

Nondalton Tribal Council Comments – Pebble Project Preliminary Draft EIS, Chapter 2 – Alternatives

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Nondalton Tribal Council	1	2.0 Alternatives	<p>Except for the no action alternative, the U.S. Army Corps of Engineers (“USACE”) fails to consider a broad range of alternatives in Chapter 2. Alternatives 2 and 3 are merely variations on access to the mine and transportation of mine products; they are not alternatives.</p> <p>This section describes the alternatives analysis as the “heart of the EIS” and states that federal regulations require federal agencies to “rigorously explore and objectively evaluate all reasonable alternatives and for alternatives which were eliminated from detailed study, briefly discuss the reasons for these alternatives having been eliminated.”</p> <p>As noted with respect to Chapter 1, all reasonable alternatives for achieving the project’s need and purpose were not evaluated. The project need has not been established in the current version of this environmental impact statement (“EIS”), and to the extent that the project need is valid, it reflects global demand for the minerals proposed to be extracted. Other alternatives for meeting this demand beyond the specific proposed project were not evaluated. Attempts to limit the project need and purpose to locations within Alaska were not based on any logical or described reasoning, and the proposed alternatives do not evaluate other locations within Alaska or within the United States, much less globally.</p> <p>The alternatives evaluation and selection process appears not to have been conducted objectively, as it does not take into consideration other equally practicable alternatives for meeting global demand that may be less environmentally damaging. Rather, the alternatives presented appear designed to ensure that some version of this project would go forward and be permitted, regardless of the level of environmental and human impact that may occur.</p>	<p>USACE has considered more than 100 alternative options and documented their evaluation in Appendix B of the Draft EIS. Alternatives 2 and 3 consider alternate dam construction methods at the mine site, alternate port locations and road alignments, and eliminating the ferry. Dam safety, road impacts on wildlife, fish, and wetlands, and ferry impacts were concerns from scoping. The potential for these alternatives to reduce those impacts is evaluated in the Draft EIS.</p> <p>In addition to the two action alternatives to the proposed project, the Draft EIS evaluates four variants.</p>
Nondalton Tribal Council	2	2.0 Alternatives	Please note our previous comments on Preliminary Draft EIS (“PDEIS”) Sections 1.3 and 1.4. This Section of the PDEIS relies on tables, figures and appendices as well as other supporting	PDEIS sections 1.3 and 1.4 do not include tables, figures and appendices and thus this comment is

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			documents that have not been provided to the cooperating agencies. In reviewing this section, it has been noted that previous comments to the USACE by this cooperating agency on the Alternatives Analysis have apparently not been considered as they are neither addressed nor incorporated into this Section. Therefore, based on our comments on this section, it is our conclusion that the PDEIS as presently written does not consider a "broad range of alternatives."	not understood.
Nondalton Tribal Council	3	2.0 Alternatives	To develop or identify alternatives to a proposed project that may reduce potential adverse environmental impacts, the impacts of the proposed project must first have been assessed and provided to the parties involved in developing or identifying alternatives. In addition, as noted in our comments on this section, evaluations such as Failure Modes and Effects Analysis ("FMEA") are needed both to assess potential impacts but also are useful in the assessment and development of alternatives for this purpose. Finally, in order to ensure the alternatives analysis performed in the EIS is correct and the least environmentally damaging alternative is selected, evaluations such as inundation analysis and other technical information that have not been provided for this review of the PDEIS are needed to determine not only the potential impacts of the proposed action, but also the improvements that would result from potential alternatives, in order to ensure the alternatives analysis performed in the EIS is correct.	NEPA does not require completion of impact analysis for the proposed action prior to developing alternatives.
Nondalton Tribal Council	4	2.0 Alternatives	The USACE's development and selection of alternatives has not been carried out in accordance with other statutory obligations. For example, the National Historic Preservation Act implementing regulations require the USACE to "ensure that the section 106 process is initiated early in the undertaking's planning, so that a board range of alternatives may be considered during the planning process for the undertaking" [36 CFR § 800.1(c)]. The USACE initiated the Section 106 process well after it developed and selected the alternatives; therefore, the Section 106 process will have no input on the development of alternatives. Likewise, this Section fails to address how the Section 106 process will inform	USACE has initiated the Section 106 of the NHPA process in parallel to the NEPA and DA application processes. USACE has defined a reasonable range of alternatives for the draft EIS for public comment and review. Section 106 process was initiated during the development of the draft analysis. The information developed during the 106 process will be analyzed for the final EIS.

