Bristol Bay Native Corporation Comments on the Clean Water Act 404 Permit Application for the Proposed Pebble Mine Project (POA-2017-271) and the corresponding National Environmental Policy Act Draft Environmental Impact Statement

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I. EXECUTIVE SUMMARY

The Draft EIS for the proposed Pebble Mine Project is deficient as it fails to satisfy the requirements of either the National Environmental Policy Act (NEPA) or Clean Water Act (CWA). A major flaw of the Draft EIS is that much of the information that is necessary to complete a satisfactory review of the Project either does not exist or has not been provided by the Pebble Limited Partnership (PLP). The Corps should suspend its review of the proposed Pebble Mine Project until such time as that information exists and has been provided. The Draft EIS is also fatally flawed in its analysis and presentation of the information that does exist and has been provided. Alternatively, the Corps should revise the Draft EIS and rerelease it for public review and comment. Finally, regardless of what action the Corps takes with respect to the Draft EIS, enough is known about the potential impacts of the proposed Pebble Mine Project to conclude that it cannot be constructed, under any variant, in a way that would not cause significant adverse effects to Bristol Bay, its waters and its fisheries, and therefore the Corps should not issue a permit to PLP.

BBNC opposes the proposed Pebble Mine Project. BBNC’s Board of Directors first articulated this opposition in a 2009 Resolution in which the Board resolved to oppose Pebble given “the unquantifiable impacts the Mine could have on the resources of the Bristol Bay region and BBNC.” This position was further detailed in a second Resolution adopted by the Board in 2018, following the Pebble Limited Partnership’s application for a 404 permit with a specific mining plan proposal. In this second Resolution the Board reaffirmed the opposition to Pebble and further resolved that Pebble is contrary to BBNC’s Fish First priority and “would pose too great a risk to our Native way of life and the cultural, subsistence, economic, and ecological resources of the Bristol Bay region.” BBNC’s position is consistent with the vast majority of the communities within Bristol Bay, which culturally and economically depend on, and thus prioritize the stewardship of, Bristol Bay’s salmon resource.

As further detailed in Section II and Appendix A, BBNC’s interests also include surface and subsurface estate proposed for use in the construction of the Pebble Mine Project. As we have made clear to PLP and the Corps well before the release of the Draft EIS, BBNC has not extended and will not extend to the Pebble Limited Partnership (PLP) any permission to occupy or trespass our lands or make use of our subsurface resources.

The proposed Pebble Mine Project poses fundamental risks to that salmon resource based on its economically necessary large size, the potentially-acid-generating type of ore in the tailings, and its location at the headwaters of Bristol Bay. As described in the Draft EIS, PLP’s current mine plan will result in the direct and permanent loss of 3,560 acres of wetlands and 81.1 miles of streams, including 8.87 linear miles of designated salmon streams. These impacts are unprecedented in the history of the Clean Water Act (CWA) 404 permit program in Alaska and far exceed impacts of any other hardrock mine in Alaska as well as the level of unacceptable adverse impacts that the Environmental Protection Agency (EPA) found, after exhaustive and community-responsive science work and public input, could have on Bristol Bay’s salmon fisheries. The proposed Pebble Mine Project would also
require water treatment in perpetuity to avoid exceedances of toxic effluent from the abandoned mine pit. These facts, plus water seepage from the toxic pyritic tailings that will need to be pumped and treated in perpetuity as well as the seven embankments that would have to be effective in perpetuity to hold back immense amounts of tailings and water, present risks to the fishery and to the people of Bristol Bay that we simply will not accept.

Furthermore, nothing in the Draft EIS or PLP’s 404 permit application and supporting materials refutes EPA’s findings. It is shocking and indicative of the deficiencies in the Draft EIS that the Bristol Bay Watershed Assessment and the EPA’s Proposed Determination are not adequately addressed or utilized in the Draft EIS. EPA’s comprehensive work and a comparison of EPA’s work to PLP’s current mine plan are detailed in Section III and Appendix B to these comments. BBNC is one of the original petitioners to EPA that precipitated its involvement in evaluating the likely impacts of mining of the Pebble ore deposit on Bristol Bay salmon and people. BBNC supports EPA’s Proposed Determination and the accompanying comprehensive science and public participation process that led up to it, and is disappointed that, to date, the Corps has largely ignored that work and completely ignored its well-founded conclusions.

The Army Corps must deny the 404 application because, among other things, the impacts of the proposed Pebble Mine as described in the Draft EIS far exceed the impacts the EPA has already concluded—notably, in an analysis of a smaller mine than the one PLP proposed—could cause or contribute to significant degradation of fishery areas and aquatic resources. As described in detail in Section IV and Appendix C, the 20-year mine proposal would result in impacts to salmon habitat and wetlands that are nearly double the limits in the restrictions proposed by EPA. The 78-year buildout included in the Draft EIS would result in impacts eight to fifteen times the limits in the restrictions proposed by EPA.

<table>
<thead>
<tr>
<th></th>
<th>Draft EIS 20-year</th>
<th>Draft EIS 78-year</th>
<th>EPA Proposed Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ore Mined (12.125 billion ton deposit)</td>
<td>1.44 billion tons (11.9% of delineated resource)</td>
<td>6.67 billion tons (55% of delineated resource)</td>
<td>n/a</td>
</tr>
<tr>
<td>Anadromous Streams Permanently Lost</td>
<td>8.75 linear miles</td>
<td>43.75 linear miles</td>
<td>5 linear miles</td>
</tr>
<tr>
<td>Resident Fish Streams Permanently Lost</td>
<td>20 linear miles</td>
<td>Not quantified.</td>
<td>n/a</td>
</tr>
<tr>
<td>All Streams Permanently Lost</td>
<td>73.2 linear miles</td>
<td>Not quantified</td>
<td>19 linear miles of tributaries to anadromous streams</td>
</tr>
<tr>
<td>Wetlands, Lakes, Ponds Directly and Permanently Lost</td>
<td>3,458 acres</td>
<td>15,903 acres</td>
<td>1,100 acres contiguous with anadromous streams and tributaries of anadromous streams</td>
</tr>
<tr>
<td>Total Mine Site Footprint</td>
<td>8,086 acres</td>
<td>29,632 acres</td>
<td>n/a</td>
</tr>
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</table>
PLP has failed to offer mitigation sufficient to offset these losses as required by the CWA. PLP’s failure to provide a mitigation plan is not surprising, as these immense impacts to waters and aquatic resources cannot be mitigated, as further detailed in Section IV below. It is also not surprising because PLP has failed to assess and quantify the loss of ecosystem function due to its proposal, information which is critical to crafting a legally-compliant mitigation plan. Remarkably, given the fundamental import of the wetlands data, the Corps has not required such a functional assessment as part of the Draft EIS. Nor has PLP provided any proof that its plan to mine less than 12% of the deposit is economically feasible or that it will not mine the full 12.125 billion US tons (11 billion metric tons) that it has delineated. On the contrary, the public record makes it quite clear that PLP plans to mine the entire deposit, as it says time and again to potential investors. Regardless, the strawman mine that PLP is proposing to the Corps presents, in and of itself, unacceptable adverse effects to waters and aquatic resources that support the world’s largest and most important wild sockeye salmon fishery. For these reasons, PLP’s proposed mine cannot be permitted under the CWA 404 program and the Army Corps must deny the 404 permit application.

Furthermore, the Corps cannot issue a 404 permit to the proposed Pebble Mine Project if the permitted activity would be contrary to the public interest. Based on consideration of the public interest factors as described in Section IV(G), and in BBNC’s experience as the largest private landowner and ANCSA regional corporation for the area including the proposed Pebble Mine Project and after more than a decade of review and listening closely to its shareholders and the people of Bristol Bay, it is BBNC’s view that the proposed Pebble Mine Project is contrary to the public interest and thus cannot not be permitted.

From the outset, PLP submitted an inadequate permit application lacking project specifications and advanced engineering, baseline data, and required state and federal permit applications necessary for a proper analysis of the project under the CWA and NEPA. Based on a review of the Draft EIS and supporting documentation, the Army Corps admits to at least 45 project areas missing significant project details. As is detailed in Section V and Appendix D, the missing information relates to key topics including but not limited to:

- **Mine Plan and Design** – missing information includes a mine operations plan with advanced engineering; bulk tailings facility advanced design; embankments advanced design; information on materials used to construct embankments and liners; geotechnical data and drainage engineering for the tailings dam; a fugitive dust control plan; geotechnical boring data; mitigation measures; and economic feasibility analysis
- **Mine Reclamation and Closure** – missing information includes a reclamation and closure plan and a description of financial assurances or bonding
- **Transportation Corridor and Natural Gas Pipeline** – missing information includes pipeline surveys for all alternatives on land and in the Cook Inlet and Iliamna Lake; plans for horizontal directional drilling and trenching; and landowner agreements necessary to cross and use private surface and subsurface lands
- **Port Site Design and Baseline Data** – missing information includes port site final engineering and design; meteorology oceanography baseline data for all port
alternatives; and water flow baseline data at the port alternative

- **Water Treatment and Management Plans and Designs** – missing information includes a detailed water treatment plan; a detailed water management plan; design and placement of water management pond embankment and pump wells; and bench or pilot testing of the water treatment system
- **Baseline Water Flow Surveys and Water Modeling** – missing information includes surface water hydrology baseline information; a completed groundwater model; and groundwater model validation and sensitivity analysis
- **Wetlands Data, Mitigation Plan, and Clean Water Act Compliance** – missing information includes a final compensatory mitigation plan; wetlands and vegetation mapping; field verification of wetlands mapping; a CWA 404(b)(1) guidelines analysis; a public interest review under the Corps’ CWA regulations; and a wetlands functional assessment
- **Subsistence, Cultural Resources, Historic Properties, and Human Health** – missing information includes subsistence baseline data; cultural resources and historic properties baseline information; cultural resources and historic properties field verification data; historic properties evaluation; offshore cultural resources information for the port sites; and a health impact assessment
- **Fish and Wildlife Baseline Data and Plans** – missing information includes fish and wildlife baseline data especially along proposed transportation corridors; a wildlife management plan; and an aquatic resource monitoring plan
- **Transportation Corridor Design, Baseline Data, Mitigation, and Reclamation** – missing information includes final road design; designs and numbers of culverts and waterbody crossings; culvert and bridge designs for fish passage; a transportation corridor reclamation plan; water flow baseline data at the transportation corridor; mitigation measures and engineering of road design; landowner agreements necessary for utilities to cross and use private surface and subsurface lands; and best management practices for road construction

It is worth emphasizing that these are permit applications and Draft EIS deficiencies that the Corps itself has admitted, and which PLP is, partially, trying to resolve with plans to be in the field later in 2019 but in some cases not until after publication of a Final EIS. And, as detailed in Section V and Appendix D, expert cooperating agencies, the EIS third party contractor, and Corps itself express concerns about proceeding with NEPA review without this missing information. Indeed, it was this missing information that led Bristol Bay leaders, including BBNC, and many other expert and public parties, to urge the Corps in 2018 to pause the release of the Draft EIS until PLP provided more information to the Corps.

By common sense and the law, such key information is essential for public review under NEPA and therefore key to the preparation and public review of the Draft EIS. This missing information renders the 404 permit application and public notice, Draft EIS, and NEPA process legally deficient, and the Corps was wrong to release the Draft EIS without it. To cure these legal deficiencies and to abide by public review mandates under the law, the Corps should stop this process and only restart it – with a revised Draft EIS – if and when PLP
provides the missing information.

In addition to filling these substantial data gaps in a revised Draft EIS, the Corps must revise the NEPA alternatives analysis to include a reasonable range of alternatives, as addressed in Section V(E) below. Currently, in violation with NEPA mandates, the Draft EIS presents the public with only a single practicable action alternative – the applicant’s proposed alternative. The Corps has put forward only a single mine plan – PLP’s proposal to mine 1.44 billion tons at 180,000 tons per day – and has failed to issue a Draft EIS containing other expanded mine plans that might also meet the project purpose. The two other action alternatives described in the Draft EIS are simply variants of PLP’s proposal and are themselves in fact not practicable. The fact that the Corps released the Draft EIS with such an unreasonable range of alternatives is made all the more remarkable by the fact that, with respect to both Action Alternatives 2 and 3, PLP itself has stated that it “does not currently have access to private lands in the Diamond Point to Eagle Bay area that would be required for th[ese] alternative[s] to be practicable.”

With only a single practicable transportation alternative (according to the applicant), no practicable natural gas pipeline alternative, and only a single mining scenario to review, the Draft EIS fails to meet the requirements of NEPA to analyze a sufficient range of alternatives. In order to comply with NEPA, the Corps must revise the Draft EIS to provide the public with realistic, practicable project alternatives designed to meet the project purpose, and re-issue the Draft EIS for public review and comment.

Importantly, and as discussed in Section VI, the Pebble Mine Project Draft EIS and NEPA process is currently insufficient for the Corps and other federal permitting agencies to support compliance with other federal laws, such as the substantive requirements of the Outer Continental Shelf Lands Act (OCSLA) and the Rivers and Harbors Act (RHA). These federal permits require compliance with NEPA. In order for agencies such as the U.S. Coast Guard and U.S. Bureau of Safety and Environmental Enforcement to comply with NEPA by relying on this Pebble Project EIS, either they or the Corps must release a revised Draft EIS for public review and comment after these permit applications have been submitted. Furthermore, the Draft EIS improperly relies on and tiers its environmental analysis to future state permits that have not yet been applied for or made available for public review and will not be incorporated into the NEPA process for public review. This approach injects substantial inefficiencies into the federal and state permitting processes, undercutting any claim that the Corps’ fast-track treatment of the Pebble permit application is justified on efficiency grounds.

Finally, as discussed in Section VII below, the National Historic Preservation Act (NHPA) Section 106 consultation process currently underway is insufficient for the Corps to comply with the requirements of that Act. BBNC is a consulting party for the NHPA consultation process and has echoed the concerns of many parties, including the State of Alaska, local tribes, and the Advisory Council on Historic Preservation that the Corps is not complying with the requirements of the NHPA. While the Draft EIS states that NHPA consultation and compliance is underway, NEPA compliance and the Draft EIS cannot legally proceed
without completion of the NHPA consultation process. If the Corps acts to select an alternative or issue any permits without properly completing Section 106 review and consultation, it will have failed to meet legal requirements that apply to the protection and informed decision-making related to historic and cultural values.

II. INTERESTS OF BRISTOL BAY NATIVE CORPORATION

A. RESPONSIBLE RESOURCE DEVELOPMENT, FISH FIRST POLICY, HISTORY OF OPPOSITION TO THE PROPOSED PEBBLE MINE

BBNC is an Alaska Native Regional Corporation created by Congress in 1971 to manage the lands and resources under our ownership and to represent the economic, social, and cultural interests of Alaska Native people from the Bristol Bay region. BBNC takes seriously our responsibilities to protect the assets entrusted to our care and the interests of our approximately 10,500 shareholders. BBNC is committed to responsible land and resource management as well as protection of Alaska Native culture, the subsistence way of life, and the region’s sustainable commercial and sport fishing industries, all of which depend on the region’s pristine waters and healthy salmon populations.

BBNC’s mission is “Enriching our Native way of life.” In fulfilling this mission, BBNC adheres to three core principles: (1) protect the best interests of shareholders; (2) maintain or grow total annual dividends; and (3) celebrate and preserve Alaska Native culture and the connection with the land and waters that support the subsistence way of life. BBNC’s Board of Directors has approved multiple resolutions that evidence the corporation’s land management philosophy. These Resolutions include:

- BBNC Resolution 09-41, “Resource Protection Policy” describing the cultural and economic importance of Bristol Bay’s sockeye salmon runs and providing notice of BBNC’s opposition to the Pebble mine;

- BBNC Resolution 11-28, “In Support of Responsible Resource Development” specifying that BBNC’s policy of resource development in the region “is sensitive to fiscal, environmental, and social sustainability concerns including the protection of subsistence culture, practices, clean water, and healthy fish;”

- BBNC Resolution 13-11, “Fish First Priority” acknowledging that “sustainable

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1 See 43 U.S.C. § 1606.
3 See BBNC, Values & Goals, available at http://www.bbnc.net/our-corporation/about/values-goals/.
4 See id., http://www.bbnc.net/our-corporation/about/values-goals/.
5 See id.
fisheries continue to be the cultural, subsistence and economic cornerstones of the Bristol Bay region,” and affirming that BBNC’s input on land management decisions in the Bristol Bay region on lands not owned by BBNC will be “guided by a priority protection for fish and fish habitat.”

- **BBNC Resolution 18-10, “BBNC Opposition to Proposed Pebble Mine”** reaffirming BBNC’s “opposition to the proposed project as it is contrary to the Corporation's Fish First priority, and would pose too great a risk to our Native Way of life and the cultural, subsistence, economic, and ecological resources of the Bristol Bay region.”

In furtherance of our Responsible Resource Development policy, BBNC seeks out values-driven investments in the Bristol Bay region and its sustainable economies. BBNC defines investment in the traditional sense, placing top value on the returns generated by our businesses throughout Alaska and across the continent. Guided by traditions, we know that investing in the culture, education, and sustainable future of Bristol Bay communities pays off for everyone. Created in 2014 as a subsidiary of BBNC, the Bristol Bay Development Fund (BBDF) is a “nurture capital” fund that unites these two approaches to support the entrepreneurial spirit of our region. BBDF is infusing $5 million into the Bristol Bay economy over an 11-year period, investing in businesses that directly benefit BBNC’s shareholder community. By deploying both financial and non-financial capital—like knowledge, planning assistance, and connections—BBDF acts as a catalyst for the successful launch of brand-new businesses and helps existing companies advance to the next level.

BBNC also seeks out economic opportunities that promote Bristol Bay’s pristine ecosystems and world-class fishery. Across the Bristol Bay region wildlife flourishes across stunningly varied terrain and vivid strands of our Native traditions run throughout the culture. Built on the shores of Lake Aleknagik and steeped in a blend of both Native and western history, BBNC’s Mission Lodge draws travelers from all corners of the globe to some of the best fly-out fishing anywhere. First-class accommodations, trophy sport fishing, great hiking, fine dining, spa services, and caring staff all combine to make a stay at BBNC’s Mission Lodge an unforgettable Bristol Bay experience. Our KatmaiLand Lodges – Kulik Lodge, Brooks Lodge, and Grosvenor Lodge – offer a variety of different experiences and packages within Katmai National Park. Such developments are consistent with our Fish First policy.

Protecting Bristol Bay’s water and salmon resources is of fundamental importance to the social, cultural, and economic interests of our shareholders. They recognize that the salmon resource cannot be put at risk or sacrificed in order to facilitate the extraction of minerals or other resources, as it simply is too important to the people, culture, and economy of the Bristol Bay region.

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8 BBNC Resolution 13-11, “Fish First Policy” (May 17, 2013).
9 BBNC Resolution 18-10, “BBNC Opposition to Proposed Pebble Mine” (March 2, 2018).
BBNC has polled its shareholders’ opinions of the proposed Pebble Mine Project. This polling has shown that over the years, BBNC’s shareholders are steadfast in their opposition to the proposed Pebble Mine Project.

In the most recent shareholder poll, conducted in April-May 2019, of the responses from 4,073 adult shareholders 65% strongly oppose Pebble Mine, 6% somewhat oppose, and 5% lean opposed for overall opposition of 76%.10 Only 6% of BBNC’s shareholders strongly support the proposed Pebble Mine.

In addition, 85% of BBNC’s shareholders are concerned about the risks Pebble Mine poses to Bristol Bay.

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10 See attached Appendix F.
Taking guidance from our shareholders and corporate values, BBNC has opposed the proposed Pebble Mine Project since 2009. BBNC was one of the original petitioners to EPA asking it to exercise its authority under CWA Section 404(c) to protect Bristol Bay salmon resources. Following PLP’s application for a 404 permit with a specific mining plan proposal, BBNC closely reviewed the plans and permit application. Our review confirmed for us that these plans still present unacceptable risk to Bristol Bay, and the Board thereafter reaffirmed its opposition to the Pebble Mine. The Board further resolved that Pebble is contrary to BBNC’s Fish First priority and “would pose too great a risk to our Native way of life and the cultural, subsistence, economic, and ecological resources of the Bristol Bay region.”

BBNC extensively reviewed the amended Pebble Project 404 Permit Application, the Pebble Draft EIS, appendices, and supporting documents available on the Pebble EIS website, as well as attended numerous scoping and Draft EIS public meetings to listen to the concerns of Bristol Bay. BBNC maintains its long-standing position that the proposed Pebble Mine Project, in any iteration of the proposed alternatives discussed in the Draft EIS, is the wrong mine for the wrong place. As precisely stated by our President & CEO Jason Metrokin:

“BBNC does not otherwise oppose mining development. Pebble Mine is simply different. In any configuration, the mine is too big and will be located in too important of a location. It poses unacceptable risks to the salmon resource and consequently, the subsistence lifestyle and economic interests of our shareholders.”

B. BBNC SURFACE AND SUBSURFACE ESTATE AND THE PROPOSED PEBBLE MINE PROJECT

BBNC is also the largest private landowner in the Bristol Bay region, with roughly three million acres of subsurface estate and 116,000 acres of surface lands all under BBNC’s stewardship. In managing its lands, BBNC is guided by its Fish First Policy. A commitment to protect the fish that have sustained the people of Bristol Bay for thousands of years. Through a balanced, sensitive, and far-seeing approach to the management of our lands and waters, we’re able to uphold a triad of values—fiscal, environmental, and social—so that our region can continue to be available for the range of uses we enjoy today. In other words, protecting the subsistence culture of our shareholders is just as important as our corporate growth.

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11 BBNC Resolution 18-10, “BBNC Opposition to Proposed Pebble Mine” (March 2, 2018).
12 https://www.bbnc.net/our-corporation/pebble-mine/ (emphasis original).
BBNC’s holdings include significant property in the vicinity of the Pebble deposit.15 In a resolution dated March 2, 2018, BBNC’s Board directed management to continue to “proactively engage in efforts to protect the resources of the Bristol Bay region and not to make any resources owned or controlled by the Corporation available by sale or otherwise to the construction or operation of Pebble Mine or its related infrastructure or transportation corridor elements.”16 Over the years, BBNC has made this position clear in public and directly to PLP and the Corps, including in writing before the Draft EIS was released.17 In this correspondence, BBNC made clear to the Corps that BBNC “has not extended and will not extend to the Pebble Limited Partnership (PLP) any permission to occupy or trespass our lands or to make use of our subsurface resources. Our Board’s position on these issues is firm and will not change.”18

Regarding its surface estate impacted by the proposed Pebble Mine Project, BBNC is the unrestricted fee title owner of three former Native allotments, numbers AKA-063274A; AKAA-003103; and AKAA-006055, located in the vicinity of Pedro Bay and along the proposed northern transportation corridor route.19

According to the Draft EIS, one parcel owned by BBNC (former Native allotment AKA-063274A), shown below, will be directly impacted in the following ways:

- **Action Alternative 2**: 4.7 acres directly impacted (pipeline)20
- **Action Alternative 3**: 5.1 acres directly impacted by the project footprint (road and pipeline)21

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17 See attached Appx. A pages 9-29; Letter from Daniel L. Cheyette, Vice President, Lands and Natural Resources, BBNC, to Tom Collier, CEO, Pebble Limited Partnership (cc’d to Col. Borders, USACE Alaska Dist.) (Dec. 7, 2018); Letter from Daniel L. Cheyette, Vice President, Lands and Natural Resources, BBNC, to Tom Collier, CEO, Pebble Limited Partnership (cc’d to Col. Borders, USACE Alaska Dist.) (Dec. 21, 2018); Letter from Joseph L. Chythlook, Chair, Board of Directors, and Jason Metrokin, President and CEO, BBNC, to Shane McCoy, Program Manager, USACE (June 6, 2019) (with accompanying attachments). See also, statement of BBNC CEO Jason Metrokin one week before PLP submitted its permit application, KDLG, Lack of dialogue with Bristol Bay Native Corp. disappointing, says Pebble (Dec. 15, 2017), available at https://www.kdlg.org/post/lack-dialogue-bristol-bay-native-corp-disappointing-says-pebble (“We’re not going to build their port, we’re not going to build their roads, we’re not going to help to develop the infrastructure for the project if it’s a project that we oppose.”).


