple human uses and expansion into the study region and associated impacts. The induced development impacts from the project may include, but not be limited to, increased potential for spills and the introduction of invasive species. We recommend including additional analysis of what development of this region would mean for fish values into the future.	The cumulative impacts section has been updated in the DEIS. Invasive species are discussed in Section 4.26, Vegetation and Chapter 5, Mitigation.