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			the ongoing development of alternatives and the USACE's selection of the least environmentally damaging practicable alternative.	
Nondalton Tribal Council	5	2.1 Alternatives Development	<p>According to the PDEIS, as a result of "specific suggestions for alternatives that were provided by the public, stakeholders, and agencies during scoping" that "have been fully considered in the alternatives development process" as well as specific suggestions provided by this cooperating agency as well as other cooperating agencies such as Environmental Protection Agency ("EPA"), the "EIS Team" found that only three alternatives met the criteria of meeting: purpose and need; reasonable under Council on Environmental Quality ("CEQ") guidance; practicable under Clean Water Act ("CWA") Section 404(b)(1) Guidelines; and environmental impacts. In fact, in terms of the actual project being proposed, the "EIS Team" apparently found no alternatives whatsoever, instead identifying alternatives that address access via Road and Ferry or Road only in order to have any alternatives for detailed analysis at all. Given the magnitude and potential impacts of the proposed project, the suggestion that no alternatives have been evaluated would suggest the DEIS is being crafted to suggest that the proposed project is nearly "perfect" as proposed. The only way for the USACE and others on the "EIS Team" to have arrived at this conclusion is to have conducted the Alternates Analysis in a vacuum as well as not in consideration of the purpose of an EIS to begin with, which is to provide a "hard look" at the proposed project. There is no other interpretation if this section is provided as written in the DEIS and does not contain meaningful alternatives than to suggest the results of this analysis were predetermined to support the proposed project as is, and that any meaningful analysis will require legal intervention for this to occur in the National Environmental Policy Act ("NEPA") process being conducted by the USACE for this project.</p>	USACE disagrees. Over 100 alternative options are evaluated in the Draft EIS and two action alternatives to the proposed project are evaluated in detail.
Nondalton Tribal Council	6	2.1.1 Public Input on Alternatives	<p>This section makes it clear that the USACE had no intention of soliciting a truly broad range of alternatives and has inappropriately constrained the public's input on alternatives. The "guidance" provided to the public essentially limited them to commenting on elements of the project as proposed, rather than whether other projects in other locations could have met the stated</p>	USACE disagrees. Over 100 alternative options (including other locations) are evaluated in the Draft EIS and two action alternatives to the proposed project, the no action alternative, and four variants are evaluated in detail. We have carefully considered previous comments from

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			need and purpose.	Nondalton Tribal Council and other cooperating agencies in conducting the alternatives development and screening.
Nondalton Tribal Council	7	2.1.2 Screening for Full Range of Alternatives	<p>Understanding how the USACE reached its determination of what project alternatives would be considered is a key aspect of the EIS and one that should have been coordinated with other governments in advance. We are being asked to provide comments on the PDEIS without an understanding of this process, since the this cooperating agency has not been provided a current draft of this critical Appendix B describing the screening of suggested alternatives.</p> <p>No summary of the alternatives suggested during scoping and considered by the USACE is provided here, despite the statutory requirement to do so. It is telling, however, that environmental impacts were the last item considered and apparently lowest priority, despite this being a process intended specifically to identify and mitigate environmental impacts.</p>	<p>Two previous versions of Appendix B have been provided to the cooperating agencies and all comments were carefully considered. USACE updated the cooperating agencies on October 24 that the next version of Appendix B would be in the Draft EIS and there were no requests that it be submitted with the Preliminary Draft EIS. Appendix B identifies the alternatives suggested during scoping.</p> <p>The screening criteria used by USACE are widely used in NEPA practice.</p>
Nondalton Tribal Council	8	2.2 Alternatives Carried Forward for Detailed Analysis	<p>The phrase “as currently proposed” should be eliminated from the end of the first paragraph. The no action alternative would entail the project not being permitted in any form.</p> <p>The two “action alternatives” listed represent changes to some elements of the applicant’s preferred alternative; however, they are not truly different alternatives in the sense of meeting the project need and purpose. Such alternatives would include alternative mining sites, alternative projects in other states or countries, and alternative means of meeting or reducing the global demand for these minerals.</p> <p>It is not clear from this brief description of the two action alternatives carried forward whether changes are being made to other project elements besides eliminating entire elements (e.g., the ferry). This introductory section would benefit from a comparison chart showing all four alternatives with a summary of all key elements included or differing among the alternatives.</p> <p>The remainder of this chapter is long and detailed and organized</p>	<p>The phrase has been deleted.</p> <p>Alternative mining locations are considered in the Draft EIS.</p> <p>A comparison chart has been added to Chapter 2.</p> <p>USACE appreciates the suggestion but kept the</p>