19 See attached Appx. A. The deeds for these unrestricted fee title parcels are included on pages 12-20 of this Appendix.

20 Draft EIS, page 3.2-2, Table 3.2-1.

21 Draft EIS, page 3.2-1, Table 3.2-1.
In addition, two parcels owned by BBNC (former Native allotments AKAA-003103 and AKAA-006055), shown below, are located less than one mile from the proposed transportation corridor and natural gas pipeline as described in Action Alternatives 2 and 3.
Regarding its subsurface estate impacted by the proposed Pebble Mine Project, the following are estimates of BBNC subsurface material proposed for the construction of the road and pipeline for each alternative in the Draft EIS:

- Alternative 1 = 3,300,000 cubic yards of BBNC rock and gravel.
- Alternative 2 = 2,399,313 cubic yards of BBNC rock and gravel.
- Alternative 3 = 4,560,597 cubic yards of BBNC rock and gravel.

The Draft EIS also describes natural gas pipeline alternatives proposed to be buried in BBNC subsurface estate in all three Action Alternatives. The below map shows the location of BBNC’s subsurface estate overlaid by the three Action Alternatives.

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22 See attached Appx. A. The following Alternative 1 Materials Sites are located on ANC property and would thus use BBNC subsurface gravel and rock: MS-A01, MS-A03, MS-N03, MS-T04, MS-T05, MS-T06, MS-T07. See also Draft EIS Appendix K2 (for estimated cubic yards of materials to be extracted from each site).

23 See attached Appx. A. The following Alternative 2 Materials Sites are located on ANC property and would thus use BBNC subsurface gravel and rock: MS-D10, MS-D11, MS-D12, MS-D13, MS-D14, MS-D23, MS-D24, and MS-D25. See also Draft EIS Appendix K2 (for estimated cubic yards of materials to be extracted from each site).

24 See attached Appx. A. The following Alternative 1 Materials Sites are located on ANC property and would thus use BBNC subsurface gravel and rock: MS-D10, MS-D11, MS-D12, MS-D13, MS-D14, MS-D15, MS-D16, MS-D17, MS-D18, MS-D20, MS-D21, MS-D22, MS-D23, MS-D24, MS-D25, MS-D31, and MS-D32. See also Draft EIS Appendix K2 (for estimated cubic yards of materials to be extracted from each site).

25 See attached Appx. A, at pages 1 and 11.
The Draft EIS fails to accurately reflect the impacts of the three Action Alternatives on BBNC’s surface and subsurface estate.\textsuperscript{26} As discussed in this comment letter Section V, the Corps’ failure to include this information in the Draft EIS renders the document and its analysis of alternatives legally deficient. In addition, as discussed in Section IV, BBNC’s opposition to essential project components being located on its private lands must be considered as a factor in the CWA 404 public interest determination and weighs heavily against the Corps issuing a permit for the proposed Pebble Mine Project.

III. FACTUAL BACKGROUND

A. ECOLOGICAL AND ECONOMIC VALUE OF BRISTOL BAY

The Bristol Bay region is vast, containing approximately 40 million acres of land and water.\textsuperscript{27} It contains myriad mountains, rivers, lakes, wetlands, and marine waters.\textsuperscript{28} Much of the region lies within the Bristol Bay watershed—a unique sprawling, permeable, and porous network of creeks and streams that produce large numbers of salmon.\textsuperscript{29} The waters of Bristol Bay contain locally-adapted and genetically distinct populations of salmon that help ensure the long-term health and stability of salmon stocks across the watershed.\textsuperscript{30} For generations upon generations, tens of millions of salmon reliably return to Bristol Bay.\textsuperscript{31}

The Alaska Native people of Bristol Bay come from three different cultural traditions—Aleut, Eskimo, and Athabascan. Salmon are a revered renewable resource that has been harvested sustainably in the region for millennia, and salmon harvesting is central to the cultural traditions of these diverse Alaska Native peoples. Indeed, subsistence activities play a major role in defining Alaska Native families and communities through the passing on of knowledge and traditions from one generation to the next and the reinforcement of Native

\textsuperscript{26} For example, Draft EIS Table 3.2-1 quantifying land ownership acreages entirely omits BBNC and the three Action Alternatives impacts to BBNC surface and subsurface. In addition,
\textsuperscript{27} See BBNC, \url{http://www.bbnc.net/our-corporation/land/maps/}.
\textsuperscript{28} See id.
\textsuperscript{29}See Pebble Science, Moran R., Water-Related Impacts at the Pebble mine (2007), available at \url{http://www.pebblescience.org/Pebble-Mine/water-impact.html} (“The extensive glacial gravel deposits are highly permeable; a characteristic that contributes to salmon productivity but also provides pathways for water and potentially for mine wastes to move between surface and groundwater and between river basins.”).
\textsuperscript{31} See id.
values, such as generosity, respect for elders, self-esteem, and cultural respect.\textsuperscript{32}

Bristol Bay communities are also geographically isolated from the rest of Alaska and, in most cases, from one another.\textsuperscript{33} These communities are self-reliant, operating without the benefit of interconnected road and utility systems, and subsistence use of wild resources is the most consistent and reliable component of the local economy.\textsuperscript{34} As a consequence, studies have shown that the vast majority of households in the region rely on subsistence fishing, hunting, and gathering for a large percentage of their food.\textsuperscript{35} Given the extremely high cost of groceries in rural Alaska, replacing the salmon harvest with store-bought meat would cost approximately $7,500 for the average Alaska Native family, representing nearly 20\% of the average Alaska Native household income.\textsuperscript{36} Commercial fishing is also the major economic engine for Bristol Bay and other Alaskan coastal communities.\textsuperscript{37} Any damage to salmon resources in Bristol Bay would lead to poorer nutrition, as well as economic, social, and cultural hardship.\textsuperscript{38}

The importance of Bristol Bay’s extraordinary salmon resource extends far beyond local communities. Bristol Bay is a sought-after destination for sport anglers around the world, who are drawn to the Kvichak River, Nushagak River, Upper Talarik Creek and other legendary Bristol Bay waterways by the world’s largest sockeye salmon run and extraordinarily large and powerful rainbow trout.\textsuperscript{39} The waters of Bristol Bay support the most valuable commercial sockeye salmon fishery in the world, supplying nearly half of the world’s wild sockeye salmon catch.\textsuperscript{40} Salmon is also by far the most valuable commercial


\textsuperscript{34} See Fall, supra note 155, at 2.

\textsuperscript{35} Between 1975 and 2007, subsistence salmon harvests have averaged about 152,000 fish per year. See id., at 5; Callaway, Don, A Statistical Description of the Affected Environment as it Pertains to the Possible Development of the Pebble mine—17 Communities in Bristol Bay at 17 (2012) (a study funded by Bristol Bay Native Corporation).

\textsuperscript{36} Id. at 27-28.


\textsuperscript{38} See Knapp, Gunnar, et al., Institute of Social and Econ. Research, Univ. of Alaska Anchorage, The Economic Importance of the Bristol Bay Salmon Industry (April 2013), available at http://www.iser.uaa.alaska.edu/Publications/2013_04-TheEconomicImportanceOfTheBristolBaySalmonIndustry.pdf [hereafter ISER Report].


fish managed by the State of Alaska, and Bristol Bay is Alaska’s richest commercial
fishery.  

Bristol Bay’s commercial salmon fishery provides enormous economic benefits to both the
Alaska and national economies.  Nearly one-third of all of Alaska’s salmon harvest
earnings come from the Bristol Bay region and the seafood industry contributes $5.8 billion
to the Alaska economy and 78,500 jobs.  The 2017 sockeye salmon catch in Bristol Bay
had a direct harvest value of $214.6 million and—owing to Bristol Bay processing and
sustainable management—was almost double the 20-year average of $108.9 million. And
in 2018, 62.3 million sockeye salmon returned to Bristol Bay, the largest salmon season ever,
based on records dating back to 1893, marking the fourth consecutive year that inshore
sockeye salmon runs exceeded 50 million. The Nushagak and Kvichak River systems
alone accounted for more than 50 million returning sockeye in 2018, or more than 80% of
the entire Bristol Bay run. The 2018 season also ranks first in the history of the fishery’s
evessel value, with a preliminary estimate of $281 million, or 242% above the 20-year
average of $116 million. On an average year, the secondary wholesale value increases to
more than $503 million when additional shipping, secondary processing, and distribution
expenditures are added to the estimate.

The nationwide benefits of the Bristol Bay commercial fishery are also compelling. The
nearly 14,000 seasonal fishing and processing jobs created by the Bristol Bay salmon fishery
give rise to an additional 5,852 year-round jobs for United States residents, which generate
an estimated $411.7 million in earnings for these workers. On an average year, Bristol Bay
salmon fisheries thus create a total economic output value of $1.5 billion.

Salmon are the basis for much of Bristol Bay’s community strength. By example, in
February of 2011, after nearly two years of engaging community members in 27
communities, the people of Bristol Bay drafted the “Bristol Bay Vision Statement.” The statement reflects the community’s shared values, opinions, and concerns of the residents, and shows that people in the community strongly agree on their values and goals for the future, such as the following:

- **The foundation** of the Bristol Bay Region is committed families, connected to our land and waters.
- **We believe** future generations can live healthy and productive lives here. Across our region, we share common values of community, culture, and subsistence.
- **We assert** the importance of local voices in managing our natural resources to continue our way of life.
- **We welcome** sustainable economic development that advances the values of Bristol Bay people. Our future includes diverse economic opportunities in businesses and industries based largely on renewable resources. Large development based on renewable and nonrenewable resources must not threaten our land, our waters, or our way of life.
- **We are unified** to secure a prosperous future.

**B. EPA Watershed Assessment and Pending 404(c) Action**

The loss of salmon-supporting waters from the proposed Pebble mine would be devastating and unprecedented in Alaska. In 2010, BBNC along with Alaska Native Tribes and others, called upon EPA to exercise its authority under CWA Section 404(c) to protect Bristol Bay salmon resources. In response, EPA took a conservative yet reasonable approach to establishing aquatic resource loss limits, an approach that is well within its discretion and that achieves the need for protection of valuable fisheries resources. Appendix B to this comment letter describes in detail EPA’s Bristol Bay Watershed Assessment findings, lengthy administrative record, and the well-founded proposed 404(c) restrictions. The vast administrative record for the EPA Watershed Assessment and Proposed Determination represents the best available science regarding Bristol Bay and the threats posed from mining the Pebble deposit.

EPA responded to the region’s 404(c) petitions by conducting extensive public outreach and by performing a watershed assessment to gather information and study the potential risks associated with large-scale mining in Bristol Bay. In January 2014, following three years of study that included dozens of meetings with stakeholders in the region, extensive scientific analysis, multiple rounds of public hearings, several draft documents, two rounds of peer

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53 Letter from Jason Metrokin, BBNC, to Dennis McLerran, EPA Region 10 (Aug. 12, 2010). EPA has also received “over 850,000 requests from citizens, Tribes, Alaska Native corporations, commercial and sport fisherman, jewelry companies, seafood processors, restaurant owners, chefs, conservation organizations, members of the faith community, sport recreation business owners, elected officials and others asking EPA to take action to protect Bristol Bay.” See [http://yosemite.epa.gov/opa/admpress.nsf/names/r10_2014-2-28_bristol_bay](http://yosemite.epa.gov/opa/admpress.nsf/names/r10_2014-2-28_bristol_bay).
review, and consideration of 1.1 million public comments, the vast majority of which echoed the early petitioners’ call for action (including a remarkable 98% from the Bristol Bay region during one comment period), EPA finalized its Bristol Bay Watershed Assessment (BBWA).\footnote{See EPA, An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska (2014), available at \url{http://cfpub.epa.gov/ncea/bristolbay/recordisplay.cfm?deid=253500#Download} [hereafter “Bristol Bay Assessment” or “BBWA”].} Thereafter, in February 2014 EPA at long last took a first step toward protecting the Bristol Bay salmon resources for future generations by proposing an “unacceptable adverse effects” determination\footnote{Letter from Dennis McLerran, EPA Region 10 Regional Administrator, to Tom Collier, PLP CEO, Joe Balash, Commissioner, ADNR, and Col. Christopher D. Lestochi, Commander, USACE Alaska Dist. (Feb. 28, 2014).} and then later in July 2014 took a second step toward protecting Bristol Bay by issuing a Proposed Determination on restrictions on discharges of wastes from mining the Pebble deposit.\footnote{EPA, Proposed Determination of the U.S. Environmental Protection Agency Region 10 Pursuant to Section 404(c) of the Clean Water Act—Pebble Deposit Area, Southwest Alaska, (July 2014), at page 5-1, available at \url{https://www.epa.gov/sites/production/files/2014-07/documents/pebble_pd_071714_final.pdf} [hereinafter “Proposed Determination” or “PD”].}

In its 404(c) Proposed Determination for mining the Pebble deposit, EPA put forward a set of restrictions based on the unacceptable adverse impacts that would be expected from the “construction and routine operation of a 0.25 [billion ton] stage mine at the Pebble deposit.”\footnote{PD at ES-6, 5-1. EPA’s “0.25 stage mine” refers to the mine scenario developed by EPA in the BBWA, based on PLP’s submissions to the SEC and State of Alaska and the worldwide median size for copper porphyry mines. The scenario consists of mining approximately 0.25 billion US short tons of ore over 20 years. See PD at ES-3.} EPA proposed reasonable upper limits for aquatic resource losses resulting from the discharge of dredged or fill material from mining the Pebble deposit. These upper limits, imposed on discharges individually or collectively, include any of the following:

- 5 or more linear miles of streams with documented anadromous fish occurrence;
- 19 or more linear miles of stream tributaries where anadromous fish occurrence is not currently documented, but that are tributaries to streams with documented anadromous fish occurrence;
- 1,100 or more acres of wetlands, lakes, or ponds contiguous with either streams with documented anadromous fish occurrence or tributaries of those streams; and
- Greater than 20% of daily flow in 9 or more linear miles of streams with documented anadromous fish occurrence.\footnote{PD at ES-6, 5-1.}

EPA had a solid foundation for its proposed “unacceptable adverse effects” determination under its CWA authority. As described in the BBWA, a large-scale mine at the Pebble deposit would destroy large tracts of vital salmon habitat because of the inherent geographic nexus between the ore deposit and important salmon streams. Moreover, mining at the Pebble deposit, like other metallic sulfide mining, would generate enormous quantities of tailings and waste material containing copper and other toxic metals. These materials could
potentially escape into the surrounding environment during routine operations as well as through future mishaps and failures, destroying and degrading many miles of salmon streams and thousands of acres of interconnected wetlands, ponds, and lakes.\textsuperscript{59}

Support remains strong for EPA’s Proposed Determination and for final 404(c) action. Through 2017, more than 2.5 million public comments had been submitted to the EPA supporting its efforts to protect Bristol Bay from the proposed Pebble Mine Project and opposing any rollback of these protections.\textsuperscript{60}

\textbf{SINCE 2012, MORE THAN 2.5 MILLION TOTAL COMMENTS SUPPORT EPA ACTION TO PROTECT BRISTOL BAY}

\begin{itemize}
  \item Support EPA Action to Protect Bristol Bay
  \item Oppose EPA Action to Protect Bristol Bay
\end{itemize}

\begin{itemize}
  \item 224,910 (95%)
  \item 654,160 (73%)
  \item 669,107 (99.7%)
  \item 1,000,210 (99.875%)
  \item 10,887 (5%)
  \item 241,799 (27%)
  \item 2,076 (0.3%)
  \item 1,255 (0.125%)
\end{itemize}

WATERSHED ASSESSMENT DRAFT 1 (2012)
WATERSHED ASSESSMENT DRAFT 2 (2013)
404(C) PROPOSED DETERMINATION (2014)
PROPOSAL TO WITHDRAW PROPOSED DETERMINATION (2017)


In Alaska, people in record numbers have commented to the EPA asking the agency to protect Bristol Bay from the proposed Pebble Mine Project.\textsuperscript{61}

\textsuperscript{59} See BBWA, at Chapter 8.


As EPA heard during public hearings in the Bristol Bay region in October 2017, the people of the region overwhelmingly requested that EPA keep its proposed restrictions in place. EPA heard strong testimony about the cultural and economic uncertainty the people in the region are facing from the proposed Pebble mine. Of the 120 people who testified in the two public hearings in Dillingham and Iliamna, more than 85% supported keeping the Proposed Determination in place. The agency also received more than one million written public comments in fall 2017, more than 99.9% of which supported keeping the agency’s Proposed Determination in place.

On January 26, 2018, EPA Administrator Pruitt announced that, after hearing directly from stakeholders and the people of Alaska, the agency would suspend its review of the Proposed Determination and keep it in place. In announcing his decision, the Administrator noted that “it is my judgment at this time that any mining projects in the region likely pose a risk to the abundant natural resources that exist there. Until we know the full extent of that risk, those natural resources and world-class fisheries deserve the utmost protection.”

EPA’s decision to invoke its 404(c) authority and its findings in the Proposed Determination are supported by a vast record and the best available science, as is its decision to keep the Proposed Determination in place. EPA’s decision came one month after PLP submitted its permit application to the Army Corps detailing nearly 4,000 acres of wetlands and a salmon spawning habitat tributary of the North Fork Koktuli permanently destroyed. In making its decision to keep the 404(c) Proposed Determination in place, EPA noted its consideration of “recent developments,” notably the submission of PLP’s 404 permit application. EPA cannot change its direction on this issue because, as shown by PLP’s 404 permit application

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63 EPA, Notification of Decision Not To Withdraw Proposed Determination To Restrict the Use of an Area as a Disposal Site; Pebble Deposit Area, Southwest Alaska, 83 Fed. Reg. 8668, 8670 (Feb. 28, 2018).
and supporting materials and the body of research and analysis compiled by the EPA, the scientific grounds to do so simply do not exist.\textsuperscript{64} For the Corps to entirely ignore EPA’s 404(c) Proposed Determination and its well-founded conclusions in the Draft EIS sows confusion and apprehension in Bristol Bay, and undermines the analytical and public disclosure purposes of the Draft EIS.\textsuperscript{65}

PLP’s most recent mine plans have done nothing to quell the existing apprehension throughout the Bristol Bay region. To the contrary, the people of Bristol Bay are even more fearful that the Corps will allow PLP to segment its operations and thereby mask the full extent of impact. PLP is currently proposing to mine approximately 1.44 billion of the 12.125 billion US ton deposit currently delineated. In contrast, EPA found that a mine proposal \textit{one-sixth this size}\textsuperscript{66} would eliminate or dewater at least 4.7 miles (7.6 km) of streams with documented occurrence of coho and Chinook salmon.\textsuperscript{67} According to EPA, this level of “large impact on anadromous fish streams \textit{is unprecedented in the context of the CWA Section 404 regulatory program in Alaska}.”\textsuperscript{68} In addition, experts who examined the deposit concluded that some of the mine waste would require treatment in perpetuity,\textsuperscript{69} with PLP consultants acknowledging that the timeframe for “concern” for mine waste could be on the order of 10,000 years.\textsuperscript{70} It was these scientific findings, among others, founded in the EPA’s Watershed Assessment after years of study and public input, that led the agency to propose its 404(c) determination for the mining of the Pebble ore deposit, noting the “ecological and mineral resources of the Bristol Bay watershed create one of the unique instances anticipated” for the use of 404(c) restrictions.\textsuperscript{71}


\textsuperscript{65} The Draft EIS fails to mention or cite to EPA’s Proposed Determination. Furthermore, the Draft EIS sparsely cites to EPA’s BBWA and, of the 747 references utilized in the BBWA, the Draft EIS contains only 42 references in common. \textit{See} \url{https://pebblewatch.com/source-documents/}.

\textsuperscript{66} These EPA impact estimates are for a mine size of 0.25 billion tons. As of its May 11, 2018 “Technical Update” to its Army Corps permit application, PLP plans to mine 1.5 billion tons of material. \textit{See} \url{https://pebbleprojecteis.com/} (“Monday, May 21, 2018 – Updates to Project Information Available”).

\textsuperscript{67} PD at 4-6; \textit{see also} BBA at Figure ES-2.

\textsuperscript{68} PD at 4-6.

\textsuperscript{69} \textit{Id.} at 4-62. The Corps must not take at face value PLP’s current claims that it need not treat and maintain pyritic tailings in perpetuity. \textit{See}, e.g. Memo from James Fueg, PLP, to Shane McCoy, USACE (May 11, 2018), Technical Note on Updates to PLP’s Proposed Project, pp. 2-3, \textit{available at} \url{https://pebbleprojecteis.com/files/05_11_2018_Pebble_Project_Updates_to_Proposed_Project.pdf}. The Corps must take a hard look at this assertion and analyze it in the face of abundant scientific evidence to the contrary. Indeed, PLP’s assertion is premised on PLP closing the open pit after 20 years, something that is contradicted by the company’s simultaneous claims that the mine will operate for “generations” and upwards of 200 years.

\textsuperscript{70} \textit{See} The Keystone Center, Panels on Geology and Geochemistry & Hydrology and Water Quality (Oct. 2-4, 2012), video available at \url{https://www.youtube.com/watch?v=T9tD35mqab8}.

\textsuperscript{71} PD at 4-2.
C. THE PROPOSED PEBBLE MINE PROJECT

1. History of Exploration and Ownership at the Pebble Deposit

The Pebble deposit was first explored by Cominco America Incorporated between 1985 and 1997. Drilling on the Pebble deposit began in 1988 and continued through 1997, with 117 holes totaling 62,930 feet completed. During this time, baseline environmental, engineering, and preliminary economic studies were initiated. Cominco then decided not to pursue a mine, and the claims subsequently changed hands to, and were explored by Northern Dynasty Minerals Ltd. (NDM) between 2001 and 2007. NDM is a subsidiary of Hunter Dickinson Inc. (HDI), a private company based on Vancouver Canada focused on mineral exploration and development worldwide. The Pebble deposit is NDM’s sole mining asset. As described below PLP came into existence in 2007, and it was the corporate vehicle that explored the claims between 2007 and the present.

Mineral exploration of the Nushagak and Kvichak River watersheds resulted in the discovery of additional low-grade mineral deposits. Between 2001 and 2011, NDM/PLP staked additional claims, conducted further geochemical and geophysical surveys, completed 698,296 feet of drilling to delineate the Pebble deposit, and completed 169,151 feet of drilling elsewhere on the land. By 2013, NDM/PLP had drilled 1,355 holes on the Pebble property, totaling 1,042,218 feet. This work resulted in significant expansion of the western delineation of the Pebble deposit, and the discovery of an ore deposit to the east. Some engineering, baseline environmental studies, and stakeholder engagement work also occurred during this time, ending in 2013. And, as described below, throughout its years of mineral exploration and continuing through today, NDM/PLP has touted the Pebble ore deposit as huge and world class, noting that the mine that will operate for “generations.”

Knowing that it needed outside capital to proceed, NDM created PLP in 2007 with Anglo American PLC to design, permit, construct, and operate a long-life mine at the Pebble

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72 Id. at 2-1.
75 NDM, 2018 Technical Report on the Pebble Project, supra n. 74, at 63.
76 PD at 2-1.
77 See also, archived PLP website as of February 2018, available at https://web.archive.org/web/20180206055318/https://www.pebblepartnership.com/plan.html ("Construction is expected to take 4–5 years, whatever form the project design ultimately takes. We know that the Deposit is large enough, and rich enough, to sustain production for 20 years, and quite possibly operate for generations.” and “Our current plan is for a 20-year mine. We believe it’s possible that the Deposit may hold a century’s worth of minerals").
deposit. Notably, NDM and PLP have never actually developed or operated a mine and instead, over the past 12 years have attempted to work with many major mining companies to help fund exploration and permitting of the mine. Every major mining company that initially engaged on the project subsequently walked away. In 2011, Mitsubishi Corporation, which held a significant amount of NDM shares, divested those shares. In 2013, Anglo American PLC followed and withdrew from its 50-50 partnership with NDM in PLP. And in 2014, Rio Tinto walked away from the project, donating its shares to education and community groups in Bristol Bay and Alaska. It is largely understood that these major mining companies exited the project because of its poor economics and lack of social license from the people of Bristol Bay. In December 2017, NDM announced that it had entered into a “framework agreement” with First Quantum Minerals (FQM) to help fund the permitting process and negotiate terms of an “options agreement,” which, if taken to fruition, would have resulted in a $1.5 billion infusion in exchange for a 50% stake in PLP. However, after conducting its due diligence in the first months of 2018, FQM terminated the framework agreement and announced it would not be moving forward with an agreement with NDM. After the departure of FQM, PLP has acknowledged that the permitting process will cost at least $150 million.

As it now stands, PLP is wholly comprised of NDM only, in turn with NDM’s parent company HDI and its overlapping directors playing a major financing role. As of the filing of its latest financial quarterly report at the end of March 2019, NDM had approximately US$15 million cash on hand and owed approximately US$12 million in liabilities by the end

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78 Id.
85 See, e.g., NDM Corporate Presentation, at p. 25 https://www.northerndynastyminerals.com/investors/presentations/ (showing NDM/HDI insiders owning 15.5% of the company’s shares). See also, statement of Ron Thiessen regarding the company’s stock offering announced on June 19, 2019, Northern Dynasty Minerals Ltd. Presentation at John Tumazos Very Independent Research Metals and Natural Resources Conference 2019, Holmdel, NJ (June 19, 2019 5:25 p.m.), available at http://wsw.com/webcast/vir18/nak/?lobby=true&day=1 (“A lot of that financing is taken by significant shareholders in the company.”).
of 2019.\textsuperscript{86} NDM has, in turn, used a variety of piecemeal approaches to raise money to fund its work through the permitting process.\textsuperscript{87} NDM’s current operating capital of $3 million\textsuperscript{88} for the company’s permitting activities in 2019, despite its efforts to raise money to pay for permitting on an as-needed basis, is insufficient to fund the remainder of the 404 permitting process, as evidenced by the fact that PLP is curtailing planned 2019 on-the-ground data gathering and field activities.

Finally, NDM has not completed its exploration efforts at the Pebble site. NDM currently plans to drill up to 121 geotechnical boreholes between 2019 and 2023 to further delineate the deposit and to inform its engineering of the mine pit, multiple tailings embankments, water management pond, and quarries.\textsuperscript{89} This is because, as NDM regularly discloses to its shareholders, the company has no final, economic plan to develop the Pebble deposit:

the Company cautions that the plan described above may not be the final development plan. A final development design has not yet been selected. The proposed project uses a portion of the currently estimated Pebble mineral resources. This does not preclude development of additional resources in other phases of the project in the future…\textsuperscript{90}

2. PLP and NDM Tout a 12.125 Billion Ton Deposit with 12 Additional Potential Deposits in 266,356 Acres of Mining Claims

Much evidence exists in the public record and in EPA’s 404(c) record to suggest that a mine at the Pebble deposit will be much larger than the one currently proposed by PLP. Failure of the PLP to put forth an economic feasibility report of its 20-year, 1.44 billion ton proposal,\textsuperscript{91}

\textsuperscript{86} NDM, Management’s Discussion and Analysis Three months ended March 31, 2019, at pages 8 (cash on hand) and 21 (current liabilities), \textit{available at} \url{https://www.sec.gov/Archives/edgar/data/1164771/000149315219008038/ex99-2.htm}.

\textsuperscript{87} See, e.g., NDM Press Release, Northern Dynasty Announces US$5.0 Million Bought Deal and Concurrent Up To US$1.5 Million Private Placement (June 19, 2019), \textit{available at} \url{https://www.sec.gov/Archives/edgar/data/1164771/000106299319002680/exhibit99-1.htm}.

\textsuperscript{88} NDM, Management’s Discussion and Analysis Three months ended March 31, 2019, at page 26, \textit{available at} \url{https://www.sec.gov/Archives/edgar/data/1164771/000149315219008038/ex99-2.htm}.

\textsuperscript{89} See Alaska Department of Natural Resources, 2019-2023 Miscellaneous Land Use Permit to PLP for Hardrock Exploration, Maintenance, and Reclamation (March 29, 2019), \textit{available at} \url{http://dnr.alaska.gov/mlw/mining/largemine/pebble/pdf/A20196118-FINALPACKAGE-SIGNED.pdf}.

\textsuperscript{90} NDM, Management’s Discussion and Analysis Three months ended March 31, 2019, at page 9, \textit{available at} \url{https://www.sec.gov/Archives/edgar/data/1164771/000149315219008038/ex99-2.htm}.

\textsuperscript{91} Even the exact proposal has changed over the course of this short permitting process. Initially, PLP submitted a 404 permit application for a 1.2 billion ton proposal, then modified its project plans to a 1.5 billion ton proposal, and then again modified its plans to the 1.44 billion ton proposal currently analyzed in the Draft EIS.
despite promises to do so “certainly by the end of 2018,” raises serious doubts as to the economic viability of its “small mine” proposal. Record documents from NDM and PLP, including submissions of a larger plan design to the State of Alaska and the Securities Exchange Commission, suggest a larger design will be developed at the Pebble deposit. In addition, PLP and NDM tout an additional 12 mineral deposits located on its mining claims targeted for future exploration and possible development, with the Pebble deposit and its mill and infrastructure located at the heart of spreading development. Finally, the record shows a race to stake claims surrounding the Pebble deposit by other companies hoping to utilize PLP’s infrastructure. As described in Section V(D) of these comments, the Draft EIS illegally segments NEPA review of a mine at the Pebble deposit and should consider the actual proposal to mine 6.5 billion tons at the deposit, as well as fails to consider the reasonably foreseeable future actions of potential mines on NDM claims and other company claims surrounding the Pebble deposit and utilizing the same infrastructure to facilitate.

Deposit Size, Larger Mine Plans, and Economics. Belying its “small mine” claims, whenever PLP’s parent company, NDM, discusses the Pebble deposit to its investors, the SEC, the Canadian Securities, and even with regulators and politicians, it speaks of a more than 11 billion metric ton deposit. Indeed, the stated goal of PLP’s parent company is to expand mine operations for generations. For example, in the months leading up to the scoping process on this permit application alone, NDM’s CEO made the following public statements regarding the size of the Pebble deposit and the life of the mining project there:

- “We need to walk before we run. That we need to build something that the region, the state, and the communities would be comfortable with… These projects are conducive to large-scale operations. The bigger you build it – you know, because almost you make the same amount of money for every unit that goes through it, so the more units that go through the plant, the more money you make – but scale has impacts and people wanna say can you manage impacts before we let you build the monster, something really, really large.”

92 Interview with PLP CEO Tom Collier, Alaska Journal of Commerce, Pebble owners working to refine economics of smaller plan (April 11, 2018). http://www.alaskajournal.com/2018-04-11/pebble-owners-working-refine-economics-smaller-plan (“Pebble CEO Tom Collier said in an April 9 interview that the junior mining company plans to change that by the end of the year, if not sooner, by publishing a preliminary economic assessment, or PEA, for its new mine plan. … He said Pebble hopes to have the PEA done by the end of this quarter for release in the third quarter of the year or certainly by the end of 2018.”).

93 11.0 billion metric tons equates to 12.1254 billion US (or short) tons.

94 See NDM, Pebble Project Overview at https://www.northerndynastyminerals.com/pebble-project/project-overview/ (last accessed June 21, 2019) (“The current resource estimate includes 6.5 billion tonnes in the measured and indicated categories … and 4.5 billion tonnes in the inferred category.”).

95 Statement of Ron Thiessen, Denver Gold Forum (Sept. 25, 2017), http://www.denvergoldforum.org/dgf17/company-webcast/NDM-CN/ (“this project, it’s a multi-generational opportunity. Its size and scale will lead to a very, very long life mine and the property we have hosts showings that we’ve got drillholes in that we believe there’s other mining opportunities as well.”).

• “This is the kind of project that is a generational opportunity. … I don’t know too many mines that start off at a scale and don’t change over time … At 160,000 tons a day, the resource that we have actually could last for 200 years.”97

• “You know, and finally, this project, it’s a multi-generational opportunity. It’s size and scale will lead to a very, very long life mine and the property we have hosts showings that we’ve got drillholes in that we believe there’s other mining opportunities as well.”98

• “This is 10 billion tons. It’s open in three directions. On the East end of the deposit there’s a fault … on the other side of the fault contains the highest grade hole that’s not included in the 10 billion tons; so there’s substantial resources on the other side of that fault.”99

• “In addition, we’ve got about just under 500 square miles of mineral titles… There in the largest block [graphic on screen] you can see the actual Pebble deposit and in those other circles represent additional anomalies. Many of them have drillholes in them and many of those ore grade…. this represents development for many years, perhaps centuries into the future. And when you build the infrastructure in there and you’ve got a concentrator you can feed it forever. And old pits or old subsidence zones can be used for new waste deposition sites or new tailings sites without increasing the footprint of the project overall. So it really is, I think, a huge opportunity. The other thing is comparing Pebble overall to some of the well-known districts in the world, we can see that, you know, porphyry’s by their nature tend to happen in clusters, no different [for] Pebble.”100

PLP’s CEO himself has stated that even if PLP does not expand the mining beyond a 20-year, 1.5 billion ton development: “it’s unlikely that much copper and gold will be left in the ground, and so someone will probably come along and want to do a second phase of the project at another time.”101

PLP has no economic feasibility study underlying its current 20-year, 180,000 tons per day mining scenario. PLP’s closest corollary is the 25-year “Investment Decision Case” to mine

99 Id. at 2:50-3:49.
100 Id. at 4:33-5:55.
about 2.0 billion tons of material at a rate of 219,000 tons per day and mine 16% of the known deposit, described in its 2011 Preliminary Economic Assessment.102 PLP filed this proposal with the U.S. Securities Exchange Commission and with Canadian Securities agencies, noting that this 25-year, 2.0 billion ton proposal “is the most comprehensively engineered” and should be considered an “initial phase of mining.”103 Along with this 2.0 billion ton proposal, the SEC filing contained economic analysis and details for a 45-year, 3.8 billion ton open-pit “Reference Case” proposal and a 78-year, 6.5 billion ton open-pit “Resource Case” proposal.104 The 2011 Preliminary Economic Assessment noted that the “Pebble Deposit is very large, and even the 78 year Resource Case would exploit only 55% of the total resource.”105 The tailings facility location and design and mine-site layout described in the 2011 Preliminary Economic Assessment for the 2.0 billion ton scenario was substantially similar to PLP’s Initial Application for Certificate of Approval to Construct a Dam and Surface and Groundwater Right Applications filed in 2007 with the State of Alaska Department of Natural Resources.106 It was this 2011 Preliminary Economic Assessment and applications filed with the State of Alaska that formed the basis of EPA’s analysis of the proposed Pebble Mine Project in the Bristol Bay Watershed Assessment.

The Corps, as the EPA likewise did years ago, should look objectively at the low-grade nature of the Pebble ore body and the high expense in operating a massive hardrock mine in remote Alaska where there exists no present infrastructure. Given the controversy engendered by PLP’s permit application and NDM and PLP’s lack of credibility in Bristol Bay, a rigorous review by the Corps is necessary to establish the true minimal scope of the likely mining of the Pebble ore deposit and thus ensure the proper analysis that the CWA and NEPA requires. As noted by then EPA Administrator Gina McCarthy in a letter to PLP dated September 30, 2013, “The U.S. Environmental Protection Agency has reviewed Northern Dynasty’s robust February 2011 Securities and Exchange Commission filings, which suggest that a mine plan with such a short [18 to 20 years] time horizon might not be economically viable and that a 45-year to 78-year horizon is the most likely development scenario.”107 And according to PLP itself in a technical note to the Corps dated March 20, 2018, a project alternative of 50,000 tons per day (larger than the 31,000 tons per day

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103 Id.

104 Id.

105 NDM, Preliminary Assessment of the Pebble Project, Southwest Alaska, prepared by Wardrop (Feb. 17, 2011), at page 81. See attached Appx. F.

106 See attached Appx. F.

107 See Letter from Gina McCarthy, EPA Administrator, to John Shively, PLP CEO (Sept. 30, 2013). See attached Appx. F.
smallest scenario analyzed by EPA), “does not produce a positive financial return.”

Even more recently, on May 15, 2019, the Army Corps quietly uploaded an amended PLP response to a Request for Information regarding mine throughput options. A prior version of PLP’s response, dated October 11, 2018 concluded that a mining scenario of 115,000 tons per day (smaller than the current proposal of 180,000 tons per day) “provides a return of approximately $20 million over 31 years on an initial investment of $3.8 billion;” however, the amended version dated May 15, 2019 of that same mining scenario concluded that it “does not have a positive net present value and is therefore not a feasible economic alternative.”

In the context of this history, the Corps must independently review all assumptions made by PLP regarding whether its project proposal and various project alternatives are economically feasible. Anything less is to deal in unrealistic hypotheticals. The Corps should view any economic claims made by PLP with skepticism. In addition, the Corps has ample information in the record from PLP’s filings with the State of Alaska, the SEC and Canadian securities, as well as the analysis conducted by EPA, to analyze the true proposal for mining the Pebble deposit, a proposal that without a doubt exceeds the current 1.44 billion ton proposal. As described in Section V(D) of these comments, failure to do so violates NEPA.

**Additional Exploration Targets Identified by PLP.** PLP holds 2,402 state mining claims located on 266,356 acres at the headwaters of Bristol Bay. Within those claims, PLP/NDM describes a resource estimate at the Pebble deposit as 6.5 billion metric tons measured and indicated and 4.5 billion metric tons inferred. In defining its 11.0 billion metric ton deposit, PLP/NDM refers only to the main delineated deposit itself, noting that the main delineated deposit may extend to the east and south into areas as yet undelineated and unexplored. Indeed, PLP/NDM states that a borehole “drilled outside the current resource… demonstrates the high-grade potential to the east,” and that “[t]here also remains exciting exploration potential to add to the known resource … to the east, at depth, and possibly, to the south.” Mining of the Pebble deposit beyond the 11.0 billion metric tons currently delineated must be included as a Reasonably Foreseeable Future Action by the Corps in its EIS.

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108 Technical Note on Project Options and Screening Criteria, from James Fueg, PLP, to Shane McCoy, USACE (March 20, 2018), p. 6. See attached Appx. F.
109 Memo from James Fueg, PLP, to Shane McCoy, USACE, re RFI 059a (Oct. 11, 2018). For the changes between the original PLP response and the amended version uploaded to the Pebble EIS website on May 15, 2019, see attached Appx. F.
111 https://www.northerndynastyminerals.com/pebble-project/project-overview/
112 https://www.northerndynastyminerals.com/pebble-project/geology-and-exploration/
113 Id.
In addition to the Pebble deposit itself, PLP/NDM describe 12 additional mineralized areas within its mining claims that “warrants follow-up drilling in the years ahead,” as “[t]he potential to find and delineate satellite deposits elsewhere on the Pebble property is clear.” 114

NDM notes that:

10 zones of Cretaceous mineralization, comparable in age to the Pebble deposit have already been discovered in the area. These include several porphyry copper as well as gold and polymetallic vein prospects. … In addition, two identified zones of precious-metals bearing, vein-style mineralization of Eocene age occur on the property. 115

These 12 additional deposits located on NDM/PLP property include: the Sill prospect (Eocene), Sharp Mountain Zone (Eocene), the 1 Gold Zone, the 25 Gold Zone, the 65 Porphyry Zone, the 37 Skarn Zone, the 38 Porphyry Zone, the 52 Porphyry Zone, the 308 Porphyry Zone, the 459 Zone, the 498 Zone, and the 522 Zone. 116 These twelve deposits are depicted on the map below.

Source: Northern Dynasty Minerals 117

114 Id.
115 Id.
117 https://www.northerndynastyminerals.com/pebble-project/geology-and-exploration/
The EIS should analyze and disclose potential impacts under reasonably foreseeable development scenarios in which mining operations eventually expand to the extent of economically viable extraction of mineral resources at the Pebble deposit, including mining the entire known 11.0 billion ton deposit, mining the additional ore to the south and east of the main deposit, and mining the 12 additional mineral targets identified by PLP and NDM within its 2,402 mining claims. As NDM’s President & CEO plainly stated last year, “when you build the infrastructure in there and you’ve got a concentrator you can feed it forever.”

**Surrounding Mine Claim Speculation and Proposals to Use Joint Infrastructure.** As early as 2004, prompted by press releases from NDM related to its exploration work, mining companies began speculating on a large mine at the Pebble deposit and how they might tier their own mineral prospects to the Pebble deposit. A rush to stake claims surrounding NDM’s claims ensued, as noted in one mining publication in 2004, “recent exploration by Northern Dynasty, has sparked a claim staking rush in the area.”

A look at current DNR records shows that many of these claims staked around the Pebble deposit have since been abandoned, as shown here in red.

![Source: DNR Mine Claims Mapper 2019](image)

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As of 2019, there are approximately 3,500 abandoned state mining claims surrounding the Pebble deposit. These claims, once staked but now abandoned, are available under the state’s mining laws for re-staking by mining companies in the future. In addition, those exploring and developing potential claims and mine sites surrounding PLP’s operation will undoubtedly seek to share infrastructure with PLP. As noted by NDM’s former Director of Corporate Affairs Bruce Jenkins stated publicly in 2004: “We welcome all the new neighbors and we’re sure we could share some infrastructure. We don’t view it as competition. There’s plenty for everyone.”

It is reasonably foreseeable that if PLP obtains federal approvals to mine the Pebble deposit, the rush to re-stake these mining claims and explore the region for minerals will begin anew, resulting in vast cascading social and environmental consequences for the region related to increased outsider presence and pollution and contamination associated with exploration activities. Concerns regarding mineral exploration activities are well-documented and described in detail in EPA’s records and transcripts of EPA’s public hearings throughout the region. These concerns include impacts to fish, wildlife, waters, wetlands, and vegetation from drill rigs, sumps, toxic drill fluids, acid mine drainage; oil spills on soil, in water, and tundra; water withdrawals by the millions of gallons to run drill operations; increased outside presence; visual impacts; noise impacts; ATV and snow machine travel impediments; failures to fully reclaim drill sites; impacts to subsistence activities; and abandoned facilities, drill rigs, and pipe. Over the years, Alaska Department of Environmental Conservation (DEC) documented 27 separate fuel spills from PLP’s exploration activities while DNR noted more than 50 instances of drill fluids overflowing onto tundra, failures to properly reclaim vegetation, problems with artesian flow at abandoned drill sites, and murky and orange water discharges from sumps and old drill sites.

Indeed, as noted by the Department of Interior (DOI), “development of the Pebble Deposit and associated infrastructure may facilitate development of additional regional deposits, which in turn, could further negatively impact the ecological function of this ecosystem. Several of these additional claims and potential mines are in the headwaters of the Chulitna River … [and] remains an area of concern for DOI, given its proximity to NPS-managed lands.” The Draft EIS also admits this, but then fails to analyze it, stating that “most of the large operating mines in Alaska have been successful in finding additional reserves adjacent to their mine, extending their operating life….” The EIS should analyze and disclose…

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122 For EPA’s public hearing transcripts from 2012, 2014, and 2017 see attached Appx. F.
123 See BBNC et al petition to DNR for Detailed Inspection and Reporting of Impacts Associated with PLP’s Multi-Year Hardrock Exploration and Remediation (Nov. 3, 2015), at pages 8-13 and Exhibits D and E. See attached Appx. F.
124 Attached Appx. F. Letter from Pamela Bergmann, Regional Environmental Officer – Alaska, to U.U. Env’t Protection Agency (Sept 12, 2014), at page 4.
125 Draft EIS at page 3.3-2.
potential impacts under reasonably foreseeable development scenarios from increased mineral exploration activities on claims surrounding the PLP/NDM claim block and the cascading, cumulative impacts these activities bring, as well as the potential for the approval of the Pebble Mine Project to increase the likelihood of future development of additional deposits through shared infrastructure.

3. PLP’s 404 Application and Project Revisions

Despite PLP’s past plans and permit applications to develop a mine of at least 2.0 billion tons and its current statements touting a 11.0 billion metric ton opportunity, PLP submitted a Clean Water Act Section 404 permit application to the Corps for a project with a mine life of approximately 20 years and 1.2 billion tons.\(^{126}\) Since its original 404 permit application to mine 1.2 billion tons in December 2017, PLP revised its project upwards to 1.5 billion tons in May 2018, and then revised it again in October 2018 to 1.44 billion tons currently assessed in the Draft EIS. The Mine Site of approximately 8,086 acres would include an open pit, a tailings storage facility, a low grade ore stockpile, overburden stockpiles, material sites, water management ponds, milling and processing facilities, and supporting infrastructure such as the power plant, water treatment plants, camp facilities, and storage facilities.