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			by alternative, making it difficult to succinctly compare elements of the alternatives. In addition to a summary chart as suggested above, it would be more helpful to organize the section by element of the project, describing what differs among the alternatives for each element.	style of describing each alternative.
Nondalton Tribal Council	9	2.2.1 No Action Alternative	<p>The final sentence of this section cannot be determined without consideration of more broad-ranging alternatives to the proposed project, since the purpose and need for this project is based on global demand for minerals. Regardless, it begs the question of whether the no action alternative can be selected (i.e., is more than just a baseline for comparison). This section needs to be clearer about this aspect of the no action alternative.</p> <p>Although Appendix N is not available for comparison, it would seem the description of this alternative is at a level of detail that may not be dissimilar from the appendix. As written, it is long, highly technical, and not particularly approachable to the general public. The alternative should be summarized in a manner that non-technical so that members of the public can digest the information.</p>	<p>The no action alternative text has been revised for clarity.</p> <p>It is clear in the Preliminary Draft EIS that Appendix N will be the applicant's project description. It has been available on the public website since scoping and an updated version was posted on October 23, 2018 and available for the public and cooperating agencies. USACE did not find any reason to redistribute this readily available document and did not receive requests for it. USACE received comments from other cooperating agencies requesting additional detail of the proposed project and thus Chapter 2 has a fairly detailed description of the project.</p>
Nondalton Tribal Council	10	2.2.2 Action Alternative 1 – Applicant's Proposed Alternative	<p>According to the PDEIS, "PLP's October 2018 Project Description (PLP 2018d), the Pebble Project Department of the Army Application for Permit POA-2017-271 and supporting documents (PLP 2017), various responses to Request for Information (RFIs) as cited herein and associated Geographic Information System (GIS) data provided by PLP form the basis for the description of Alternative 1." All of this information has not been provided for this review, specifically the Pebble Limited Partnership's ("PLP") October 2018 Project Description and responses to Requests for Information ("RFI"). As such, given the extent to which other information in this section is not presented or available as previously noted, a meaningful and substantive review cannot be conducted. The USACE must produce an additional iteration of the EIS, what is typically provided as an administrative DEIS, which is</p>	<p>As noted above, the project description is readily available. Even so, USACE would have been happy to provide it had the council requested it.</p> <p>The RFIs are also available on the public website and would have been provided if requested to facilitate the council's review of the Preliminary Draft EIS.</p>

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			<p>a complete DEIS containing all necessary information and with all supporting information available, for review by the cooperating agencies over a 30-day period, and that the comments arising from that review be considered by the “EIS Team” prior to publication of the public DEIS. Otherwise, the only meaningful and substantial means for the cooperating agencies to comment on this EIS will be for them to participate in exactly the same way as the public during the public review period, negating the benefit of the cooperating agencies.</p> <p>According to this section, the proposed operating life of the project is 20 years. Construction would last for approximately 4 years, followed by a commissioning period and 20 years of mineral processing. Over the life of the project, approximately 1.3 billion tons of mineralized material would be fed to the process plant at a rate of 180,000 tons/day (see page 11). However, as noted on the Pebble Project website page for Reserves and Resources,¹ in terms of potential ore, depending on the “Threshold CuEQ%” (CuEQ% meaning copper equivalent percent), the amount of material that could ultimately be mined that presently meets the definition of measured and indicated reserves or resources, ranges from 1.44 billion tons to as much as 6.46 billion tons. Because of this discrepancy, the EIS must address how the determination to propose a project of 1.3 billion tons was made, as well as address the likelihood that the proposed project is highly likely, if permitted, to result in additional production, including potentially increasing both the production rate and the project life-time significantly.</p> <p>¹ https://www.northerndynastyminerals.com/pebble-project/reserves-resources/</p>	USACE has an obligation to consider projects as proposed. USACE has considered a mine expansion scenario under cumulative effects.
Nondalton Tribal Council	11	2.2.2.1 Mine Site – Mining Methods and Phasing	<p>According to the PDEIS, “The mine would be a conventional drill, blast, truck, and shovel operation with an average mining rate of 70 million tons per year, and an overall stripping ratio of 0.12 ton of waste per ton of mineralized material.” The use of the term “overall stripping” is not consistent with hardrock mining terminology and is also misleading. “Stripping” is a coal mining term and refers to the removal of overburden above the coal seam. Stripping is typically performed by removing a consistent layer prior to mining of coal. In hardrock mining, waste and ore are typically mined at the same time rather than sequentially. Similarly, the term “mineralized</p>	The editorial suggestions were considered when editing the text.