In addition to the Mine Site, the project as described in the application would have three other major components: a transportation corridor, a port, and a natural gas pipeline.\(^{127}\) The transportation corridor would consist of: (1) a private, double-lane road extending 30 miles south from the Mine Site to a ferry terminal on the north shore of Iliamna Lake; (2) an ice-breaking ferry to transport materials, equipment, and concentrate 18 miles across Iliamna Lake to a ferry terminal on the south shore near the village of Kokhanok; (3) a private, double-lane road extending 35 miles southeast from the South Ferry Terminal to the proposed Amakdedori Port on Cook Inlet; and (4) separate roads that would connect the Transportation Corridor to the villages of Iliamna, Newhalen, and Kokhanok.\(^{128}\) Natural gas from Cook Inlet would be the primary energy source for the Pebble Project, connected via a proposed 188-mile long pipeline.\(^{129}\)

PLP’s permit application lacks much of the necessary baseline data the Corps needs to develop the EIS. More than 18 months since it was submitted, PLP’s permit application is still missing the following information essential to the development of an EIS and analysis under the CWA, for example:

- A detailed water management plan
- A compensatory mitigation plan
- A wetlands and streams functional assessment

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\(^{127}\) [https://pebbleprojecteis.com/overview/projectoverview](https://pebbleprojecteis.com/overview/projectoverview)

\(^{128}\) [https://pebbleprojecteis.com/overview/transportationcorridor](https://pebbleprojecteis.com/overview/transportationcorridor)

\(^{129}\) [https://pebbleprojecteis.com/overview/projectoverview](https://pebbleprojecteis.com/overview/projectoverview)
- Wetlands delineation across the entire project area
- An economic feasibility study
- Adequate geotechnical data about dredge and fill materials
- And baseline data on many other project components and affected resources

Furthermore, PLP currently has numerous pending and approved permit applications for field work over the next five years to help inform its project design and gather the baseline data necessary for the Corps to conduct a proper NEPA analysis. These pending and approved applications include but are not limited to:

1. Authorization from Alaska Department of Natural Resources (DNR) in Miscellaneous Land Use Permit A20196118 for exploratory activities, including drilling 121 geotechnical and shallow boreholes from 2019 to 2023 to “advance understanding regarding the regolith for future development planning and for ongoing resource evaluation”.

2. Authorization from DNR “to conduct a geotechnical survey of the proposed Amakdedo port site with a helicopter portable sonic type drill rig. The survey will include drilling up to 12 boreholes in sizes ranging from 2" to 8" in diameter and to an estimated depth of 100' to 200’.”

3. Five-year authorization (2018-2023) from NOAA/NMFS for field surveys related to marine mammals in Cook Inlet waters;

4. Temporary Water Use Authorizations from DNR for the summer 2019 to support geotechnical drilling work;

5. Title 16 fish habitat permits from Alaska Department of Fish & Game (ADF&G) for water withdrawals in the North Fork Koktuli, South Fork Koktuli, and Upper Talarik Creek related to summer 2018 and 2019 geotechnical drilling;

6. Two-year authorization from DNR (November 2017 to November 2019) for an acoustic doppler current profiler, seasonal tide gauges, and monitoring device in Amakdedori Bay to measure currents, tides, waves, and ice.

These permit applications and authorizations, focused on collecting baseline data over the course of the next one to five years, represent a stark admission by PLP of the significant data gaps in its permit application and supporting baseline information.

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134 FH18-II-0127 (NFK 871); FH18-II-0128 (NFK 841); FH18-II-0135 (SFK 841); FH18-II-0133 (UTC- S8); and FH18-II-0134 (SFK - S16).
As an example for how a lack of sufficient data and detailed plans can thwart the public’s involvement in the permitting process, in May 2018, squarely in the middle of the NEPA scoping process and after the close of public hearings, PLP submitted to the Corps a five page document it called “Technical Note on Updates.” The substantive project changes described in brief in this document by PLP include the following:

- Total mined material increases from 1.2 billion tons to 1.5 billion tons (an increase of 25%);
- Tailings tonnages increase. For the pyritic tailings storage cell, the increase is from 135 million tons to 150 million tons. For the bulk tailings storage cell, the increase is from 950 million tons to 1,150 million tons;
- Pit dimensions increase and the pit outline changes in an unspecified manner;
- The location of the open pit water management pond moves to the south;
- The location of the lined pyritic TSF moves from the North Fork Koktuli West site to an unspecified North Fork Koktuli East site location;
- The powerplant capacity increases from 230MW to 270MW;
- Annual concentrate production increases cause a ~10% increase in road and marine traffic; and
- LNG pipeline size increases from 10-inch diameter to 12-inch diameter.

It is obvious from this list that PLP has now substantially revised the Pebble project design, including presenting significant operational modifications and a 25% increase in the quantity of material to be mined. These changes—five months after PLP’s submission of its initial permit application—underscore the substantial amount of pertinent information that was missing in the permit application, and that remain missing now, including essential details, baseline studies, and economic feasibility studies. And the project was once again amended in January 2019, when PLP submitted an updated 404 Permit Application based on a 1.44 billion ton mine plan.

PLP has not yet sought required State of Alaska permits related to mine development. PLP should have submitted such permit applications prior to the development of a Draft EIS so that the detailed information contained in these applications may be used to inform the NEPA analysis. Without applications for these permits, or otherwise providing the relevant data, many aspects of the project remain unknown. It is for this very reason of efficiency in permitting that the State of Alaska encourages applicants to utilize the Large Mine Permitting Team. Doing so synchronizes and coordinates federal and state permit applications “to provide relevant information to the public in a transparent, understandable way and offer productive means for citizens to provide their input.”

Pebble will be required to obtain a number of state permits, all of which require extensive baseline data and detailed project designs that will inform the NEPA analysis, including, among other permits:

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136 See https://pebbleprojecteis.com/ (“Monday, May 21, 2018 – Updates to Project Information Available”).
137 Id.
• Alaska Solid Waste Program Integrated Waste Management Permit (ADEC)
• Alaska Solid Waste Program Solid Waste Disposal Permit (ADEC)
• Clean Air Act permits (ADEC)
• Clean Water Act Section 402 APDES Water Discharge and Stormwater Permits (ADEC)
• Oil Discharge Prevention and Contingency Plan (ADEC)
• Fish Habitat Permit (ADF&G)
• State lands leases – Tidelands Leases, Upland Mining Lease (ADNR)
• Water Rights Authorizations (ADNR)
• Alaska Dam Safety Program Certificates (ADNR)
• Plan of Operations Approval (ADNR)
• Reclamation Plan Approval (ADNR)
• Bonding Approval (ADNR)\(^{138}\)

Whether PLP provides the supporting information, detailed engineering, and project plans independent of or as part of these permit applications, the public needs that information to participate in a meaningful manner, and its absence precludes the Corps from making informed decisions on the process and the project. This information is critical to understanding the full extent of impacts, and is critical to determining the appropriate scope of review for this project. The Corps must have the details and supporting information and data in hand and analyzed prior to issuing a Draft EIS.

Our concerns regarding the lack of adequate information in the 404 permit application—expressed to the Corps prior to the start of scoping—have proven accurate. By the close of the NEPA scoping comment period, it was clear to Bristol Bay leaders and the sitting Governor of Alaska that the information PLP submitted to the Corps was inadequate for proper analysis under NEPA and the CWA. Bristol Bay leaders and the Governor wrote to the Corps requesting a suspension of the process until such time that PLP could fulfill missing information and submit the necessary state permit applications and supporting information and advanced and detailed engineering and project plans.\(^{139}\) Our concerns are unabated as the Corps moves the process along despite ongoing and future planned field studies to collect baseline data and PLP’s failure to submit detailed project plans to state agencies with permitting authority.

Underscoring this lack of information, the Corps has sent PLP more than 180 Requests for Information (RFIs) to fill missing gaps, to which PLP, to date, has not fully responded.\(^{140}\)


\(^{139}\) See attached Appx. F.

\(^{140}\) See, https://pebbleprojecteis.com/documents/library. For many of the responses, PLP notes that a complete response is months away, pending future field and geotechnical studies. “The applicant will be given a reasonable time, not to exceed 30 days, to respond to requests of the district engineer.” 33 C.F.R. § 325.2(d)(5).
Topics of the Corps RFIs include broad topics such as surface water hydrology, tailings facilities geotechnical data, water treatment, water withdrawals, pit wall stability, land ownership, socioeconomics, icebreaking ferry design, oceanographic data, horizontal directional drilling, project design options, port dredging options, air quality, fish aquatic habitat, marine mammals, soils, spills, subsistence, vegetation, wildlife, cultural resources, and wetlands.\textsuperscript{141} PLP has not responded to many of these requests, as the company lacks this basic data. And, as shown in Appendix D attached to this letter, the Draft EIS admits this data is lacking, but necessary, for proper NEPA review. For example, on the topics of cultural resources and wetlands and vegetation field data, PLP and the Corps have noted additional in-field surveys must be undertaken and will be completed by fall 2019 at the earliest.\textsuperscript{142} In the prior year, during scoping, PLP and the Corps admitted to these same data gaps,\textsuperscript{143} and yet these gaps remain. As BBNC said to the Corps in scoping comments, “All surveys should be completed before the Draft EIS so that the agency can fully analyze the transportation corridor’s direct and indirect impacts to cultural resources and so the agency can appropriately assess transportation and alignment alternatives.”\textsuperscript{144} This has not happened, and now the Draft EIS fails to disclose important impacts and is woefully inadequate for the public to review the impacts of the proposed project on important resources and to make an informed and reasoned choice among alternatives.

By way of another example, on the topic of mine site geotechnical data and tailings storage facility impoundment composition, during scoping PLP said that “preliminary” results are expected in September 2018,\textsuperscript{145} but such data was never provided and the Draft EIS was released without such data.\textsuperscript{146} Now, after release of the Draft EIS, PLP has told the Corps it will not be fulfilling this request before the Final EIS.\textsuperscript{147} These responses further underscore the insufficiency of PLP’s permit application and reaffirm that this is not a project ready for a NEPA analysis and review. NDM and PLP financial issues also call into serious question its ability to provide adequate information, including but not limited to, complete RFI responses. To continue in this situation is to put the burden on the public to speculate at PLP’s plans, and then respond to its own guesswork. This is not the intent of NEPA.

\textsuperscript{141} See, e.g., https://pebbleprojecteis.com/documents/library

\textsuperscript{142} See attached Appendix D. See also, Memo from AECOM to the Corps (March 1, 2019) and discussion infra at section V(F)(3).

\textsuperscript{143} See, e.g., PLP response to RFI 025 (dated May 10, 2018) where PLP notes that for the 2018 season, they planned to conduct a “desktop investigation” for impacts to cultural resources along the transportation corridor, putting off any in-the-ground surveys until an unknown date “prior to construction.”

\textsuperscript{144} See attached Appx. F, BBNC Scoping Letter, App. B.


\textsuperscript{146} See Draft EIS pages 3.1-8 to 3.1-14. See also Memo from AECOM to the Corps (March 1, 2019), and PLP response to RFI 0014a, Geotechnical Boring Program Report (sent to PLP on March 1, 2019, response requested by March 15, 2019) (“The report, along with the data, would help inform the impact analysis for the Preliminary Final EIS”).

\textsuperscript{147} PLP response to RFI 0014a, Geotechnical Boring Program Report (sent to PLP on March 1, 2019, response requested by March 15, 2019) (“PLP is not proposing to complete the final field report for the geotechnical boring program this year. The report will be updated following collection of additional data from the instrumentation installed in the borings and is not anticipated to be available prior to completion of the FEIS.”).
These information gaps are numerous and serious and as described in Section V below, have resulted in a woefully inadequate NEPA document, especially given the massive nature of this proposed project and its location in the pristine Bristol Bay ecosystem. However, even with these information gaps there is enough information contained in PLP’s proposal to know that the project would permanently and directly destroy at least 3,560 acres of wetlands and 81.1 miles of streams, including 8.87 linear miles of designated salmon streams and that these impacts would cause and contribute to significant degradation to Bristol Bay waters and the world-class salmon fishery.

IV. COMMENTS ON CLEAN WATER ACT SECTION 404 PERMIT

PLP submitted its Clean Water Act Section 404 permit application on December 22, 2017 and later amended its permit application to account for a revised and larger proposed project on January 24, 2019. Following this amended permit application and simultaneously with the release of the Draft EIS, the Army Corps issued a Public Notice calling for public comments on PLP’s 404 permit application. Section IV of this comment letter is responsive specifically to this 404 Public Notice. Information contained in this section is also relevant to the Corps’ duties to analyze the proposed project and its impacts under NEPA.

Although, as described in Section V below, the Draft EIS fails to disclose a myriad of direct, indirect, and cumulative impacts of the proposed Pebble Mine Project on the human environment, and while PLP’s permit application is missing essential information for the Army Corps to review, enough is known about the proposal’s impacts to waters, aquatic resources, and fishery areas—based on PLP’s 404 permit application and supporting materials and EPA’s lengthy 404(c) administrative record—to warrant denial of the 404 permit application. First, the project as proposed cannot comply with the CWA and the 404(b)(1) guidelines because its adverse effects to waters and wetlands would cause significant degradation to the Bristol Bay watershed and fishery; indeed they are unprecedented. Second, the cumulative effects of the proposed project will cause or contribute to significant degradation of the aquatic ecosystem and Bristol Bay fishery and thus cannot comply with the 404(b)(1) guidelines. Third, the Corps cannot rely on threshold percentages of habitat impacted to comply with the CWA 404(b)(1) guidelines, as this method is not based on acceptable scientific principles and is contrary to EPA’s interpretation of the CWA requirements. Fourth, EPA has already made findings that a mine at the Pebble deposit smaller than the one proposed in this 404 permit application could cause or contribute to significant degradation and could have unacceptable adverse impacts to fishery areas. Nothing in PLP’s current 404 permit application and supporting materials changes these well-founded conclusions and the Corps use of the threshold approach to analyzing impacts is inappropriate. Fifth, PLP’s proposal is not in the public interest and this is an independent reason for the Corps to deny the 404 permit. Finally, the Corps should also deny PLP’s 404 permit application as incomplete because it fails to include information that is essential for the project proposal to comply with the CWA.
A. LEGAL BACKGROUND: THE CLEAN WATER ACT SECTION 404, THE 404(b)(1) GUIDELINES, AND PUBLIC INTEREST REVIEW

Congress enacted the Clean Water Act (CWA) in 1972 to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” The CWA sets several goals, including attainment and preservation of “water quality which provides for the protection and propagation of fish, shellfish, and wildlife . . . .” To further its goals, the CWA prohibits “discharge of any pollutant” into navigable waters except in accordance with the Act’s terms. Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for infrastructure development (such as roads and ports) and mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States. The basic premise of the program is that no discharge of dredged or fill material may be permitted if: (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation’s waters would be significantly degraded.

The EIS for the proposed Pebble Mine Project must assess the environmental issues relevant to determining whether the proposal qualifies for a permit under section 404 of the Clean Water Act. In general terms, this requires addressing environmental issues relevant to a determination as to whether issuing a section 404 permit is consistent with the public interest, and the 404(b)(1) Guidelines, including the joint Corps of Engineers/EPA compensatory mitigation regulations. Specifically, with regard to compliance with section 404 permitting requirements, the EIS must assess in detail the following issues (among others):

- Impacts to wetlands;
- Impacts to fish and wildlife;
- Impacts to cultural and recreational values;
- Impacts to water quality;
- Onsite and offsite alternatives to the proposed project;
- The possibility of minimizing impacts to the above resource values through modifications of the proposed project;
- The potential for the project to cause or contribute to significant degradation of the waters of the United States;
- The availability of compensatory mitigation to address unavoidable impacts of the proposed project;

152 33 CFR § 320.4.
• The economic viability of the project as proposed in light of the environmental risks associated with failure of the proposed project.

The Corps has a duty to restore and protect the integrity of waters of the United States, including wetlands.\textsuperscript{155} The Corps carries out this duty by issuing permits for the discharge of dredged or fill material into the navigable waters.\textsuperscript{156} Through regulations and guidance, the Corps has established a process, standards, and requirements for the issuance of such permits.\textsuperscript{157} Most importantly, these permits must be issued in strict compliance with the guidelines established by the EPA and the Corps under Section 404(b)(1) of the CWA (Guidelines).\textsuperscript{158} The Guidelines require that “dredged and fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.”\textsuperscript{159} Additionally, the degradation and destruction of wetlands and other special aquatic sites are considered “among the most severe environmental impacts.”\textsuperscript{160} Corps regulations specifically identify wetlands as “special aquatic site[s],” and detail their outstanding value and particular sensitivity to disturbances.\textsuperscript{161} No discharge shall be permitted if there is a practicable alternative which would have less adverse impacts on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.\textsuperscript{162}

**B. ADVERSE IMPACTS OF THE PROPOSED PEBBLE MINE PROJECT TO WETLANDS, WATERS, AND AQUATIC ECOSYSTEM—UNPRECEDENTED IMPACTS IN THE HISTORY OF THE CLEAN WATER ACT 404 PROGRAM IN ALASKA**

The proposed Pebble Mine Project will have a variety of impacts to the aquatic environment including direct fill of and unprecedented amount of essential fish habitat and connected wetlands, secondary impacts resulting in functional waters and wetlands degradation, and large-scale pristine habitat conversion over a large geographic area. Pebble’s size and impacts are immense for the untouched pristine Bristol Bay ecosystem. The mine footprint alone would be approximately 9,000 acres and the project will result in the direct and permanent loss of 3,560 acres of wetlands, ponds, and marine waters and 81.1 miles of streams, including 8.87 miles of salmon streams. Pebble’s proposed transportation corridor alternative would carve up the Bristol Bay ecosystem with 77 miles of roads requiring 86

\textsuperscript{155} 33 U.S.C. § 1251(a).
\textsuperscript{156} 33 U.S.C. § 1344.
\textsuperscript{157} 33 C.F.R. § 320.4; 40 C.F.R. § 230.1-98.
\textsuperscript{158} 33 U.S.C. § 1344(b)(1); 40 C.F.R. § 230.1.
\textsuperscript{159} 40 C.F.R. § 230.1(c).
\textsuperscript{160} 40 C.F.R. § 230.1(d).
\textsuperscript{161} 40 C.F.R. § 230.10.
\textsuperscript{162} 40 C.F.R. § 230.10(a).
culverts and 9 bridges carrying 39 truckloads per day. These impacts far exceed the impacts from any hardrock mine or oil and gas project in Alaska and would vastly alter the fabric of life in Bristol Bay.

The Corps must also describe, analyze, and take a hard look at the unavoidable adverse effects (e.g., the direct and indirect effects as described above that cannot be avoided or mitigated away through permitting stipulations and requirements) pertaining to impacts to waters of the United States, e.g., to the topics described below. If the Corps cannot determine whether appropriate and practicable mitigation measures will be implemented to offset unavoidable project impacts, it may be compelled to deny the permit application for causing or contributing to significant degradation of the aquatic ecosystem.

1. Adverse Impacts—Direct, Indirect (Secondary), and Cumulative Impacts of the 20-year Mine Plan

The Bristol Bay region is vast, containing approximately 40 million acres of land and water. It contains myriad mountains, rivers, lakes, wetlands, and marine waters. Much of the region lies within the Bristol Bay watershed—a unique sprawling, permeable, and porous network of creeks and streams that produce large numbers of salmon. The waters of Bristol Bay contain locally-adapted and genetically distinct populations of salmon that help ensure the long-term health and stability of salmon stocks across the watershed. For generations upon generations, tens of millions of salmon reliably return to Bristol Bay.

As noted in EPA’s BBWA, the proposed Pebble Mine Project will have an array of direct, indirect, and cumulative impacts on the waters, wetlands, and fishery. Nothing in PLP’s recent permit application lessens these impacts, indeed, its proposal is nearly five times larger than the smallest mining scenario considered by EPA. Recent reviews of PLP’s permit application by experts and former EPA employees have, attached to this comment letter in Appendix E on pages 6 to 1,047, confirms EPA’s BBWA findings.

162 See 33 C.F.R. pts. 325 and 332; 33 C.F.R. § 332.3(a)(1); 40 C.F.R. § 230.10(c).
163 40 C.F.R. § 230.10(c).
165 See id.
166 See Pebble Science, Moran R., Water-Related Impacts at the Pebble mine (2007), available at http://www.pebblescience.org/Pebble-Mine/water-impact.html (“The extensive glacial gravel deposits are highly permeable; a characteristic that contributes to salmon productivity but also provides pathways for water and potentially for mine wastes to move between surface and groundwater and between river basins.”).
167 See id.
169 See id.
2. **Adverse Impacts—Direct, Indirect (Secondary), and Cumulative Impacts of the 78-year Mine Plan**

Under the 78-year mine, wetland losses would increase from 4,976 acres to in excess of 17,400 acres. An expansion of this nature would cause a concomitant or greater increase in the adverse impacts described above. Such colossal adverse impacts to wetlands and other waters would be catastrophic for this mostly roadless, undisturbed, and nearly pristine area of the Bristol Bay watershed.

3. **Unprecedented Impacts in the History of the CWA 404 Program in Alaska**

The Draft EIS attempts to prove that the proposed Pebble Mine Project would not result in adverse impacts to wetlands, waters, and aquatic resources by relying on inappropriate examples of other resource development projects in Alaska that are nowhere comparable to the size, type, and location of the Pebble deposit and the proposed project’s direct and irreversible impacts. For example, the Draft EIS uses the example of the historic, non-operational Kennecott Copper Mine to argue that “[o]ther salmon fisheries in Alaska exist in conjunction with non-renewable resources.” This comparison is not based in fact or science. As pointed out by Alaska Department of Fish and Game to the Corps, “The comparison with the Kennecott Copper Mine is questionable, as it was a much different type of mine than the proposed Pebble mine. For example, it was an underground mine as opposed to an open pit, the Kennecott mine produced ~ 1 billion tons of waste rock whereas the Pebble mine at the 78+ year stage would produce > 15 billion tons. The Draft EIS should look for more similar projects for comparison purposes and if none exist clearly state the limitations of the comparison.”

The Corps fails to conduct the comparison requested by Alaska Department of Fish and Game in the Draft EIS. However, without question, the proposed Pebble Mine Project at the current proposed size of 1.44 billion tons mined will be the largest and most damaging hardrock mine project in the history of Alaska. The current proposed Pebble Mine Project is also more damaging to anadromous waters and aquatic habitat than any other project we could find on record in Alaska.