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			<p>material” is more commonly referred to as “ore” if it is intended to be processed. It should be noted that both ore and waste may be mineralized. The PDEIS should be corrected to “...and an overall ratio of waste to ore of 0.12 tons waste to 1.00 tons ore.” The PDEIS, to be informative, must also mention that this is an extremely low waste to ore ratio for a hardrock mine and provide an explanation as to why that is the case. This might include a high-grade core deposit, that the proposal is suggesting an extremely high copper equivalent cutoff grade, or both. The PDEIS must also address how a change in copper price might change this information and lead to a modification to increase the waste to ore ratio in the future.</p> <p>In making this recommendation, we do note that on page 11 of this section, the PDEIS indicated “During the pre-production phase, approximately 33 million tons of non-mineralized and mineralized material would be removed from the open pit.” This action could be consistent with that of stripping. However, we would note that if 1.3 billion tons of ore is mined, at a waste to ore ratio of 0.12:1, then a total of approximately 156 million tons of total waste will be produced, suggesting that more than 75 percent of the waste produced from this project would be removed at the same time as the mining of the ore would occur.</p>	<p>USACE is not required to speculate about changes in commodity prices.</p> <p>Noted.</p>
Nondalton Tribal Council	12	2.2.2.1 Mine Site – Mineral Processing	<p>The following suggested revisions to the first paragraph of this section is illustrative of a general recommendation that the PDEIS be reviewed and edited by an experienced EIS writer whom has at their access other EISs for hardrock mines upon which to use as a basis for this EIS so as to ensure it provides complete and accurate information. In general, the information and descriptions provided in the PDEIS are extremely cursory and as a result do not provide the reader with adequate information upon which to either understand the project or the subsequent evaluation of the potential impacts. While we could provide similar recommendations for nearly every part of the project description in this section, the time allowed only provides for the following example based on the first paragraph of this section:</p> <p>“Mineral processing facilities would be located at the mine site. Blasted mineralized material ore from the open pit would be fed to a crushing plant, and then conveyed to a</p>	<p>This comment conflicts with an earlier comment that chapter 2 should be abbreviated.</p> <p>The editorial suggestions were considered when editing the text.</p>

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			<p>coarse ore stockpile. Ore from the stockpile is fed at a rate of 180,000 tons per day which in turn feeds a to a grinding plant in the process plant. In the grinding plant, semi-autogenous grinding mills and ball mills and combined with water to make a slurry it would be and the ore reduced to the consistency of very fine sand, liberating the valuable minerals from waste materials. The slurry is pumped to the next step is, froth flotation, in which the copper and molybdenum minerals are separated from the remaining material to produce concentrates. In the flotation process, reagents are added to cause valuable minerals of interest to attach to air bubbles, allowing them to be floated and separated from waste material and recovered from a froth in a series of flotation cells. The concentrates are then filtered pressed to create moisture levels acceptable for shipment. The waste material, or tailings as the waste product from processing is typically called, is stored in the Tailings Storage Facility."</p> <p>As an example, we would suggest the USACE should review the project descriptions in the EIS that have been conducted for other hardrock mining projects in Alaska such as Greens Creek, Donlin Creek, and Pogo.</p>	
Nondalton Tribal Council	13	2.2.2.1 Mine Site – Tailing Storage Facilities	<p>According to the PDEIS, "The TSFs would be designed to meet or exceed the standards of the updated 2017 Guidelines for Cooperation with the Alaska Dam Safety Program (ADSP) prepared by the Alaska Department of Natural Resources (ADNR). The TSFs would be designed to the standards of a Class I hazard potential dam (the highest classification)."</p> <p>The PDEIS fails to recognize that the updated 2017 Guidelines are presently in "Draft Revision" form and subject to change. In addition, it should be noted that the guidelines consist of "recommendations" and not requirements. If the PDEIS is going to recognize these recommendations, it should similarly recognize the recommendations of the Mount Polley Independent Expert Review Panel as well as recent regulations enacted by Montana and British Columbia which specifically address mining tailings facilities. The PDEIS should provide a comparison of the Alaska</p>	Chapter 2 includes: "The guidelines lay out the process, qualifications, level of detail for study, modeling, and design, and expectations for permitting dams versus being a list of standards."