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170 See attached Appx. E at page 32, Schweisberg, Matthew, Pebble Mine: Anticipated Adverse Impacts to Wetlands (May 12, 2019)

171 Id.

172 Draft EIS, at page 4.6-6

173 Pebble Project Comment Response Matrix, State of Alaska Comments on the Preliminary Draft EIS, Section 4.6, comment number 14.
### Direct & Permanent Losses under Army Corps Clean Water Act Section 404 Permits

<table>
<thead>
<tr>
<th>Location</th>
<th>Direct &amp; Permanent Loss of Salmon Streams</th>
<th>Direct &amp; Permanent Loss of all Streams</th>
<th>Direct &amp; Permanent Loss of Wetlands, Lakes, Ponds, &amp; Marine Waters</th>
</tr>
</thead>
</table>
| **Pebble Mine**           | 8.87 linear miles$^{174}$                | 81.1 linear miles$^{175}$             | – 3,560 acres (phase 1 mine, 1.5 billion tons, or 13.6% of known deposit)$^{176}$  
|                           |                                          |                                       | – 12,445 additional acres (phase 2 mine, 5.2 billion tons, or 47.3% of known deposit)$^{177}$ |
| **Greens Creek Mine**     | 0 linear miles$^{178}$                   | Not quantified.                       | – Impacts through 2003 not quantified.$^{179}$                    
|                           |                                          |                                       | – 10.2 additional acres (2003 tailings)$^{180}$                    
|                           |                                          |                                       | – 14.5 additional acres (2013 expansion)$^{181}$                    |
| **Fort Knox Mine**        | 0 linear miles. Burbot and grayling habitat only.$^{182}$ No ADF&G anadromous waters catalog designations in or around mine site area.$^{183}$ | Not quantified.                       | – 480 acres (1995 tailings construction)$^{184}$                    
|                           |                                          |                                       | – 57.6 additional acres (2007 heap leach facility)$^{185}$         
|                           |                                          |                                       | – 15.64 additional acres (2011 TSF dam raise);$^{186}$ 2 additional acres (2015 waste rock dump expansion);$^{187}$ 0.97 additional acres (2018 phase 10 pit expansion)$^{188}$ |
| **Kensington Mine**       | No permanent loss and Slate Creek dam not located in | Not quantified.                       | – 83.4 acres permitted$^{190}$                                    |

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$^{174}$ Pebble Draft EIS, Appendix I (Essential Fish Habitat Assessment), p. 68, Table 5-1 (46,836 linear feet, or 8.87 linear miles, Essential Fish Habitat permanent destroyed), available at https://pebbleprojecteis.com/files/9a368031-5263-4f87-bf2d-f7da31c806a8

$^{175}$ Pebble Draft EIS, Executive Summary, pp. 60-61, Table ES-2.

$^{176}$ Pebble Draft EIS, Executive Summary, pp. 60-61, Table ES-2.

$^{177}$ Pebble Draft EIS, Executive Summary, p. 65; Draft EIS p. 4.22-40.


designated anadromous waters.\textsuperscript{189}

<table>
<thead>
<tr>
<th>Mine/Project</th>
<th>Linear Miles</th>
<th>Types</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pogo Mine</td>
<td>0</td>
<td>Not quantified.</td>
<td>306</td>
</tr>
<tr>
<td>Red Dog Mine</td>
<td>Not quantified.</td>
<td>Not quantified.</td>
<td>$-1,402.6$ (observed 1984-2009)\textsuperscript{192} $-119$ additional acres (2009 Aqqaluk expansion)\textsuperscript{193}</td>
</tr>
</tbody>
</table>

### Oil & Gas Projects in Alaska

<table>
<thead>
<tr>
<th>Project</th>
<th>Linear Miles</th>
<th>Types</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nanushuk</td>
<td>0</td>
<td>0 linear miles</td>
<td>288</td>
</tr>
<tr>
<td>Point Thompson Development Project</td>
<td>0 linear miles salmon streams.\textsuperscript{195} Not quantified, but ROD discusses avoidance of work in anadromous fish habitat\textsuperscript{196}</td>
<td>Not quantified in ROD, impacts not clear</td>
<td>267.1</td>
</tr>
<tr>
<td>Northstar Project</td>
<td>0</td>
<td>0 linear miles</td>
<td>23.3 acres for Seal Island construction\textsuperscript{198}</td>
</tr>
<tr>
<td>Liberty (Hilcorp)</td>
<td>0</td>
<td>0 linear miles</td>
<td>88.1</td>
</tr>
<tr>
<td>ASRC Colville River Consolidated Gravel Material Site 1998-2018+</td>
<td>0 linear miles</td>
<td>0 linear miles</td>
<td>580 acres (cumulative, phases 1 through 3 from 1998-present and beyond)\textsuperscript{200}</td>
</tr>
</tbody>
</table>

As EPA concluded on the basis of a mine design at the Pebble deposit one-fifth the size of the current proposal and impacting the very same waters and wetlands, “based on EPA’s records, there do not appear to be any examples of past projects, in the Bristol Bay watershed or the rest of Alaska, where USACE authorized losses to documented anadromous waters of

\textsuperscript{194} http://www.nanushukeis.com/projectdescription.html
the nature and magnitude associated with the Pebble 0.25 stage mine.”\textsuperscript{201} Likewise, the Draft EIS admits that “no other wild salmon fishery in the world exists in conjunction with an active mine of this size.”\textsuperscript{202}

In its Draft EIS, the Corps also attempts to downplay the unprecedented loss of anadromous fish habitat, wetlands, and aquatic resources by relying on the inappropriate and non-scientific threshold percentages approach to impacts on the ecosystem as a whole, ignoring the function and importance of diverse and pristine habitat. As described further in section V(E) below, EPA has concluded that this approach is “technically flawed and not supported by the science, […] the implementation of such an approach is not suitable for evaluating significant degradation …[and] could lead to violations of 40 CFR 230.10(d).”\textsuperscript{203} By using this approach, the Corps makes erroneous, unscientific and unsupported conclusions such as “the extent of impacts to riverine wetlands from mine site activities would represent approximately 5 percent of all riverine wetlands in the watershed;”\textsuperscript{204} “impacts represent roughly 1 percent of all lakes and ponds, and 4 percent of all rivers and streams in the watershed;”\textsuperscript{205}

\section*{C. PLP’s Proposal and Section 404 Permit Application Fail to Comply with the CWA and 404(b)(1) Guidelines, Thus a 404 Permit Cannot Be Issued for the Proposed Pebble Mine Project}

The Clean Water Act and the implementing section 404(b)(1) Guidelines dictate the circumstances under which the Corps may permit discharges of dredged or fill material into wetlands or other waters.\textsuperscript{206} The Guidelines are binding regulations that impose substantive standards for evaluating permit applications.\textsuperscript{207} The Corps’ own regulations recognize that the Corps must deny a Section 404 permit if the discharge for which a permit is sought would violate the Guidelines.\textsuperscript{208}

The 404(b)(1) Guidelines prohibit issuance of a permit where: (i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences; or (ii) The proposed discharge will result in significant degradation of the aquatic ecosystem...; or (iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem; or (iv) There does not exist sufficient information to make a reasonable judgment as to whether the proposed

\textsuperscript{201} PD, at page 4-61.

\textsuperscript{202} Draft EIS, at page 4.6-6.

\textsuperscript{203} Cite to EPA whitepaper.

\textsuperscript{204} Draft EIS, at page 4.22-9.

\textsuperscript{205} Draft EIS, at page 4.22-9.


\textsuperscript{207} See 40 C.F.R. Part 230.

\textsuperscript{208} 33 C.F.R. §320.4(a)(1).
discharge will comply with these Guidelines. The Corps and EPA are jointly tasked with ensuring that 404 permits comply with the 404(b)(1) Guidelines.

1. **The Corps Has Failed to Show the Proposed Project is the Least Environmentally Damaging Practicable Alternative (40 C.F.R. 230.10(a))**

Under the Guidelines, the Corps must deny a Section 404 permit “if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.” An alternative is practicable “if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purpose.”

The Corps and EPA have explained in a regulatory guidance letter that “the proposed discharge...must represent the least environmentally damaging practicable alternative in order to comply with the alternatives analysis requirement of the Guidelines.” The purpose of this requirement “is to create an incentive for developers to avoid choosing wetlands when they could choose an alternative upland site.”

The burden is on the applicant, with independent verification by the Corps, to prove less environmentally damaging alternatives are impracticable. However, in several ways, the Corps and PLP have failed to examine whether other practicable alternatives exist that would be less environmentally damaging. The Corps has too narrowly defined the project purposes for proper analysis under the 404(b)(1) guidelines. As to the mine site itself, the Corps has failed to analyze a range of proposed projects that would meet the project purpose at the Pebble Mine deposit, improperly ignoring smaller and different mine designs and configurations that might meet the same project purpose. As to the transportation corridor, the Corps failed to include any practicable alternatives other than the single alternative proposed by the applicant. These issues are all noted in Section V.E below, noting the range

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209 40 C.F.R. § 230.10(a).
210 40 C.F.R. § 230.10(a)(2).
211 RGL 92-2, Water Dependency and Cranberry Production, June 26, 1992 (emphasis added).
213 See Utahns v. Dep’t of Transp., 305 F.3d 1152, 1186-87 (10th Cir. 2002) (“The test is whether the alternative with less wetlands impact is ‘impracticable,’ and the burden is on the Applicant, with independent verification by the [Corps], to provide detailed, clear and convincing information proving impracticability.”); cf. Sierra Club v. Van Antwerp, 709 F. Supp. 2d 1254, 1268 (S.D. Fla. 2009), aff’d, 362 F. App’x 100 (11th Cir. 2010) (holding that “the Corps’ decision to summarily reject all alternative locations for this [project] was based on the Corps’ uncritical acceptance of a single report from the permit applicants, as to which credible objections had been raised”).
of alternatives that the Corps improperly dismissed despite the potential to reduce impacts to wetlands and waters.\textsuperscript{214}

Indeed, as EPA noted prior to the release of the Draft EIS, the alternatives presented in the Draft EIS are inadequate for purposes of defining the LEDPA:

We recommend providing additional explanation regarding the process for evaluating alternatives to comply with the CWA Section 404(b)(1) guidelines. We note that the current alternatives evaluation does not enable comparison of the alternatives for the purpose of compliance with the 404(b)(1) guidelines and to identify the potential least environmentally damaging practicable alternative (LEDPA) for 404 permitting purposes because, for example, there is insufficient information about how all practicable steps have been taken to avoid and minimize aquatic impacts. We understand that the 404(b)(1) guidelines analysis will be included in an appendix, and we request an opportunity to review and provide comments on that appendix prior to release of the Draft EIS.”\textsuperscript{215}

The preferred alternative must be either the LEDPA or the no action alternative. It is PLP’s responsibility to clearly demonstrate that its proposed project is the LEDPA and otherwise complies with Corps permitting requirements. Given the lack of sufficient information in the permit application to analyze alternatives associated with all of the project components discussed above, the Corps should suspend its EIS preparation and require PLP to resubmit its permit application with PLP’s best effort to identify the impacts it believes are unavoidable under the regulations: \textit{i.e.}, the least environmentally damaging practicable alternative. Otherwise, based on the peer-reviewed findings of the Bristol Bay Watershed Assessment and EPA’s Proposed Determination, the Corps should identify the no action alternative as the preferred alternative unless it can determine, at the Draft EIS stage, that one of the action alternatives meets the 404(b)(1) guidelines.\textsuperscript{216}

Practicable alternatives include activities and discharges which do not involve discharge of dredged/fill material into waters of the U.S.\textsuperscript{217} An alternative is practicable if it is capable of

\begin{footnotesize}
\textsuperscript{214} 40 C.F.R. § 230.10(a)(4) (“For actions subject to NEPA, where the Corps of Engineers is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental Corps NEPA documents, will in most cases provide the information for the evaluation of alternatives under these Guidelines. On occasion, these NEPA documents may address a broader range of alternatives than required to be considered under this paragraph or may not have considered the alternatives in sufficient detail to respond to the requirements of these Guidelines. In the latter case, it may be necessary to supplement these NEPA documents with this additional information.”).

\textsuperscript{215} EPA Comments on Pebble EIS Preliminary Draft Chapter 1 and 2 (Nov. 21, 2018).

\textsuperscript{216} Cite to Yocom. \textit{See generally}, attached Appendix E (Recommendations on the scope of analysis pursuant to the National Environmental Policy Act and Section 404 of the Clean Water Act, Prepared for the Bristol Bay Native Corporation by Thomas G. Yocom, Wetlands Regulatory Scientist, Huffman-Broadway Group, Inc.).

\textsuperscript{217} 40 C.F.R. § 230.10(a)(1).
\end{footnotesize}
being done after taking into consideration costs (not economics), existing technology, and logistics in light of the overall project purpose.\textsuperscript{218} For purposes of evaluating alternatives under the CWA to determine the least environmentally damaging practicable alternative (LEDPA), the Corps should require that PLP demonstrate that no other ore deposits have been available to the company and that there are no deposits that could be developed which would pose less environmental damage to aquatic environments.\textsuperscript{219} The LEDPA analysis must consider not only alternatives within the project area, but also alternative mining of other ore deposits that have been or could have been acquired by PLP and its parent company Hunter Dickinson.

Because PLP’s application is not complete, because PLP has failed to provide a pre-feasibility or feasibility assessment of its project design, and because its project design keeps changing mid-permitting, it is impossible at this point to know what is within the realm of consideration as a practicable alternative. It is PLP’s responsibility to clearly demonstrate that its proposed project is the LEDPA and otherwise complies with Corps permitting requirements. It is not the job of the United States agencies (or the public, for that matter) to design projects for applicants or to tell an applicant the acceptable parameters of its project so that the applicant can make an after-the-fact determination of economic feasibility.\textsuperscript{220} The Corps should suspend its EIS preparation and require PLP to resubmit its permit application with PLP’s best effort to identify the impacts it believes are unavoidable under the regulations: \textit{i.e.}, the least environmentally damaging practicable alternative.

2. **The Proposed Pebble Mine Project Does Not Comply with Other Environmental Standards (40 C.F.R. 230.10(b))**

The Corps cannot issue a 404 permit to PLP if the discharge “[c]auses or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard.”\textsuperscript{221} As noted in Section IV.G.4. below, potential effluent exceeding water quality standards includes “elevated levels of aluminum, arsenic, beryllium, cadmium, copper, lead, manganese, mercury, molybdenum, nickel, selenium (a metalloid), silver, and zinc in exceedance of the most stringent WQC.”\textsuperscript{222} In addition as detailed below, there is nothing in the record to refute the EPA’s findings that the proposed project could exceed water quality standards, either as proposed or in the larger 78-year mine design.

\textsuperscript{218} \textit{Id.} at § 230.10(a)(2).

\textsuperscript{219} See, attached Appendix E, pages 61 to 72, Yocom, Thomas G., \textit{Determining the least damaging practicable alternative for the proposed Pebble Project: Potentially less damaging practicable alternatives are improperly dismissed in the DEIS} (June 6, 2019).

\textsuperscript{220} See, attached Appendix E, pages 7 to 429. \textit{See also}, supra section V.E.

\textsuperscript{221} 40 C.F.R. § 230.10(b).

\textsuperscript{222} Draft EIS, Executive Summary page 71.
3. **The Proposed Pebble Mine Project Could Cause or Contribute to Significant Degradation of Fishery Areas and Aquatic Resources (40 C.F.R. 230.10(c))**

The Corps cannot issue a permit to PLP if the proposal could cause or contribute to significant degradation, individually or collectively, including:

(1) Significantly adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites.

(2) Significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical processes;

(3) Significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability. Such effects may include, but are not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy; or

(4) Significantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.\(^{223}\)

EPA has already made a finding of significant degradation based on impacts to the same wetlands and streams impacted here, but for a lesser level of impacts.\(^ {224}\) EPA specifically concluded that: “impacts on streams, wetlands, and other aquatic resources from the discharge of dredged or fill material associated with the Pebble 0.25 stage mine could cause or contribute to significant degradation (40 CFR 230.10(c)) of fishery areas. EPA Region 10 recognizes that degradation of these aquatic resources could be even more pronounced when the extensive cumulative impacts on the aquatic ecosystem expected to occur with successive stages of mine expansion are considered (Section 4.3.1.2).”\(^ {225}\)

Indeed, the impacts of PLP’s current proposal, as well as the 78-year mine design, far exceed the Pebble 0.25 stage mine scenario developed by EPA and far exceed the 404(c) Proposed Determination restrictions.  

\(^{223}\) 40 C.F.R. § 230.10(c).

\(^{224}\) See PD, Chapter 4.

\(^{225}\) PD at 4-61.
<table>
<thead>
<tr>
<th></th>
<th>Draft EIS 20-year</th>
<th>Draft EIS 78-year</th>
<th>EPA Proposed Determination</th>
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<tr>
<td>Ore Mined (12.125 billion ton</td>
<td>1.44 billion tons</td>
<td>6.67 billion tons</td>
<td>n/a</td>
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<tr>
<td>deposit) 11.9% of delineated</td>
<td>(11.9% of</td>
<td>(55% of delineated</td>
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<tr>
<td>resource)</td>
<td>delineated resource)</td>
<td>resource)</td>
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<tr>
<td>Anadromous Streams Permanently</td>
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<tr>
<td>Lost</td>
<td></td>
<td></td>
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<tr>
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</tr>
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<td></td>
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<td>Wetlands, Lakes, Ponds Directly</td>
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<td>15,903 acres</td>
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<td>and Permanently Lost</td>
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<td>tributaries of anadromous</td>
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<tr>
<td>Total Mine Site Footprint</td>
<td>8,086 acres</td>
<td>29,632 acres</td>
<td>n/a</td>
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</table>

Nothing in USACE’s record, Pebble’s 404 permit application, or draft compensatory mitigation plan brings the project impacts below the level of significant degradation or refutes EPA’s findings; therefore, any determination by USACE that this 404 permit does not constitute significant degradation under the 404(b)(1) guidelines would be on its face arbitrary and capricious.\(^{226}\)

Moreover, the Corps is required to analyze secondary effects, defined by the Guidelines as “effects on the aquatic ecosystem that are associated with the discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material.”\(^{227}\) The consideration of secondary effects is necessary for the Guidelines analysis. In its scoping comments to the Corps, the EPA discussed the following examples of potential secondary effects of the proposed Pebble Mine Project on aquatic resources that the Corps must analyze in its 404(b)(1) guidelines analysis and EIS:

- Elimination of streams and wetlands due to drowning by the tailings impoundment and other mine components;
- Dewatering of streams and other aquatic resources due to pumping of groundwater during open pit mining and filling during closure;
- Fragmentation of aquatic resources due to the placement of the mine pit, ore storage

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\(^{227}\) 40 C.F.R. § 230.11(h).
sites, tailings storage facility, and other mine components;
- Degradation of downstream fish habitat due to streamflow alterations resulting from water capture, withdrawal, storage, treatment, or release at the mine site;
- Degradation of downstream fish habitat due to water quality impacts associated with mine construction and operation;
- Degradation of downstream fish habitat due to the loss of important inputs such as nutrients and groundwater from upstream sources;
- Degradation of aquatic resources due to dust deposition from mining and transportation activities.
- The evaluation of the proposed project's impacts and alternatives should fully consider the physical, chemical, and biological effects of each of the direct and secondary effects, and should consider incremental changes from these impacts along each stream segment downstream of the impact site.

According to expert reviews, included in Appendix E of these comments, an analysis of these factors based on PLP’s current proposal leads to the conclusion that the project could cause or contribute to significant degradation.228

4. The Proposed Pebble Mine Project Fails to Take Appropriate and Practicable Steps to Avoid, Minimize, and Compensate Potential Adverse Impacts (40 C.F.R. 230.10(d))

Pursuant to review under the 404(b)(1) Guidelines, “the district engineer may determine that a permit cannot be issued because of the lack of appropriate and practicable compensatory mitigation options.”229 The Corps has determined “that compensatory mitigation is appropriate and has asked [PLP] to evaluate a full suite of available and practicable mitigation options to comply with the provisions of the 2008 mitigation rule and 2018 MOA.”230 However, PLP’s draft Compensatory Mitigation Plan (CMP) is woefully inadequate to meet the requirements of the 2008 mitigation rule and provides little to no detail on the proposed compensatory mitigation measures required to offset nearly 4,000 acres of wetlands and 80 miles of stream permanently lost, and thus cannot comply with the 404(b)(1) Guidelines.

The 1990 Memorandum of Agreement (MOA) between EPA and the Corps, reaffirmed in a 2018 MOA between the EPA and the Corps,231 establishes a three-part process, known as the mitigation sequence, to help guide mitigation decisions and determine the type and level of mitigation required under Clean Water Act Section 404 regulations.

228 See, attached Appendix E, pages 22 to 39, Schweisberg, Matthew, Compliance with Section 230.10(c) of the 404(b)(1) Guidelines, Proposed Pebble Mine Project (June 11, 2019).
229 33 CFR 332.1(c)(3). Note that while the majority of the text of the Compensatory Mitigation Rule is set out at 33 CFR 332.3, this specific provision while adopted in that rulemaking proceeding but placed in 33 CFR 332.1. See also, 40 CFR 230.91(c)(3).
230 Draft EIS p. 5-23.
Step 1. Avoid - Adverse impacts to aquatic resources are to be avoided and no discharge shall be permitted if there is a practicable alternative with less adverse impact.

Step 2. Minimize - If impacts cannot be avoided, appropriate and practicable steps to minimize adverse impacts must be taken.

Step 3. Compensate - Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain. The amount and quality of compensatory mitigation may not substitute for avoiding and minimizing impacts.  

The purpose of the 2018 Alaska MOA is to “provide guidance regarding flexibilities that exist in the mitigation requirements for Clean Water Act Section 404 permits, and how those flexibilities can be applied in the state of Alaska given the abundance of wetlands and unique circumstances involved in Section 404 permitting in the state.” The MOA “clarifies how existing national policies regarding practicability determinations and regulatory flexibility can be implemented in Alaska while ensuring sound environmental stewardship of the State’s ecologically important wetland resources.  

The 2018 Alaska MOA recognizes guiding principles “specific to the state of Alaska” The guiding principles are:

a. Avoiding wetlands may not be practicable where there is a high proportion of land in a watershed or region which is jurisdictional wetlands;
b. Restoring, enhancing, or establishing wetlands for compensatory mitigation may not be practicable due to limited availability of sites and/or technical or logistical limitations;
c. Compensatory mitigation options over a larger watershed scale may be appropriate given that compensation options are frequently limited at a smaller watershed scale;
d. Where a large proportion of land is under public ownership, compensatory mitigation opportunities may be available on public land;
e. Out-of-kind compensatory mitigation may be appropriate when it better serves the aquatic resource needs of the watershed; and
f. Applying a less rigorous permit review for small projects with minor environmental impacts is consistent with the Section 404 program regulations.

The 2018 Alaska MOA then articulates the sequencing concept articulated in the 1990 MOA and established in regulation by the Compensatory Mitigation Rule. In discussing the compensatory mitigation element, it provides

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232 https://www.epa.gov/cwa-404/cwa-section-404-mitigation
233 2018 Alaska MOA at I.
235 2018 Alaska MOA at II.B.
Last, after all practicable steps have been taken to avoid and minimize potential adverse effects, compensation for remaining unavoidable impacts may be required through such measures as wetlands or other aquatic resource restoration, establishment, enhancement, or, in certain circumstances, preservation in order to replace lost aquatic functions and values. Compensatory mitigation is required only to the extent that it is appropriate and practicable.\textsuperscript{236}

According to EPA, the discharge and placement of dredge and fill material in anadromous waters at the vast amounts proposed by PLP “is unprecedented in the context of the CWA Section 404 regulatory program in Alaska.”\textsuperscript{237} Therefore, the Corps’ priority should be to require PLP to avoid and minimize impacts. Because of the location and type of the Pebble deposit and the aquatic resources that would be irreversibly destroyed with the development of the Pebble deposit, the Corps cannot forego mitigation on this project. Corps of Engineers regulations mandate evaluation of the appropriateness of compensatory mitigation for “significant resource losses which are specifically identifiable, reasonably likely to occur, and of importance to the human or aquatic environment.”\textsuperscript{238} These include impacts to wetlands, fish and wildlife resources, cultural and recreational values, and water quality. The Corps needs to take specific steps to further assess the magnitude of each of these categories of resource losses associated with the proposed project, and analyze which of these impacts can be practicably avoided and minimized. When mitigation is required to offset unavoidable impacts, “the amount of required mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions.”\textsuperscript{239}

**Avoidance.** Avoidance measures the Corps must consider include onsite and offsite alternatives to the proposed project that would meet the project’s purpose. The Corps must analyze and consider alternative project configurations that would best avoid impacts to aquatic resources. In addition to project site configurations, this includes analyzing orebody alternatives located elsewhere and owned by the applicant’s parent company, Hunter Dickinson, Inc., as well as mining elsewhere on PLP’s 266,000 acres of claims where impacts to aquatic resources might be lessened. The Corps must also consider avoidance measures related to the proposed port and transportation corridor, such as alternatives to the method of transportation (slurry pipeline versus trucking and barging and use of powerlines instead of a natural gas pipeline) and alternatives to port location and shipping/lightering methods.

**Minimization.** The Corps must evaluate the effectiveness of mitigation measures to avoid impacts to aquatic resources. To minimize the impacts of mining the Pebble deposit, at least three broad categories of minimization alternatives need to be thoroughly explored:

\textsuperscript{236} 2018 Alaska MOA at III.
\textsuperscript{237} PD at 4-6.
\textsuperscript{238} See 33 CFR § 320.4(r)(2).
\textsuperscript{239} 33 C.F.R. § 332.3(f)(1).
• Construction design requirements and best management practices to reduce the direct and indirect impacts of facilities constructed as part of the mining operation.
• Restoration alternatives so that, to the extent practicable, impacts associated with the mining operation are temporary impacts.
• To address long-term impacts of the mining operations, the Corps needs to evaluate options for long-term protections for the site and potentially at risk aquatic resources.

Minimization – Construction and Design Best Management Practices. As part of its review of PLP’s 404 permit application, the Corps should fully describe all the construction and design best management practices for all of the project’s components and how these practices and designs minimize impacts. Project components to be addressed include, but are not limited to: the mine site, ports and shipping, and the transportation and utility corridor.

The applicant’s proposal to construct lengthy roads, pipelines and utility corridors could lead to substantial discharges of fill in waters of the United States and extensive watershed impacts resulting from destruction of wetlands, habitat fragmentation, stream modification, polluted runoff, and pipeline spills. Construction impacts for these features are also likely to be significant. The EPA Assessment at Appendix G provides a detailed analysis of the potential environmental impacts of the various transportation and utility corridors proposed as part of the Pebble mine project and strategies for minimizing the impacts that cannot be avoided. However, the EPA analysis assumes that all of the corridors proposed for the project are necessary. In addition, the locations for the corridors assumed by EPA are materially different from those proposed by the applicant, so the EPA analysis cannot be relied upon for that purpose.

To address this, the Corps must initially provide a rigorous analysis as to whether each feature is necessary for the project to be practicable. Those that can be eliminated should be eliminated. For the features that are necessary, the Corps should examine alternatives that minimize the length of these corridors and combine these corridors where practicable to minimize habitat fragmentation.\(^{240}\) As part of this analysis, the Corps should consider whether the corridor locations assessed by EPA constitute a less environmentally damaging practicable alternative to the applicant’s proposal.

As to each of the proposed transportation and utility corridors, the Corps needs to carefully analyze design criteria to minimize direct and indirect impacts to waters of the United States, fisheries and other wildlife habitat. To do this, at the outset, the Corps needs to identify all streams, wetlands, other waters of the United States, and other significant wildlife habitat (including, but not limited to, nesting/denning areas, feeding areas and travel corridors) that the corridors could cross or otherwise materially affect. In this analysis, the Corps also needs to analyze the ecosystem and human reliance on these potentially-impacted values.

\(^{240}\) See BBWA Appendix G, p 31-32 (clustering of pipelines reduces the direct spatial footprint of disturbance by concentrating construction and maintenance activity).
With regard to significant wildlife habitat areas, all corridors should be located to avoid them, with an adequate buffer based on a case-by-case assessment of the fish and wildlife habitat at issue. If this is not practicable, mitigation measures need to be developed to compensate for the unavoidable impacts.

With regard to streams, each should be identified as to whether it is known habitat for fish, known not to be habitat for fish, or, in the very limited circumstances where the law does not compel data gathering, not assessed for fishery habitat. With regard to wetland areas, each should be identified as to whether it is adjacent to one or more streams, with information provided as to the fishery habitat status of the adjacent stream(s). With regard to significant wildlife habitat areas, each should be mapped to assist in avoiding impacts.

With the above information in hand, the Corps should identify criteria needed to design each necessary corridor to minimize impacts. Ideally, each stream and wetland should be bridged, with no footings placed in waters of the United States. If this alternative is not practicable, the Corps should explain in detail why, and then examine alternatives that allow minimal construction of footings in waters of the United States and an alternative that bridges all streams, and bridges wetlands adjacent to streams known to function as fishery habitat and streams not assessed for fishery habitat.

To the extent the Corps presents alternatives with less extensive bridging, the Corps needs to analyze and disclose the direct and indirect impacts to waters of the United States and fisheries associated with that alternative, and analyze appropriate compensatory mitigation. In addition, the Corps needs to analyze how culverts and porous fills can be designed and constructed to minimize impacts where bridging is not feasible. In particular, with regard to culverts, it is essential to develop a monitoring and maintenance strategy to ensure that maximum hydrological connectivity is maintained.

The EPA Assessment provides the analytical underpinning to support this approach. Specifically, EPA concludes with regard to streams:

where rivers are wide and river or stream channels shift location frequently, any crossing structure short of fully spanning the channel migration or flood-prone valley width can prove problematic. Because of the nature of design structures and geomorphic setting, crossings of small streams (under about 3 meters in width) pose greater risk of causing barriers to animal migration and movement of sediment and natural debris, whereas crossings of larger streams pose risk of erosion, sedimentation, channel and floodplain alteration, and delivery of pollutants from spills. The importance of small streams in Bristol Bay for Dolly Varden and other fish species (Woody and O’Neal 2010)

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241 See 40 C.F.R. 1502.22.
242 See BBWA Appendix G p. 29-30 (problems associated with culverts); p. 31 (porous fill as a minimization measure).
underscores the need for culverts to provide fish passage and maintain fish habitat, even where salmon are absent. Numerous studies also document that connectivity between small headwater streams (including streams with intermittent or seasonal flow) and downstream habitats is important and, in some cases, critical for productivity and survival of salmonids (e.g., Hilderbrand and Kirshner 2000, Young et al. 2004, Fausch et al. 2002, Hastings 2005, Wigington et al. 2006, Bryant et al. 2009). In general, culvert crossings of small streams remain problematic, even under contemporary standards and practices as applied by state highway departments and land management agencies.244

With regard to wetlands and near-surface groundwater resources, the EPA Assessment concludes:

Effective mitigation of adverse roadway impacts to streams must account explicitly not just for the passage of fish and surface waters; in ecosystems like Bristol Bay that are rich in shallow groundwater, roadways must also avoid disrupting or obstructing hyporheic flow paths and shallow aquifers. Short of not building new roads altogether, the most effective practice to avoid alteration of hydrology and hydrologic connectivity is to locate the route well away from streams, wetlands, springs, seeps, areas of near-surface groundwater, pond and lake shorelines, and alluvial fans and glacio-alluvial valley trains where frequently shifting stream courses are present. Due to the number and density of streams, zones of near-surface groundwater, and associated wetlands in the area of the potential transportation corridor (Hamilton 2007), complete avoidance of “sensitive habitat” would be exceedingly difficult. If avoidance of these sensitive hydrologic features is impossible, the next best mitigation is bridge the roadway across them, completely spanning the area of both surface water and near-surface groundwater, thereby reducing direct physical intersection of the roadway and water features.245

As to the road corridor, assuming it is determined to be necessary, the design must examine alternatives that minimize dust and direct road runoff and other pollutants away from waters of the United States. Ideally a combination of fencing and piping can minimize the impacts of polluted runoff and road detritus on streams and adjacent wetlands. Dust can be addressed through both road design and maintenance measures.246 As to any pipeline corridor deemed necessary, the EIS should analyze spill control, containment and countermeasures. A comprehensive plan addressing these issues should be included in the EIS.247 In particular,

244 BBWA Appendix G, p. 29-30 (Citations at pp. 37-44)
245 BBWA Appendix G, p. 30-31 (Citations at pp. 37-44).
246 See BBWA Appendix G, pp. 28-29.
247 See BBWA Appendix G, pp. 32-33.
this plan needs to evaluate the practicability of secondary containment in areas where discharges to waters of the United States are possible.

Secondary containment is a particularly important measure for isolating and managing leaks or spills wherever the pipeline is directly above surface water. Ideally some form of secondary containment should extend to other locations where leaks or spills could reach and contaminate surface or subsurface waters.\textsuperscript{248}

With regard to impacts during construction, all waters of the United States and significant wildlife habitat areas need to be mapped and flagged on the ground. Work involved in construction must avoid all unnecessary direct impacts to these areas. For example, materials storage and construction staging areas need to be located outside of waters of the United States and significant wildlife habitat areas. In addition, during construction, rigorous storm water pollution controls need to be implemented to minimize impacts associated with polluted runoff from construction activities.

While minimization of impacts from these corridors is essential, it is also important to consider EPA’s conclusions regarding site-specific measures to minimize impacts from road and pipeline corridors:

It is commonly recognized that the environmental impact of a major construction project like a road or major pipeline corridor can never be fully mitigated (Trombulak and Frissell 2000). Indeed, inherent to the underlying purpose of road projects (i.e., to alter natural conditions so that vehicle transportation is possible where it was physically impossible before) are changes to landscape structure that not only irretrievably alter ecosystem and biological conditions within the construction footprint, but also interrupt or modify the natural flux of water, sediment, nutrients, and biota across the ecosystem, usually permanently (Darnell et al. 1976, Rhodes et al. 1994, Forman and Alexander 1998, Forman 2000, Forman and Deblinger 2000, Trombulak and Frissell 2000). Moreover, engineering or implementation failures, unanticipated field conditions, and/or unforeseen environmental events inevitably test and compromise the effectiveness of mitigation measures applied in large projects (e.g., Espinosa et al. 1997, Levy 2009). The only sure way to avoid impacts to a freshwater ecosystem from a large road or pipeline project is to refrain from building such a project in that ecosystem (Frissell and Bean 2009).\textsuperscript{249}

Therefore, to the extent these impacts cannot be avoided, the EIS needs to assess the limitations of minimization efforts in reducing the environmental impacts of the mine’s essential corridor features. These impacts will then need to be addressed as part of the compensatory mitigation requirements for the project.

\textsuperscript{248} BBWA Appendix G, p. 32.
\textsuperscript{249} BBWA Appendix G, p. 26 (Citations at pp. 37-44).
Minimization – Restoration Opportunities. The EIS should examine the possibility of removing project features following completion of the proposed mining activity. In particular, the EIS should examine the practicability and environmental benefits of removing the applicant’s private road, mine pipeline and associated infrastructure and restoring the watercourses and the wetlands affected by these project components.

Minimization – Long Term Protections. EPA finds that, in addition to decades of active mining activity, wastes would require active management for centuries, and possibly in perpetuity.\textsuperscript{250} EPA notes that existing engineered mine waste storage systems have only been in place for about 50 years. And that, in particular, “[t]he response of current technology in tailings dam construction is untested and unknown in the face of centuries of unpredictable events.”\textsuperscript{251} It should be noted that a number of recent failures of modern engineered tailings dams place into question the reliability of this technology.\textsuperscript{252}

EPA concludes that, to be adequately protective, “[m]aintenance of mine discharges in terms of water quality, quantity, and timing to avoid adverse impacts would require long-term commitments for monitoring and facility maintenance.”\textsuperscript{253} EPA notes “the financial and technological requirements could be large and the cumulative risks (and likely instantaneous consequences) of facility accidents, failures and human errors would increase with time.”\textsuperscript{254} These risks include, but are not limited to catastrophic failure of the tailings storage facilities, breakdowns in the leachate collection system (including failure to detect new leachate sources), failure to maintain wastewater treatment facilities. “Additionally, climate change and predicted increases in [regional] water surplus” will require adaptation to new water management regimes.\textsuperscript{255} This poses a significant threat to the long-term stability of the tailings storage facilities, the closed mine pit, the waste rock facilities, the leachate collection system, and the wastewater treatment system.

The Corps will face a significant challenge in assessing whether Pebble mine will be in the public interest in light of these reasonably foreseeable long-term threats.\textsuperscript{256} Also, these long term threats need to be considered in any determination as to whether the facility will cause or contribute to violations of water quality standards and/or cause or contribute to significant degradation of the waters of the United States.\textsuperscript{257} The EIS needs to evaluate the long-term risks described above in light to the information provided by the applicant. In doing so, it is appropriate for the Corps to evaluate the history of mining operations in the United States.

\textsuperscript{250} BBWA ES-29.
\textsuperscript{251} Id.
\textsuperscript{252} See, e.g., Mount Polley Independent Expert Investigation and Review Report,\newline\url{https://www.mountpolleyreviewpanel.ca/}.
\textsuperscript{253} BBWA at p. 8-61.
\textsuperscript{254} Id.
\textsuperscript{255} Id.
\textsuperscript{256} See 33 CFR § 320(4)(a)(1) (benefits of a project must be balanced against its reasonably foreseeable detriments).
\textsuperscript{257} 40 CFR § 230.10(b),(c).
and around the world causing long-term environmental degradation as well as the unique issues associated with long-term maintenance of mining facilities in this area.

The Corps also needs to discuss the need for special conditions to address long-term maintenance of the mine facility following the completion of mining. These include, but are not limited to, a performance bond and/or other financial assurances sufficient to fund maintenance of the site in perpetuity in the event the applicant fails to properly maintain the site, and sufficient to remediate the site and compensate for natural resource damages in the event of toxic contamination either due to maintenance failures or catastrophic failure of the tailings storage facilities, pipelines or other mine features.

Corps of Engineers Regulatory Guidance Letter 05-1 provides useful guidance as to the potential scope of financial assurances the Corps of Engineers should consider in addressing these issues. The EIS should consider this guidance in developing options for financial assurances. However, the EIS needs to evaluate a wide range of financial assurance options (including options not considered in RGL 05-1) given the long-term threats posed by this mine, the importance of the resources at stake, and the long history of environmental degradation associated with the hard rock mining industry.

**Mitigation.** With respect to any unavoidable impacts to wetlands, PLP must develop a compensatory mitigation plan approved by the Corps and integrated into the NEPA analysis. PLP’s permit application, however, contains no meaningful information regarding the plans to provide compensatory mitigation for the unavoidable impacts of the proposed project. As discussed further below, this should be remedied by requiring the applicant to submit a substantive compensatory mitigation plan so that the public may meaningfully participate in the development of compensatory mitigation plans for the project. Given this deficiency in the record, our comments, at this time, are limited to conceptual comments as to the goals any meaningful compensatory mitigation plan would need to meet.

Pursuant to the Corps’ permitting regulations, the applicant is required to take the initial steps in developing information regarding compensatory mitigation. The applicant must include in its 404 permit application “a statement describing how impacts to waters of the United States are to be compensated for or a statement explaining why compensatory mitigation should not be provided.”258 Permit applicants are responsible for proposing an appropriate compensatory mitigation option to offset unavoidable impacts.259 In addition, for a 404 permit application to be complete, it must provide “sufficient information to issue a public notice.”260 With regard to compensatory mitigation, the public notice must provide a level of detail “commensurate with the scope and scale of the impacts.”261

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258 33 CFR § 325.1(d)(7).
259 33 CFR § 332.3(a).
260 33 CFR § 325.1(d)(10).
261 33 CFR § 332.4(b)(1).
PLP’s 404 permit application fails to satisfy the requirements of the Corps’ regulations. It neither describes how the impacts associated with its project will be compensated for, nor provides a rationale why compensatory mitigation should not be required. In addition, the application fails to provide information sufficient for the issuance of a public notice, particularly given the scope and scale of the proposed impacts. As such, the Corps should reject the application as incomplete. In the alternative, the Corps of Engineers could request additional information needed to address this deficiency in the application. 33 CFR 325.1(e).

However, as noted above, until sufficient information is provided to satisfy the requirements of 33 CFR § 325.1(d)(7) and 33 CFR § 332.4(b)(1), the Corps should treat the application as incomplete and suspend processing of the permit. The public cannot provide meaningful comments on a public notice lacking any substantive information on this issue. In addition, the public is prejudiced in its ability to participate in comments on the Draft EIS and 404 permit application process if it has no information regarding the substance of the applicant’s compensatory mitigation. Until this deficiency is properly addressed, the Corps should not conclude the 404 public comment period.

The Corps regulations mandate evaluation of the appropriateness of compensatory mitigation for “significant resource losses which are specifically identifiable, reasonably likely to occur, and of importance to the human or aquatic environment.” The extent of the known impacts to wetlands, fish and wildlife resources, cultural and recreational values, and water quality are discussed throughout this comment letter and in appendices. The Corps needs to take specific steps to further assess the magnitude of each of these categories of resource losses associated with the proposed project and analyze the extent to which these impacts can be practicably avoided and minimized.

Similarly, the 404(b)(1) Guidelines prohibit permitting the discharge of dredged or fill material “unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharges to the aquatic ecosystem.” Even after full development of practicable avoidance and minimization measures, the known impacts of mining the Pebble deposit are extremely significant. Thousands of acres of wetlands will be destroyed. Miles of streams which serve as habitat for fish and wildlife resources, including but not limited to, migrating salmonids will be filled, dewatered and or severed by construction of the mine and associated facilities. Water quality in surviving streams will be significantly degraded by copper and other pollutants. Commercial, recreational and subsistence fisheries will be degraded.

It is essential that the EIS fully document these impacts and the limitations on avoiding and minimizing these impacts at the Pebble mine site, so that the extent of the necessary

262 33 CFR § 325.2(a)(2).
263 33 CFR § 320.4(r)(2).
264 40 CFR § 230.10(d).
compensatory mitigation can be properly identified. These “specifically identified impacts” are all “significant resource losses” that are certain to occur from construction and operation of Pebble mine and are “of importance to the human or aquatic environment.” Therefore, once the magnitude of these impacts is fully identified, the EIS must develop compensatory mitigation alternatives that are “directly related to the impacts, appropriate to the scope and degree of those impacts, and reasonably enforceable.”

To address the unavoidable adverse effects of proposed discharges of dredged or fill material, the Corps and EPA jointly developed a rule entitled Compensatory Mitigation For Losses of Aquatic Resource. The Mitigation Rule sets an overarching standard that must be met in developing an appropriate compensatory mitigation proposal. The fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to waters of the United States authorized by DA permits. The district engineer must determine the compensatory mitigation … based on what is practicable and capable of compensating for the aquatic resource functions that will be lost as a result of the permitted activity. The magnitude of the unavoidable impacts to waters of the United States and aquatic resource functions from this project will require enormous compensatory mitigation to comply with these regulatory thresholds. In cases where insufficient compensatory mitigation is proposed, “the district engineer may determine that a DA permit for the proposed activity cannot be issued because of the lack of appropriate and practicable compensatory mitigation options.”

**PLP’s Proposed Mitigation Measures Already Assessed by EPA.** EPA’s BBWA has firmly established that the adverse impacts discussed above could not be adequately mitigated. Under the Mitigation Rule promulgated by EPA and the U.S. Army Corps of Engineers (Army Corps), mitigation must first seek to avoid adverse impacts to the aquatic ecosystem and, to the extent such impacts cannot be avoided, those impacts must be minimized. Where impacts cannot be avoided or minimized, appropriate and practicable compensatory mitigation must be provided as required by the 404(b)(1) Guidelines. The Mitigation Rule

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265 33 CFR 320.4(4)(2).
266 33 CFR 320.4(r)(2).
267 33 CFR § 332, 40 CFR 230, Subpart J.
268 33 CFR § 332.3(a)(1) (emphasis added). See, also, 33 CFR § 332.3(f)(1) (“If the district engineer determines that compensatory mitigation is necessary to offset unavoidable impacts to aquatic resources, the amount of required mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions.”) (emphasis added).
269 33 CFR § 332.1(c)(3).
270 BBWA Appx. J. See also Yocom, Thomas G. & Rebecca L. Bernard, Mitigation of Wetland Impacts from Large-Scale Hardrock Mining in Bristol Bay Watersheds, Seattle J. Envt’l L., Vol. 3:71 (2013), available at http://www.sjel.org/vol3/mitigation-of-wetland-impacts-from-large-scale-hardrock-mining-in-bristol-bay-watersheds (“there are few, if any, reasonable and practicable measures within the relevant watersheds that could offset the enormous losses of headwater wetland and aquatic habitats associated with the proposed Pebble Mine.”).
271 40 C.F.R. § 230.91(c).
272 Id. § 230.10(d); 40 C.F.R. § 230.91(c)(3).
also requires that, for mitigation to effectively compensate for impacts to aquatic resources, such mitigation must be in the same area as the impacts—preferably in the same watershed.\textsuperscript{273}

The BBWA thoroughly documents the reasons why the adverse impacts from mining the Pebble deposit would not be offset by compensatory mitigation. First, impact avoidance and minimization would not eliminate the losses of aquatic habitat caused by mining because wetlands and streams are widely distributed in the affected watersheds, substantial infrastructure would have to be built in this largely undeveloped and pristine region, and siting options are limited due to the location of the ore body.\textsuperscript{274}

Further, none of the compensatory mitigation measures proposed to date would adequately compensate for the aquatic habitat losses at the scale at which they would occur. Mitigation credits and in-lieu fee program credits – the preferred mitigation methods under the Mitigation Rule\textsuperscript{275} – would be inadequate. There is currently no approved mitigation bank serving this area, and the single in-lieu fee program that services the area has provided compensation only for projects with much more limited impacts.\textsuperscript{276} In any event, both mitigation approaches would be stymied by the lack of degraded resources and opportunities for restoration or enhancement within the affected watersheds.\textsuperscript{277} In addition, all of the permittee-responsible compensatory mitigation measures that have been suggested by PLP – measures such as increasing habitat connectivity, removing beaver dams, increasing habitat quality or quantity, and augmenting water flows – are either unavailable within the affected watersheds because of their intact, functioning character, or have an inadequate track record of success.\textsuperscript{278} Looking outside of the affected watersheds, the potential mitigation measures that have been suggested – measures such as restoring old mine sites or constructing hatcheries – are problematic for various reasons and simply are not available at the necessary scale.\textsuperscript{279}

During BBWA comment periods in May 2012 and April 2013, PLP “identified an array of compensatory mitigation measures that it felt could offset the kinds of unavoidable impacts on streams, wetlands, and fish expected to occur during mining of the Pebble Deposit.”\textsuperscript{280} EPA assessed these proposed mitigation measures and “concluded that there are significant

\begin{itemize}
\item \textsuperscript{273} Id. 230.93(b).
\item \textsuperscript{274} BBWA, Appx. J at page 11.
\item \textsuperscript{275} Id. §§ 230.93(b)(2); 230.93(b)(3).
\item \textsuperscript{276} Id., Appx. J at pages 11, 13.
\item \textsuperscript{277} Id., Appx. J at page 13. EPA correctly concludes in its compensatory mitigation analysis that the “most appropriate geographic scale” within which to compensate for unavoidable impacts from mining the Pebble deposit would be at the site of impact, i.e. the North Fork Koktuli, South Fork Koktuli, and Upper Talarik Creek watersheds. \textit{Id.} at page 9.
\item \textsuperscript{278} Id., Appx. J at pages 13-32.
\item \textsuperscript{279} Id., Appx. J at pages 33-36.
\item \textsuperscript{280} PD at page 2-13.
\end{itemize}
challenges regarding the potential efficacy, applicability, and sustainability of compensation measures proposed by PLP for use in the Bristol Bay region” as well as raising “questions as to whether sufficient compensation measures exist to address impacts of the expected nature and magnitude.”