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			<p>recommendations with those of the Mount Polley Panel² and the Montana³ and British Columbia⁴ regulations and demonstrate whether the Alaska regulations are progressive and protective, and address what this means to the Pebble Project in terms of reduction of risk and reliability of the proposed methods, such as relying on recommendations rather than regulatory requirements.</p> <p>The PDEIS contains a footnote: “Bulk tailings are comprised of relatively inert, non-acid-generating fine-grained ground waste rock that remains after economic minerals and pyritic materials have been extracted through ore processing at the mine site.” This description appears to incorporate the findings from later sections such as that the tailings are inert and non-acid generating. It should be noted that “bulk flotation tailings” from copper mines in general may be acid generating or non-acid generating, but in our experience very rarely are they “inert” and in most cases result in water quality impacts. The PDEIS appears to presume this is the case by providing this site-specific description rather than relying on the evaluation contained in the remainder of the PDEIS.</p> <p>In describing the embankment slopes for the bulk tailings storage facility (“TSF”) and pyritic TSF, in both cases the PDEIS says embankment slopes would be maintained at 2.6H:1V. These descriptions both should be revised to say, “constructed and maintained.” Additionally, the description should provide the basis for the slopes (i.e. same as final reclamation) and explain why 3H:1V or shallower slopes are not being designed, since these slopes are more likely to promote long-term revegetation.</p> <p>According to the PDEIS, “PAG waste rock would be placed in a ring around the interior of the pyritic TSF.” The PDEIS should explain how the PAG waste rock will be placed so as to not compromise the pyritic TSF liner. From the description provided it is not clear how “The sub-aqueous discharge is necessary to prevent oxidation and potential acid generation” will be achieved and maintained.</p> <p>According to the PDEIS, “The main Bulk TSF embankment would be constructed using the centerline construction method with local borrow materials. The centerline construction method provides a high level of embankment stability while reducing the embankment material requirements associated with the downstream method.</p>	<p>The description of bulk tailings in Chapter 2 has been revised and addresses the comment.</p> <p>The Draft EIS states the slopes would be at 2.6H:1V without specifying construction and/or maintained. 3H:1V or shallower slopes had not yet been suggested and will be considered after the Draft EIS comment period as a potential mitigation measure.</p> <p>The method for placing the waste rock has been added to the Draft EIS.</p> <p>The Draft EIS describes centerline and downstream construction and Alternative 2 would use downstream versus centerline as proposed.</p>

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			<p>The south Bulk TSF embankment would be constructed using the downstream construction method to facilitate lining of the upstream face.” While the centerline construction method does typically reduce the embankment materials requirements as compared to the downstream method, it does not provide an equally high level of embankment stability except under near ideal conditions. The Mount Polley TSF was constructed using a centerline construction method, and it proved to be particularly problematic to keep pace with tailings and water storage capacity. The PDEIS should provide further information on various TSF construction techniques and include information such as that shown in Figure X.X:</p> <p>² https://www.mountpolleyreviewpanel.ca/</p> <p>³ https://leg.mt.gov/bills/2015/sb0499/SB0409_x.pdf</p> <p>⁴ http://mines.nrs.gov.bc.ca/tailings-management</p>	
Nondalton Tribal Council	14	2.2.2.1 Mine Site Water Management	<p>According to the PDEIS, “The project would develop a comprehensive water management plan that strategically discharges surplus treated water to downgradient streams in a manner that reduces the effect of stream flow fluctuations and minimizes impacts to fish habitat.” The PDEIS must explain why the proponent has not been required to develop a comprehensive water management plan as a part of the application and for review in this EIS. This information is necessary to evaluate the extent to which the proponent can reduce the effect of stream flow fluctuations and minimize impacts to fish habitat. Relying on a yet to be produced plan to accomplish this task and apply it as mitigation to the EIS fails to take a “hard look” at the potential for and mitigation of these potential impacts. Additionally, the analysis must address how the proposed mitigation will be ensured for the “entire lifecycle of the project” when water management will be required post-mining for an indefinite, or perpetual, length of time.</p>	<p>Water withdrawal is under the purview of the State of Alaska. USACE does not have the regulatory authority to require a comprehensive water management plan. The State of Alaska also has the authority over bonding and financial assurance for post-closure maintenance.</p>
Nondalton Tribal Council		Closure/Post-Closure Water Treatment	<p>The PDEIS provides no information on the capacity or type of water treatment that will be required. The PDEIS must identify the most likely type of water treatment that would be used and address the effectiveness and reliability of the proposed treatment method or methods.</p>	<p>Water treatment is described in Chapter 2 and in more detail in the water quality section.</p>