As EPA points out in the BBWA, preservation is a disfavored method of mitigation and no sites that are large enough, threatened, and not otherwise protected have been identified in the affected watersheds or in the larger Bristol Bay region. Moreover, as stated by EPA:

Compensatory mitigation efforts typically involve restoration and enhancement of waters that have potential for improvement in ecological services. However, the waters of the Bristol Bay watershed are already among the most productive in the world. EPA Region 10 sees little likelihood that human activity could improve upon the high-quality natural environment in the Bristol Bay watershed that nature has created and that has thus far been preserved.

For all of these reasons, sufficient compensatory mitigation opportunities are simply not available within the affected watersheds or nearby to adequately offset the enormous losses of aquatic habitat that would occur as a result of mining the Pebble deposit.

Following publication of the final BBWA, EPA initiated its CWA 404(c) action and specifically requested that PLP submit “information for the record to demonstrate that no unacceptable adverse effects to aquatic resources would result from discharges associated with mining the Pebble deposit or that actions could be taken to prevent unacceptable adverse effects to waters from such mining.” PLP responded with a submission to EPA on April 29, 2014 describing what it believed were measures to offset unavoidable impacts from mining the Pebble deposit. EPA reviewed PLP’s April 29, 2014 submittal and additional information regarding compensatory mitigation and “determined that it did not change the conclusions drawn in Appendix J” of the BBWA.

As EPA accurately states, based on the best available science and information, in the 404(c) Proposed Determination:

Nearly all of the existing peer-reviewed literature reviews evaluating the effectiveness of stream restoration and rehabilitation projects, including reviews referenced in PLP’s submittal, conclude that the majority of

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281 PD at page 2-13.
282 BBWA, Appx. J at page 33.
283 PD at page 2-13.
284 Yocom & Bernard, at page 22.
285 Letter from Dennis J. McLerran, EPA Region 10 Regional Administrator, to Thomas Collier, PLP; Joe Balash, Alaska DNR; and Col. Christopher D. Lestochi, USACE (Feb. 28, 2014).
286 PD at page 2-14.
restoration projects either are never measured for effectiveness or do not meet their restoration objectives. PLP points to the millions of dollars spent on salmon recovery projects in the Pacific Northwest and British Columbia, with the implication that there is a connection between financial investment and salmon productivity. However, despite the millions spent, Pacific salmon remain at a fraction of their historical levels in the lower 48 states. As discussed in detail in Appendix J of the BBA, compensation methods proposed by PLP, including placement of instream structures, stream fertilization, and construction of spawning channels, have typically had only variable, local, or temporary effects; were designed for use in degraded watersheds; or resulted in adverse, unintended consequences (Peterman 1982, Giannico and Hinch 2003, Walters et al. 2008, Whiteway et al. 2010, Jones et al. 2014, EPA 2014a: Appendix J).

Thus, EPA concluded that, despite PLP’s proposed mitigation measures submitted to the agency for review “it was not satisfied that no unacceptable adverse effect could occur, or that adequate corrective action could be taken to prevent an unacceptable adverse effect.”

5. To Ensure Compliance with the 404(b)(1) Guidelines, the Corps Should Require Evaluation and Testing under 40 C.F.R. §§ 230.60-61

To decide whether a section 404 permit for discharge of dredged or fill material may be issued, the Corps must, among other things, make factual determinations on physical substrate; water circulation, fluctuation, and salinity; suspended particulates/turbidity; contaminants; aquatic ecosystem and organisms; proposed disposal sites; cumulative effects on the aquatic ecosystem; and secondary effects on the aquatic ecosystem. These factual determinations are reviewed to determine whether the project file is sufficient to support findings or whether the Corps must require pre-testing evaluation as described in 40 C.F.R. § 230.60-61. The Guidelines direct that “[i]f there is a reasonable probability of chemical contamination, conduct the appropriate tests according to the section on Evaluation and Testing (§230.61).” Therefore, one of the findings required by the Guidelines is whether testing is necessary to determine whether the material proposed for discharge has the potential to release contaminants at unacceptable levels. Despite the very limited implementation of the testing program provided for in 40 C.F.R. § 230.61, the United States has relied on this provision to justify regulation of mine waste disposal under section 404 of the Clean Water Act. In its brief to the Supreme Court in Coeur Alaska v. Southeast Alaska Conservation Council, the United States wrote:

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287 PD at page 2-14.
288 PD at page 2-14.
289 40 C.F.R. § 230.11
290 40 C.F.R. § 230.5(g).
291 40 C.F.R. § 230.5(i).
292 40 C.F.R. § 230.60, 230.61.
That is not to say Section 404(b)(1) Guidelines disregard water-quality concerns. To the contrary, the Guidelines provide for the consideration of the effects of contaminants on water quality in a number of ways, specifically requiring compliance with applicable State water quality standards (40 C.F.R. 230.10(b)(1)); appropriate use of chemical and biological testing to evaluate contaminant effects (40 C.F.R. 230.11(d) and (e), 230.60, 230.61); and compliance with toxic effluent limitations promulgated under Section 307 (40 C.F.R. 230.10(b)(2)).

For proposed Pebble Mine Project, based on the criteria set out in 40 C.F.R. § 230.60, the Corps should conduct testing consistent with the provisions of 40 C.F.R. § 230.61. Indeed, there is a “possibility … substantial natural deposits of minerals or other substances … could be released to the aquatic environment in harmful quantities by man-induced discharge activities.” In addition, tests conducted by the applicant and analyzed by EPA in the BBWA document the potential for release of harmful quantities of contaminants to the aquatic environment from mining operations; including, but not limited to, mine waste disposal. Moreover, EPA’s findings in the BBWA raise substantial likelihood that contaminants will be carried well beyond the disposal site and cause substantial damage to the aquatic ecosystem downstream from the proposed disposal sites.

In evaluating the nature and extent of the necessary testing, one critical factor that must be considered is that testing is intended to allow the Corps to determine “the nature and degree of effect that the proposed discharge will have, both individually and cumulatively, on the structure and function of the aquatic ecosystem and organisms.” One of the cumulative impacts the Corps has identified for Pebble Mine is the likelihood that the applicant will seek to expand its footprint to develop a 78-year mine. At a minimum, testing needs to evaluate the effect of both the proposed mine and the 78-year mine expansion. In addition, a number of mine failure scenarios are discussed as possible sources of contaminant releases in the Draft EIS for Pebble Mine and in the BBWA. Testing is appropriate to determine the scope and impact of contaminant releases under these scenarios for both the mine proposal currently being reviewed by the Corps and the 78-year mine.

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294 40 C.F.R. § 230.60(b)(6).
295 40 C.F.R. § 230.60(b)(2).
296 See 40 C.F.R. § 230.60(d).
297 40 C.F.R. § 230.11(emphasis added).
298 RFI 062 and Draft EIS Executive Summary at page 65; page 4.2-14.
299 See Draft EIS, Section 4.27.
300 See BBWA, Chapter 9.
D. Cumulative and Secondary Impacts of the Pebble Mine Project Will Cause or Contribute to Significant Degradation; Therefore, the Project Fails to Comply with the 404(b)(1) Guidelines and a 404 Permit Cannot be Issued

The CWA 404(b)(1) Guidelines and Corps regulations prohibits discharges that will cause or contribute to significant degradation of waters.\(^{301}\) Significant degradation may include *individual or cumulative impacts* to: human health and welfare; fish and wildlife; ecosystem diversity, productivity and stability; and recreational, aesthetic or economic values.\(^{302}\) “The fundamental precept of the Guidelines is that discharges of dredged or fill material into waters of the United States, including wetlands, should not occur unless it can be demonstrated that such discharges, either individually or cumulatively, will not result in unacceptable adverse effects on the aquatic ecosystem.”\(^{303}\) The Guidelines define cumulative effects on the aquatic ecosystem as:

> the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems.\(^{304}\)

In addition, the 404(b)(1) Guidelines require factual determinations as to secondary effects on the aquatic ecosystem.\(^{305}\) This information must be considered “prior to the time final section 404 action is taken.”\(^{306}\) The Guidelines define secondary effects as “effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material.”\(^{307}\)

To issue a 404 permit, the Corps must “collect information and solicit information from other sources about the cumulative impacts on the aquatic ecosystem” and consider this information “during the decision-making process concerning the evaluation of individual permit applications.”\(^{308}\) Thus, when determining whether to issue a 404 permit for the proposed Pebble Mine Project, the Corps must consider the secondary and cumulative impacts of the proposed mine’s construction and related activities on a number of resources.

\(^{301}\) 40 C.F.R. § 230.10(c); 33 C.F.R. § 320.4(a)(1).

\(^{302}\) 40 C.F.R. § 230.10(c) (“Under these Guidelines, effects contributing to significant degradation considered individually or collectively…”).


\(^{304}\) 40 C.F.R. § 230.11(g)(1).

\(^{305}\) 40 C.F.R. § 230.11(h).

\(^{306}\) 40 C.F.R. § 230.11(h).

\(^{307}\) 40 C.F.R. § 230.11(h).

\(^{308}\) 40 C.F.R. § 230.11(g)(2).
including fish and wildlife, the aquatic ecosystem, water quality, recreational and commercial fisheries, recreation, aesthetics, and special aquatic sites.

The best available information related to the proposed Pebble Mine Project’s cumulative impacts, secondary effects, and compliance with the 404(b)(1) Guidelines is found in EPA’s Watershed Assessment and 404(c) Proposed Determination. As described below, EPA’s record shows that the cumulative and secondary effects of mining the Pebble deposit, even at a size and amount smaller than the one currently proposed in PLP’s 404 permit application, would cause or contribute to significant degradation of the waters of the United States and will have unacceptable adverse impacts on the aquatic ecosystem.

**Cumulative Effects Could Result in Significant Degradation of Waters of the US.** As noted in expert reports contained in Appendix E to this comment letter, the cumulative impacts of mining the Pebble deposit, at the 78-year, 6.5 billion ton scenario outlined in the Draft EIS could cause or contribute to significant degradation of waters of the US.\(^\text{309}\) Moreover, the EPA Proposed Determination found that at the 6.5 billion ton scenario would “increase the extent of direct habitat losses, [and] substantially expand impacts in the headwaters of the SFK and UTC tributaries” to approximately 46 miles of fish-bearing streams, leading to “unprecedented loses of habitat.”\(^\text{310}\) As shown by the Draft EIS, these findings still hold true, with estimated losses of anadromous fish habitat for the 78 year mine directly destroying between 218.8 to 407.2 linear miles of streams,\(^\text{311}\) 43.75 linear miles of salmon streams,\(^\text{312}\) 15,903 acres of wetlands,\(^\text{313}\) and nearly 30,000 acres of pristine terrestrial habitat.\(^\text{314}\)

**Secondary Effects Could Result in Unacceptable Adverse Effects on Fishery Areas.** Indeed, “EPA Region 10 has determined that the direct and secondary effects associated with the discharge of dredged or fill material for construction and routine operation of the 0.25

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\(^\text{309}\) See, attached Appendix E, pages 6 to 429, Albert, Dave M., Direct loss of salmon streams, tributaries, and wetlands under the proposed Pebble Mine compared with thresholds of unacceptable adverse effects in the EPA Proposed Determination pursuant to Section 404(c) of the Clean Water Act (June 21, 2019); Schweisberg, Matthew, Pebble Mine: Anticipated Adverse Impacts to Wetlands (May 12, 2019); Schweisberg, Matthew, Compliance with Section 230.10(c) of the 404(b)(1) Guidelines, Proposed Pebble Mine Project (June 11, 2019); Gracz, Michael, Is a Finding of Significant Degradation in a 404(b)(1) Analysis of the Pebble Project Scientifically Supportable? (May 24, 2019); Utz, Ryan, Misapplication of an environmental threshold in an ecosystem with exceptionally rich fisheries resources (June 19, 2019).

\(^\text{310}\) PD at page 4-38.

\(^\text{311}\) Attached Appx. E, at page 8. Albert, Dave M., Direct loss of salmon streams, tributaries, and wetlands under the proposed Pebble Mine compared with thresholds of unacceptable adverse effects in the EPA Proposed Determination pursuant to Section 404(c) of the Clean Water Act (June 21, 2019)

\(^\text{312}\) Draft EIS, p. 4.24-37 (“At the mine site, an additional 35 miles of anadromous stream habitat would be lost in the SFK and UTC watersheds…”).

\(^\text{313}\) Draft EIS, p. 4.22-39 to 40 (“The total number of wetlands potentially affected under this scenario would amount to an additional 12,445 acres.”).

\(^\text{314}\) Draft EIS p. 4.22-39. Note that elsewhere in the Draft EIS, the Army Corps says the expanded mine site footprint is 34,790 acres.
stage mine could result in unacceptable adverse effects on fishery areas.” Examples of secondary effects from mining the Pebble deposit evaluated by EPA in the Proposed Determination include the following:

- Elimination of streams and wetlands due to drowning by the tailings impoundment.
- Dewatering of streams and other aquatic resources due to pumping of groundwater from the mine pit.
- Fragmentation of aquatic resources due to the placement of the mine pit, waste rock pile, or TSF.
- Degradation of downstream fish habitat due to streamflow alterations resulting from water capture, withdrawal, storage, treatment, or release at the mine site.
- Degradation of downstream fish habitat due to the loss of important inputs such as nutrients and groundwater from upstream aquatic resources.

EPA concluded that “aquatic resource losses—due to elimination, dewatering, or fragmentation—would result in both the outright loss of fish habitat, including spawning and breeding areas, and the degradation of downstream waters.”

E. THE CORPS RELIANCE ON THE THRESHOLD APPROACH TO PROJECT IMPACTS IS UNLAWFUL, CONTRARY TO THE 404(b)(1) GUIDELINES AND CANNOT BE USED TO MAKE A 404 PERMIT DECISION

Throughout the Draft EIS, the Corps uses percentages of fish habitat and wetlands lost to qualify the massive magnitude of the proposed Pebble Mine Project impacts to anadromous waters and wetlands. This method of qualifying habitat loss is more commonly known as the “threshold approach.” However, the 404(b)(1) guidelines (40 CFR Part 230) contain no mention of percentages or a “threshold” to determine significant degradation. Moreover, a whitepaper commissioned by EPA in 2018 finds that the “threshold approach is based on misinterpretations and misapplications of the literature. These findings lead not only to the conclusion that the approach is technically flawed and not supported by the science, but also to the determination that the implementation of such an approach is not suitable for evaluating significant degradation.” The whitepaper concludes that this approach “could lead to violations of 40 CFR 230.10(d).”

EPA continued to voice concerns with this approach as specifically applied to Pebble:

315 PD at page 2-17.
316 PD at page 4-3.
317 PD at page 4-3 to 4-4.
318 See attached Appx. E, at pages 103 to 117, Utz, Ryan, Misapplication of an environmental threshold in an ecosystem with exceptionally rich fisheries resources (June 19, 2019)
320 Id.
We recommend that, instead of the threshold approach, the EIS describe the amount of different types of wetlands impacted across the alternatives without comparison to an arbitrary threshold. Please see the white paper that EPA sent to the AK District in July 2018 that outlines scientific concerns regarding this kind of threshold approach. If the Corps continues with use of these thresholds, we recommend that the DEIS identify the scientific basis for the thresholds proposed in this paragraph and clarify how these thresholds are being used in the impacts analysis. We also recommend that the DEIS clarify how the approach proposed in this paragraph is similar to the approaches used in the Point Thompson and Donlin Mine EISs. We recommend that this clarification include the history of the approach, the exact approach used in the referenced documents, supporting scientific literature, how the geographic location of each project lends the ability for similar analysis, and adequacy of information available to make these comparisons. We also recommend that the DEIS clarify what is meant by “within a particular watershed.” We note that later sections refer to a 10-digit HUC. We recommend that the DEIS explain throughout what scale is used and why.

The threshold approach has no foundation in law and the EPA has roundly dismissed it as scientifically inaccurate and technically flawed. Moreover, experts in the field of thresholds note that it should not be used “beyond outside the scope and conditions in which it that threshold was developed, as is the case in assessing the environmental impacts of the proposed Pebble mining project.”

**F. A 404 PERMIT CANNOT BE ISSUED – UNRESOLVED CWA 404(c) ACTION**

In July 2014, EPA issued a Proposed Determination under its CWA 404(c) authority related to mining the Pebble deposit. That Proposed Determination is in place today. The Corps is prevented by regulations from issuing a 404 permit to PLP unless the 404(c) proposed determination is resolved:

> The Corps will not issue a permit where the regional administrator of EPA has notified the district engineer and applicant in writing pursuant to 40 CFR 231.3(a)(1) that he intends to issue a public notice of a proposed determination to prohibit or withdraw the specification, or to deny, restrict or withdraw the use for specification, of any defined area as a disposal site in accordance with section 404(c) of the Clean Water Act.

The mine footprint, based on the impacts assessed in EPA’s 0.25 billion ton mine scenario, would directly impact at least 24 miles of streams by eliminating, blocking, or dewatering streams, of which at least 5 miles are currently known to provide spawning and rearing

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321 See attached Appx. E, at pages 103 to 117, Utz, Ryan, Misapplication of an environmental threshold in an ecosystem with exceptionally rich fisheries resources (June 19, 2019)

322 33CFR § 323.6(b).
habitats for salmonids. Moreover, copper effluent during routine operations would cause death or reduced reproduction of aquatic invertebrates in 13 miles of streams in the Pebble 0.25 scenario. However, Pebble’s current proposed mine plan is 1.5 billion tons – or six times the size of the EPA 0.25 scenario – and is thus closer to EPA’s analysis of a 2.0 billion ton mine. For that size mine, EPA predicts that copper contamination from routine mine operations would induce avoidance of streams by salmon in 15 to 35 miles of streams in the Pebble 2.0 scenario. EPA also predicts that this scenario would also cause death or reduced reproduction of aquatic invertebrates (a crucial element of the food web for salmon) in 25 to 38 miles of streams in the Pebble 2.0 scenario. As noted by the EPA, the impacts to anadromous fish streams from mining even a 0.25 billion ton deposit at the Pebble site, “is unprecedented in the context of the CWA Section 404 regulatory program in Alaska.”

The Corps, however, for its part entirely ignores EPA’s 404(c) Proposed Determination findings. Not a single reference to EPA’s pending 404(c) action exists in the Draft EIS or any of the more than 1,400 documents on the Pebble EIS website or in the Public Notice on the 404 permit application. This is despite EPA explicitly reaching out to the Corps for its view on what might be done to mitigate the impacts of the proposed Pebble Mine Project to avoid “unacceptable adverse effects to aquatic resources” and despite EPA’s conclusions about the proposed Pebble Mine Project being based on a mine plan of a smaller size. The EPA made its findings based on more than three years of review and two rounds of peer reviews of the best available science to inform its decision made in accordance with the 404(b)(1) Guidelines. The Corps’ failure to consider EPA’s conclusions and expert determination under its 404(c) authority and made under the 404(b)(1) Guidelines ignores relevant facts, “fail[s] to consider an important aspect of the problem, offer[s] an explanation for its decision that runs counter to the evidence before the agency” and is thus arbitrary and capricious.

G. A 404 PERMIT FOR THE PROPOSED PEBBLE MINE PROJECT WOULD BE CONTRARY TO THE PUBLIC INTEREST AND THUS CANNOT BE ISSUED

Section 404 permit applications must include a statement of purpose and need for the proposed activity. In order to obtain a dredge-and-fill permit, the Applicant must show that the proposed project is the “least environmentally damaging practicable alternative.” When considering alternatives to a project, USACE must conduct a review of the project to

323 BBWA at ES-15 to ES-18.
324 Id.
325 Id.
326 Id.
327 PD at 4-6.
328 Letter from EPA to Army Corps (Feb. 28, 2014).
330 33 C.F.R. § 325.1(d)(1).
331 40 C.F.R. § 230.10(a).
obtain “information necessary to evaluate the probable impact on the public interest.”332
Consideration of these factors must be based on an evaluation of all probable impacts, including cumulative impacts.333 In addition, the “specific weight of each factor is determined by its importance and relevance to the particular proposal.”334

While the Corps will not be providing the public (and possibly cooperating agencies) with the opportunity to review its draft Public Interest Determination, BBNC outlines here relevant factors for consideration in the Corps’ determination, as this comment period will be the public’s only opportunity to provide input. The Corps regulations direct that “full consideration and appropriate weight will be given to all comments, including those of federal, state, and local agencies, and other experts on matters within their expertise.”335

Thus, upon consideration of the public interest factors as described below, based on BBNC’s experience as the largest private landowner in Bristol Bay and the ANCSA regional corporation for the region, and after more than two decades of being engaged in the public debate over the proposed Pebble Mine Project and listening closely our shareholders and to the people of Bristol Bay, it is BBNC’s opinion that the proposed Pebble Mine Project is contrary to the public interest and should not be permitted. The project would result in massive, irreversible, and negative impacts on Bristol Bay and Alaska’s wetlands, fish and wildlife, water quality, water quantity, floodplains, historic and cultural values, scenic values, recreational values, energy use, and economics. No mitigation measures or permit conditions can be sufficiently implemented to lessen the negative impacts of the proposed Pebble Mine Project in order to warrant a finding that the project would be in the public interest. Therefore, PLP’s permit application must be denied.336

1. Public Interest Review (33 C.F.R. § 320.4(a))

“The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest.”337 The Corps is directed to evaluate all “probable impacts[s] which the proposed activity may have on the public interest” through “a careful weighing of all those factors which become relevant in each particular case.”338 This decision is done through a “balancing process” that should “reflect the national concern for both protection and utilization of important resources.”339 As discussed infra Section IV(G) subsections 2 to 13, “factors which may be relevant to the proposal must be considered including the cumulative effects thereof: among those are conservation, economics, aesthetics, general environmental

332 33 C.F.R. § 320.4; 33 C.F.R. § 325.3(a).
333 33 C.F.R. § 320.4(a)(1).
334 33 C.F.R. § 320.4(a)(3).
335 33 C.F.R. § 320.4(a)(3).
336 33 C.F.R. § 320.4(a)(1).
337 33 C.F.R. § 320.4(a)(1).
338 33 C.F.R. § 320.4(a)(1).
339 33 C.F.R. § 320.4(a)(1).
concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.**340

In addition to these factors discussed below, the following general criteria must be considered in the evaluation of PLP’s permit application:

(i) The relative extent of the public and private need for the proposed structure or work;

(ii) Where there are unresolved conflicts as to resource use, the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work; and

(iii) The extent and permanence of the beneficial and/or detrimental effects which the proposed structure or work is likely to have on the public and private uses to which the area is suited.341

As described in this section, the proposed Pebble Mine Project is contrary to the public interest of the people of Bristol Bay, and—given the global significance of Bristol Bay’s salmon runs and associated economic importance of the fishery—contrary to the public interest of the US and the world.