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Nondalton Tribal Council	15	Post Closure Management	In this section the PDEIS describes the pit lake water quality and treatment. In terms of post-closure management, the proposed project would also require monitoring and maintenance. Monitoring should include water quality, quantity, wildlife, revegetation, erosion, dam stability and other monitoring to ensure the reclamation performs as intended and if corrective actions are needed, and maintenance of roads, covers, stormwater channels, and other and other measures to ensure the reclamation and other measures remain viable over time. These activities in addition to operations are required to be performed in perpetuity and should be described in the PDEIS.	Specific details on compliance monitoring and a detailed monitoring plan would be developed during the state permitting process. Reclamation and closure required by the State of Alaska would include provisions for periodic replacement of water treatment facilities, and ongoing operating and monitoring costs over the long-term, post-closure period.
Nondalton Tribal Council	16	Financial Assurance	<p>The Pebble Project proposes measures and controls that we believe will require long-term post-closure operations and maintenance ("O&M") to protect water quality. The need for long-term post-closure O&M, facilities replacement, and monitoring, should be acknowledged in the DEIS. The DEIS should contain adequate details regarding financial assurance commitments (e.g., for reclamation and long-term O&M), as well as meaningful assurances that an adequate financial instrument will exist to ensure adequate funds are available as long as they may be needed for this purpose. Although the USACE has taken the position that it does not address financial assurance in in the EIS, we disagree with this position. We believe that financial assurance is a critical element and must be disclosed in the EIS for the proposed Pebble Project, because the viability of the reclamation, closure, and post-closure management is a critical factor in whether this project may be considered fully protective of environmental resources. Furthermore, we believe this information is significant and essential for an adequate analysis of the proposed project because it could make the difference between a project that is sufficiently managed over the long-term by the site operator and an unfunded or under-funded contaminated site that becomes a liability that may need to be addressed under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA" or Superfund).</p> <p>If a long-term trust fund will be established for the proposed project, the appropriate level of funding, types of financial instruments, and mechanics of the fund are critical to ensuring it</p>	Chapter 2 addresses financial assurance and explains it is under ADNR's regulatory authority. State permitting would follow the NEPA process and it is premature to address at this time.

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			will be available when it is needed. In addition to the projected long-term engineering and monitoring costs of each activity, the DEIS should discuss the financial assumptions used to estimate the funding level, projected trust fund growth rate, and mechanics of the trust fund. The fund mechanics include: (a) requirements for timing of payments into the trust fund; (b) how the responsible agency ensures that the trust fund is bankruptcy remote; (c) acceptable financial instruments (such as those specified in 43 CFR § 3809.555); (d) legal structure of the trust for tax purposes; (e) who will pay the taxes on trust earnings and trust fees and expenses; (f) how taxes and trust fees will be paid on the trust if the mining company goes out of business; (g) who will make investment decisions if the operator is no longer viable; (h) if the federal government controls the investment decisions, what legal and ethical issues arise from the responsible agency controlling investment decisions about investments in private companies, voting stock and similar issues if the trust owns stock; (i) the identity of the trust fund beneficiaries; and (j) the identity and corporate structure of the operator with responsibility and liability for financial assurance at this site.	
Nondalton Tribal Council	17	2.3 Alternatives Eliminated From Further Consideration	<p>The PDEIS Table 2-12 provides a brief description of each option that was considered and dismissed. The reviewer is required to look to Appendix B to determine the reason or reasons why the alternative was dismissed. The PDEIS must also include a brief description of the rationale, so the reviewer is not required to cross reference the alternative in Appendix B.</p> <p>The tables at the end of this chapter provide no summary of the reasons that other alternatives were eliminated from detailed study. These reasons must not be buried in an appendix. This cooperating agency has already provided recommendations to the USACE concerning the desirability and advisability of including several alternatives for detailed consideration in the EIS, and it is noted that the PDEIS does not include any of the additional alternatives identified by this cooperating agency. For the record, and with reference to Draft Appendix B dated September 2018, this cooperating agency previously recommended the following alternatives for inclusion in the DEIS:</p>	<p>The table has been removed from Chapter 2. This reduces redundancy and eliminates the need for reviewers to cross reference between Chapter 2 and Appendix B.</p> <p>Providing alternatives screening in an Appendix is common for complex projects.</p> <p>Many layout and siting options are considered in Appendix B. We encourage the cooperating agencies and public to review the options</p>

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			<p><u>Mine Layout Options (Pages 1 – 2)</u></p> <p>An analysis of siting options and alternatives is needed to allow for consideration of mine layout options. This analysis is typically provided as well as cited relative to the mine layout options considered in an alternatives analysis. The information provided does not allow for adequate consideration of mine layout options or provide justification for the options considered and the dismissal of all options other than the proposed action.</p> <p><u>Mining Type – Underground Mining (Page 4)</u></p> <p>Underground mining is dismissed as an alternative alone or combined with open pit mining because “underground mining techniques cannot be used to safely mine the proposed project.” If “safely” is defined as “without fatalities” then the analysis is misinformed in that fatalities do occur on a yearly basis in the United States and elsewhere from both underground and open pit mines. In fact, it is notable in this regard that according to the Mine Safety and Health Administration (“MSHA”),⁵ for the last four years the number of fatalities associated with hardrock mines at surface facilities has significantly exceeded that of underground mines. In addition, there is an acknowledged trend back towards underground mining as open pit minable reserves are depleted and high-grade underground orebodies are being discovered.⁶</p> <p>Underground mining offers significant environmental advantages related to decreasing the overall mine footprint, significantly reducing the production of waste rock and producing ore of higher grade resulting in less tailings. For underground mining to be dismissed, site-specific aspects must be present that are not discussed in the preliminary assessment that make underground mining in this particular case more unsafe than in other cases. But more typically, economic feasibility has been cited in NEPA analysis as the basis for dismissal of this option. In many cases, underground mining has been included as an alternative for consideration in NEPA analysis and the economic feasibility has been analyzed and presented in detail in EISs. Additionally, the method of underground mining needs to be identified as there are significant differences between methods such as stope mining, room and pillar mining, and block-cave mining. In conjunction with consideration of underground mining methods, the extent to which</p>	<p>considered and make substantive comments if they disagree with the evaluation or have suggestions for improving. Asserting an option should be considered in detail without providing technical justification is not particularly helpful to USACE.</p> <p>The referenced text has been edited.</p> <p>Underground mining for Pebble West is evaluated in Appendix B and eliminated from detailed consideration. Underground mining for Pebble East is considered in the Draft EIS under the expansion scenario evaluated under cumulative effects. The scenario identifies potential underground mining methods.</p> <p>Underground mining is considered in the alternatives analysis and evaluated in cumulative effects, as suggested by the comment.</p>

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			<p>backfilling might be achieved should be considered.</p> <p>Underground mining should not be excluded from evaluation in the EIS. It is understood that underground mining methods are not proposed for early stages of mine development, and open pit mining is usually less costly; however, and evaluation of underground mining should be included in the alternatives analysis and evaluated in the cumulative effects portion of the EIS.</p> <p>If the proposed Pebble Project is permitted, it is highly likely that underground mining will be proposed in the future beyond the present mining proposal. Underground mining would most likely be proposed to recover additional resources beyond or below the proposed extent of the open pit. It should be discussed as to whether acceptance of the premise for underground mining in this preliminary assessment, if carried forward, would preclude the future possibility of underground mining. Dismissal of the underground mining option due to safety concerns at this stage could also be argued as a rationale to prohibit open-pit mining as well.</p> <p><u>Material Handling – In-Pit Crushing and Conveying (Page 4)</u></p> <p>In-pit crushing must be included in the alternatives analysis and evaluated in in the EIS, since in-pit crushing and conveying are probably less environmentally damaging than other alternatives, such as hauling ore by trucks to an off-site crusher. This determination and the dismissal of the in-pit crushing option is premature.</p> <p><u>Throughput 320,000 tons per day (Page 7)</u></p> <p>The preliminary assessment suggests an option considering increasing the mine throughput to 320,000 tons per day should be dismissed due to “increased environmental impacts.” However, it should first be noted that in nearly all cases, EISs and subsequent Record of Decisions are not based on a given throughput, but rather on total environmental impacts. For this reason, several mines have been allowed to increase their rate of mining without further analysis based on the analysis contained in NEPA EIS analysis that was based on a “conceptual” throughput that was lower. The standard typically employed is that if the proposed change does not result in an increase in disturbed acres or other</p>	<p>Future underground mining would not be precluded by the EIS.</p> <p>In-pit crushing and conveying is included in the alternatives analysis in Appendix B. Additional evaluation and consideration of this option was conducted based on Nondalton Tribal Council comments on Appendix B and include RFI 090. The option increases energy requirements, footprint, wetlands impacts, and generates 81 million additional tons of waste rock. The option is eliminated from further analysis.</p> <p>USACE is required to evaluate the proposed project and evaluate alternatives and mitigation that could reduce impacts. The EIS is not a programmatic type document prepared by a land management agency and thus does not evaluate increased throughput rates that would allow the applicant to avoid the expense of reapplying if they want to increase the throughput in the future. A throughput of 320,000 tpd is considered in Appendix B and eliminated.</p>

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			<p>impacts by more than 10 percent, it is allowed without further consideration. It should also be noted that a more recent example involving the PolyMet NorthMet Mine in Minnesota has the company producing a feasibility study prior to completing the permitting process. This suggests that a throughput that is double the throughput that could be permitted will be required for the project to be economical'. In order to address this possibility, the EIS of the proposed Pebble Project must consider the 320,000 tons per day option as well as an option that sees the mine significantly expanded, not as a cumulative impact, but as an alternative in the EIS.</p> <p><u>Power Source – Renewable Energy (Page 9)</u></p> <p>Rather than being dismissed in this preliminary screening, renewable energy should be included as an option and evaluated in the EIS. The environmental benefits as well as the costs should be evaluated before precluding the use of renewable energy.</p> <p><u>Storage Method – Dry Stack Tailings (for Bulk Tailings only) (Page 22)</u></p> <p>The alternatives screening document indicates that dry stack tailings is under review. This option should undoubtedly be included as an alternative for analysis in the EIS given the substantial risk and threat to safety and the environment associated with a TSF failure. This is especially important given that the Mount Polley Independent Expert Review Panel ("IERP") identified dry stack tailings as the Best Available Technology ("BAT") for new tailings impoundments. The analysis should also be based on the recommendations of the IERP that a complete cost/benefit analysis be performed without regard to cost and with an emphasis on public safety.</p> <p><u>Storage Method – Remove or Make All Tailings Inert (Page 22)</u></p> <p>According to the preliminary assessment, methods to make the tailings non-acid generating or inert to metals leaching are not practicable; however, methods such as the addition of lime to tailings to address acid drainage and metal leaching have been proposed and accepted at other mine sites. Those methods are identified and discussed in the Global Acid Rock Drainage ("GARD") Guide Section 6.6.4 Additions and Amendment</p>	<p>Renewable energy options are considered in Appendix B and eliminated from further analysis.</p> <p>Dry stack tailings method has been carefully evaluated and considered. It is not practicable. Additional documentation related to the dry stack option is available on the public website to include RFI 054 and AECOM 2018g, a technical memorandum. USACE is not required to complete a cost/benefit analysis for the dry stack option.</p> <p>Appendix B evaluates adding lime to the pyritic tailings and concludes there would be no environmental benefit. The option is dismissed.</p> <p>Downstream construction is considered under Alternative 2.</p>

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			<p>Methods8. In particular, the addition of lime to tailings, including the pyrite tailings, should be considered further as an option and potentially considered as an alternative.</p> <p><u>Tailings Dam – Downstream, Centerline, Upstream Construction (Pages 22 – 23)</u></p> <p>For the same reason that upstream construction is correctly dismissed as less stable compared to downstream construction, centerline construction could similarly be dismissed. While that would not be our recommendation, it is for this reason clear that downstream construction must be included as an alternative to the proposed centerline method. In the numerous discussions concerning TSF construction methods, it has always been suggested that if downstream construction can be accommodated, then, in nearly all cases, it is preferred over the more complex, and therefore riskier, centerline construction approach.</p> <p><u>Bulk Basin Tailings – Lined (Page 24)</u></p> <p>The preliminary assessment dismisses lining the bulk tailings impoundment due to “Increased environmental impacts because the liner would retain water in the bulk tails and increase the risk of dam failure.” This rationale does not address the means and methods that are routinely employed on lined facilities such as internal drains and closure intervention measures such as wick drains to address retained water in the tailings. Other means have also allowed several lined tailings impoundments around the world to be safely operated. This dismissal decision also fails to recognize that the majority of TSF failures have been associated with unlined facilities. At several other sites tailings impoundment liners have been included as the proposed option or an alternative explicitly as a measure to reduce the likelihood and consequence of environmental impacts.</p> <p>5 https://arlweb.msha.gov/STATS/PART50/WQ/1978/wq78mn04.asp ⁶ https://www.tmrresearch.com/underground-mining-equipment-market</p>	<p>Lining the bulk TSF is considered in Appendix B and eliminated from further analysis. The evaluation includes consideration of drains and other methods to address retained water.</p>