For the Corps to properly conduct a public interest review of the proposed Pebble mine project, the agency must independently evaluate the project’s economic benefits and costs, including analyzing negative impacts to Bristol Bay salmon from habitat destruction, catastrophic dam failure, loss of genetic diversity, the reduced marketability and perceived contamination of fish products, and the cascading effects these negative impacts will have throughout the socioeconomic underpinning of the region. The Corps must also require an independent economic analysis of the costs to build, operate, and fully reclaim and remediate the proposed project within a 20-year timeframe and take into consideration whether the mine plan is economically feasible. Even if PLP provides an economic feasibility analysis, which it has not done, the Corps must not blindly accept PLP’s statements that the mine is economically viable as currently proposed, but rather must independently review the project’s economic viability. Indeed, the EPA, pursuant to its own CWA authority, has already questioned whether mining anything less than for 45 years or 2 billion tons of material will be economic.342

340 33 C.F.R. § 320.4(a)(1).
341 33 C.F.R. § 320.4(a)(2)(i)-(iii).
342 See supra, n. 69.

Regarding impacts to water quality and safety of impoundment structures, the Corps will face a significant challenge in assessing whether the proposed Pebble mine will be in the public interest in light of reasonably foreseeable long-term threats such as catastrophic failure of the tailings storage facilities, breakdowns in the leachate collection system (including failure to detect new leachate sources), and failure to maintain wastewater treatment facilities.\footnote{See 33 CFR § 320(4)(a)(1) (benefits of a project must be balanced against its reasonably foreseeable detriments).} Commencing an economically infeasible mining project is contrary to the public interest because it risks leaving the public with the responsibility to stabilize and remediate an abandoned site. Long-term threats need to be considered in any determination as to whether the facility will cause or contribute to violations of water quality standards and/or cause or contribute to significant degradation of the waters of the United States.\footnote{See 40 CFR § 230.10(b) and 40 CFR § 230.10(c).}

2. **Effect on Wetlands (33 C.F.R. § 320.4(b))**

Wetlands “are vital areas that constitute a productive and valuable public resource, the unnecessary alteration or destruction of which should be discouraged as contrary to the public interest.”\footnote{33 C.F.R. § 320.4(b)(1).} As described in Section IV.B. above, the project poses massive direct, indirect, secondary, and cumulative impacts on wetlands and waters of the U.S. These levels of impact are unprecedented for any hardrock mining project in Alaska. It is not in the public’s interest to destroy these wetlands vital for the maintenance of the entire Bristol Bay ecosystem. Development of the Pebble Mine Project is not “necessary,” rather, it constitutes “unnecessary alteration or destruction of which should be discouraged as contrary to the public interest.”

3. **Fish and Wildlife (33 C.F.R. § 320.4(c))**

The Corps must review the proposed Pebble Mine Project “with a view to the conservation of wildlife resources by prevention of their direct and indirect loss and damage due to the activity proposed in a permit application. The Army will give full consideration to the views of those agencies on fish and wildlife matters in deciding on the issuance, denial, or conditioning of individual or general permits.”\footnote{33 C.F.R. § 320.4(c).} The Corps duties during public interest review of the project include consulting with the Regional Director, U.S. Fish and Wildlife Service, the Regional Director, National Marine Fisheries Service.\footnote{33 C.F.R. § 320.4(c).} As described here,
DOI-USFWS, along with EPA, is already on record expressing serious concerns with the proposed Pebble Mine Project and its impacts to fish and wildlife resources. EPA in particular has already made findings that the proposed Pebble Mine Project – *even at a scale smaller than currently proposed in PLP’s present 404 permit application* – would result in “direct and indirect loss and damage due to the activity proposed.” Department of Interior, in its pursuant to its authority under the Migratory Bird Treaty Act of 1918, Bald and Golden Eagle Protection Act of 1940, Alaska National Interest Lands Conservation Act (ANILCA) of 1980, Anadromous Fish Conservation Act of 1965, and the Fish and Wildlife Coordination Act of 1934 has concurred with EPA’s findings. Thus, the record before the Corps strongly supports denial of the 404 permit application due to direct and indirect loss and damage to fish and wildlife that is contrary to the public’s interest in “the conservation of wildlife resources.”

**Habitat Impacts Overall.** PLP’s proposed Project would result in the permanent and direct loss of massive amounts of fish and wildlife habitat, destroying more than 80 linear miles of stream, 3,560 acres of wetlands during normal and first phase of operations, and more than 9,000 acres of pristine terrestrial habitat.\(^{349}\) Long-term, cumulative operations at the mine, planned for at least 78 years, is estimated to permanently and directly destroy between 218.8 to 407.2 linear miles of streams,\(^{350}\) 43.75 linear miles of salmon streams,\(^{351}\) 15,903 acres of wetlands,\(^{352}\) and nearly 30,000 acres of pristine terrestrial habitat.\(^{353}\) Permanently and directly, it will also result in fish and wildlife habitat fragmentation and long-term degradation from development of the mine site, transportation corridor(s), ferrying activities, and port site(s), and up to five pipelines. Moreover, as described *infra* Sections IV(B) (adverse impacts) and V(H)(13) (hard look at fish and aquatic resources), PLP’s survey and modeling methodologies greatly underestimate fish habitat in the Project area.\(^{354}\)

The discharge of dredged or fill material associated with PLP’s proposed Project – under both the short-term 20 year project and cumulatively under the 78-year project – will directly result in unprecedented loss of fish and wildlife habitat in Alaska, loss of wildlife breeding, nesting, and foraging areas, loss of escape cover and travel corridors and landing areas, and loss of preferred food sources for both resident and transient wildlife. Indirectly, the cascading impacts of reduced salmon populations in Bristol Bay headwaters will lead to

\(^{349}\) Draft EIS, at page 4.22-33, Table 4.22-10.

\(^{350}\) Attached Appx. E, at page 8. Albert, Dave M., *Direct loss of salmon streams, tributaries, and wetlands under the proposed Pebble Mine compared with thresholds of unacceptable adverse effects in the EPA Proposed Determination pursuant to Section 404(c) of the Clean Water Act* (June 21, 2019)

\(^{351}\) Draft EIS, p. 4.24-37 (“At the mine site, an additional 35 miles of anadromous stream habitat would be lost in the SFK and UTC watersheds…”).

\(^{352}\) Draft EIS, p. 4.22-39 to 40 (“The total number of wetlands potentially affected under this scenario would amount to an additional 12,445 acres.”).

\(^{353}\) Draft EIS p. 4.22-39. Note that elsewhere in the Draft EIS, the Army Corps says the expanded mine site footprint is 34,790 acres.

\(^{354}\) See also, attached Appx. E pages 430 to 1047 for expert reviews of the limitations of PLP’s descriptions and methodologies to describe aquatic and fish habitat.
reduced nutrient availability for the complex food web and would have far-reaching effects on many species. Cumulative effects to fish and wildlife over long time scales, even from the 20-year mine proposal only, will be widespread across the entire Nushagak and Kvichak ecosystems and watersheds.355

The widespread habitat destruction from PLP’s proposed Project will result in noticeable changes in fish and wildlife populations and quantity, as already analyzed and concluded by EPA, DOI, and USFWS. Because, as these agencies have determined, the proposed Pebble Mine Project could have unacceptable adverse effects on fish and wildlife populations – indeed on the world’s most significant and important sockeye salmon population – the proposed Project is contrary to the public interest.

**Fish – Salmonids and Resident.** The proposed Pebble Mine Project under the 20-year scenario would destroy nearly 4,000 acres of wetlands, 8.87 linear miles of anadromous fish habitat, and 20 miles of resident fish streams. The 78-year plan, is estimated to permanently and directly destroy between 218.8 to 407.2 linear miles of streams,356 43.75 linear miles of salmon streams,357 15,903 acres of wetlands,358 and nearly 30,000 acres of pristine terrestrial habitat.359 As found by the EPA, this level of impact would unacceptable adverse effects to the Bristol Bay salmonids and resident fish.

**Wildlife – Generally.** The EPA and Department of Interior (DOI) have expressed a range of concerns about the proposed Pebble Mine Project’s impacts to wildlife, both from direct impacts to wildlife and indirect impacts to wildlife through cascading impacts on healthy salmon and resident fish populations. The best available science on this issue is contained in the EPA BBWA and its Appendix C—Wildlife Resources of the Nushagak and Kvichak River Watersheds, Alaska and should be the starting point for analysis of impacts within the Corps’ Public Interest Review.

Direct impacts to wildlife from mining the Pebble deposit were not assessed in EPA’s BBWA;360 however, the BBWA Appendix C, also published separately as a USFWS

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356 Attached Appx. E, at page 8. Albert, Dave M., *Direct loss of salmon streams, tributaries, and wetlands under the proposed Pebble Mine compared with thresholds of unacceptable adverse effects in the EPA Proposed Determination pursuant to Section 404(c) of the Clean Water Act* (June 21, 2019).

357 Draft EIS, p. 4.24-37 (“At the mine site, an additional 35 miles of anadromous stream habitat would be lost in the SFK and UTC watersheds…”).

358 Draft EIS, p. 4.22-39 to 40 (“The total number of wetlands potentially affected under this scenario would amount to an additional 12,445 acres.”).

359 Draft EIS p. 4.22-39. Note that elsewhere in the Draft EIS, the Army Corps says the expanded mine site footprint is 34,790 acres.

360 BBWA at page ES-4 (“Direct effects of mining on Alaska Natives and wildlife are not assessed.”).
publication, contains a compilation of the best science and information related to brown bear (Ursus arctos), moose (Alces alces gigas), caribou (Rangifer tarandus), wolf (Canis lupus), waterfowl, bald eagle (Haliaeetus leucocephalus), shorebirds, and landbirds in the Bristol Bay region of Alaska, with a focus on the Nushagak and Kvichak watersheds. The report describes: habitat use, food habits, behavior, interspecies interactions, productivity and survival, populations, subpopulations, genetics, human use and interactions, and management for wildlife with a focus on the Nushagak and Kvichak watersheds. It describes the relationships of these wildlife species (brown bear, moose, caribou, wolf, and bald eagle) or species guilds (waterfowl, shorebirds and landbirds) with salmon. This report should be used for the Corps’ required analysis of impacts to wildlife in the Public Interest Review.

Regarding direct impacts to wildlife, following the DOI-USFWS 2013 report on wildlife resources of the Nushagak and Kvichak River watersheds, on September 12, 2014 DOI made comments to the EPA in accordance with its authorities under the Migratory Bird Treaty Act of 1918, Bald and Golden Eagle Protection Act of 1940, Alaska National Interest Lands Conservation Act (ANILCA) of 1980, Anadromous Fish Conservation Act of 1965, and the Fish and Wildlife Coordination Act of 1934. According to DOI, and based on its “technical expertise in fisheries and wildlife management, hydrology, cultural resources, environmental toxicology, and subsistence use management,” there is a “risk of harm to fish and wildlife resources, within and downstream of the Pebble Deposit Area, from direct impacts of mining and tailings disposal and from potential drainage of acid leachate and effluent from tailings deposits.” In its letter, DOI notes that “the Bristol Bay watershed is an unparalleled area of globally-significant biological and ecological value … provid[ing] intact, connected habitats that maintain the productivity of the entire ecosystem, including world-class salmon populations and numerous other fish and wildlife species.” DOI agreed with EPA that “significant impacts described by the presented mine scenarios are reasonably likely to extend beyond the mined area and affect overall ecosystem health.”

In order to protect fish and wildlife resources from the direct impacts of mining the Pebble Deposit, DOI supported EPA’s 404(c) restrictions “to avoid unacceptable adverse effects on fishery areas, which in turn would help protect world-class salmon populations, abundant wildlife and recreational resources, and subsistence uses.” Moreover, DOI explicitly agreed with the conclusions of EPA that “the potential range of available mitigation

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362 Attached Appx. F. Letter from Pamela Bergmann, Regional Environmental Officer – Alaska, to U.U. Env’t Protection Agency (Sept 12, 2014), at page 1.
363 Attached Appx. F. Letter from Pamela Bergmann, Regional Environmental Officer – Alaska, to U.U. Env’t Protection Agency (Sept 12, 2014), at page 2.
364 Id.
365 Attached Appx. F. Letter from Pamela Bergmann, Regional Environmental Officer – Alaska, to U.U. Env’t Protection Agency (Sept 12, 2014), at page 1.
measures are not adequate to protect the watersheds from unacceptable risks associated with life-cycle operation of large-scale mining of the Pebble Deposit.\textsuperscript{366}

Regarding \textit{indirect} impacts to wildlife, according to the EPA’s BBWA “Because wildlife in Bristol Bay are intimately connected to and dependent on these and other fishes, changes in these fisheries are expected to affect the abundance and health of wildlife populations.”\textsuperscript{367}

As EPA described in the BBWA:

Changes in the occurrence and abundance of salmon have the potential to change animal behavior and reduce wildlife population abundances. The mine footprints would be expected to have local effects on brown bears, wolves, bald eagles, and other wildlife that consume salmon, due to reduced salmon abundance from habitat loss and degradation in or immediately downstream of the mine footprint. Any of the accidents or failures evaluated would increase effects on salmon, which would further reduce the abundance of their predators. The abundance and production of wildlife also is enhanced by the marine-derived nutrients that salmon carry upstream on their spawning migration. These nutrients are released into streams when the salmon die, enhancing the production of other aquatic species that feed wildlife. Salmon predators deposit these nutrients on the landscape, thereby fertilizing terrestrial vegetation that, in turn, provides food for moose, caribou, and other wildlife. The loss of these nutrients due to a reduction in salmon would be expected to reduce the production of riparian and upland species.\textsuperscript{368}

As explained throughout this comment letter, nothing in the 404 permit application from PLP undermines the conclusions of EPA’s BBWA, indeed with a mine plan larger than that assessed by EPA’s smallest scenario and closest to EPA’s mid-size mine scenario, the 404 permit application reaffirms EPA’s conclusions. With DOI concurring with EPA’s conclusions regarding impacts to wildlife, the record before the Corps shows the proposed Pebble Mine Project would have substantial adverse effects on wildlife. Therefore, due to direct and indirect loss and damage to wildlife populations and habitat, the proposed Pebble Mine Project is contrary to the public’s interest in “the conservation of wildlife resources.”

\textit{Wildlife – Caribou.} The Bristol Bay watershed supports a substantial and healthy caribou \textit{(Rangifer tarandus granti)} population. As explained by EPA in the BBWA:

Caribou feed in open tundra, mountain, and sparsely forested areas and can travel for long distances. The Nushagak and Kvichak River watersheds are primarily used by caribou from the Mulchatna herd, one of 31 caribou herds found in Alaska. The Mulchatna herd ranges widely through the Nushagak

\textsuperscript{366} Attached Appx. F. Letter from Pamela Bergmann, Regional Environmental Officer – Alaska, to U.U. Env’t Protection Agency (Sept 12, 2014), at page 4.

\textsuperscript{367} BBWA at page ES-2.

\textsuperscript{368} BBWA at page ES-25 to ES-26.
and Kvichak River watersheds, but also spends considerable time in other watersheds. It numbered roughly 200,000 in 1997 but had decreased to roughly 30,000 by 2008 (Valkenburg et al. 2003, Woolington 2009). Recent surveys reported only a few caribou near the Pebble deposit area and potential transportation corridor (PLP 2011). However, caribou populations and ranges in the Bristol Bay region fluctuate significantly over time, and in previous years the herd was much larger and there was higher density use of the Pebble deposit area (PLP 2011).  

As recently explained by ADF&G, the proposed Pebble Mine Project presents clear threat of impacts to caribou populations in the area, and any attempt in the Draft EIS to conclude otherwise is not supported by scientific literature:

Caribou use in these areas does occur and caribou habitat exists in these areas; and more extensive use by caribou may have occurred in the past or occur in the future. The conclusion that “no behavioral disturbance impacts on the population (such as shifting migration routes or patterns) are expected to occur” is unsupported. Information in the EIS and literature clearly show that disturbance will occur at the mine site, transportation corridor and other project features should caribou try to use the area.

In addition, ADF&G recently noted the potential for the proposed Pebble Mine Project’s newly-proposed southern transportation corridor to negatively impact caribou herds and subsistence activities there:

localized herds that do inhabit parts of the transportation corridor and port site, such as the herd in the area south and east of Kokhanok, in the higher country around Kukaklek and Nonvianuk Lakes, and east to the coast. In 2018, ADF&G observed caribou at Chenik Lake, about 5.5 miles from the proposed port site; and historically caribou have occasionally been observed within the McNeil River State Game Sanctuary south of there.

ADF&G’s observation is confirmed in the Bristol Bay and Kenai Area Plans governing the area around the southern transportation corridor.

Caribou is an important subsistence food for Bristol Bay residents, with upwards of 88% of residents consuming caribou meat. During NEPA scoping, the Corps heard from many

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369 BBWA at page 5-33.
370 Comment Response Matrix, State of Alaska Comments on Pebble Project Preliminary Draft EIS, Section 4.23, comment no. 18, page 10.
371 Comment Response Matrix, State of Alaska Comments on Pebble Project Preliminary Draft EIS, Section 3.23, comment no. 9, pages 3-4.
372 BBWA at page 5-35 (citing Ballew et al. 2004).
Bristol Bay residents concerned with impacts from Pebble Mine activities on the Mulchatna Caribou herd. Indeed, as noted by EPA “some tribal Elders in the Nushagak and Kvichak River watersheds believe that mining exploration has contributed to avoidance of the Pebble deposit area (Brna and Verbrugge 2013).” Caribou are also an important prey species for wolves and brown bears and impacts to caribou populations would have cascading impacts on other predator wildlife populations.

**Wildlife – Migratory Birds.** The importance of the Pebble Deposit Area and downstream habitat for wildlife resources, including migratory birds, is summarized in Brna and Verbrugge (2013) and Woody ed (2018). In support of EPA’s use of 404(c) restrictions, DOI specifically cites the importance of protecting birds from the impacts of mining the Pebble deposit:

Many species of waterfowl nest and raise broods in waters of the upper Nushagak and Kvichak watersheds where the Pebble Deposit Area is located. These birds benefit from the enhanced food-web productivity provided by the import of marine nutrients by salmon. Several species of ducks also feed directly on salmon and their eggs within and downstream of the proposed mine during fish spawning seasons, as well as on juvenile salmon throughout the year. Additionally, more than 100,000 king eiders use the Kvichak shoals during migration, where salmon carcasses enrich food resources for this and other species of seaducks, shorebirds, and other migratory birds. The Proposed Determination would reduce risks to waterfowl populations by conserving their habitat and food resources.

At least 30 species of shorebirds use the Bristol Bay watershed during their breeding and migration. Many nest in upland areas and along rivers, streams, wetlands, lakes, and ponds within and downstream of the Pebble Deposit Area. Hundreds of thousands of shorebirds that nest across Alaska gather and feed in the major estuaries of the Nushagak and Kvichak rivers during fall and spring migrations. The Proposed Determination would reduce risks to water quality, nutrient cycling, and sediment transport downstream of the mine and tailings storage areas and protect the estuarine habitat on which the shorebird populations rely.

Bald eagles nest and feed along the coast and along all of the major salmon spawning rivers in the Bristol Bay region. The Pebble Deposit Area also supports relatively high numbers of golden eagles. While no comprehensive surveys have been conducted for nesting golden eagles, surveys in portions of the Nushagak and Kvichak watersheds have documented high nesting densities of bald eagles. The relatively high bald eagle densities of the Bristol

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373 See, e.g., Draft EIS Appendix K, at page K3.1-6.
374 BBWA at page 5-33.
375 BBWA at page 12-5.
Bay region are supported primarily by salmon, particularly during the nesting season. The Proposed Determination would provide direct protection for eagles nesting in the proposed mining area and would help protect eagles that nest and feed downstream of the proposed mine project.

4. Water Quality (33 C.F.R. § 320.4(d))

The public interest review regulations require consideration of whether an activity requiring a Corps permit will comply with “applicable effluent limitations and water quality standards, during the construction and subsequent operation of the proposed activity. The evaluation should include consideration of both point and non-point sources of pollution.”\(^{376}\) Should the State provide certification of compliance under section 401 of the Clean Water Act, that certification “will be considered conclusive with respect to water quality considerations unless the Regional Administrator, Environmental Protection Agency (EPA) advises of other water quality aspects to be taken into consideration.”\(^{377}\)

No water quality certification has been provided by the State of Alaska. However, more importantly, the Regional Administrator, EPA Region X has expressed grave concerns with the ground water and surface water quality impacts which would result from the operation of Pebble Mine.\(^{378}\) As detailed below, EPA continues to express concerns with water quality exceedances, and the Draft EIS admits that exceedances are possible. Moreover, the high rate of proposed waste treatment—untested in mining operations around the world—enhances this risk. In light of the information described in PLP’s permit application and by its contractors, water quality exceedances will undoubtedly occur at the Pebble Mine Project. And moreover, these impacts would be adverse to important aquatic life and pristine waters that support the salmon the people of Bristol Bay depend upon for their livelihoods and culture. Therefore, the project is contrary to the public’s interest.

**PLP Water Treatment Proposal and Elevated Metals.** PLP is proposing to treat by far the highest amount of water at any mine in Alaska, and indeed likely the world. The proposed combined treatment at the two proposed Pebble WTPs is 20,600 gallons per minute.\(^{379}\) According to PLP’s contractors, this rate of treatment is between 4 to 13 times the amount of other mines in Alaska.\(^{380}\)

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\(^{376}\) 33 C.F.R. § 320.4(d).

\(^{377}\) Id.

\(^{378}\) See, generally, Proposed Determination of the U.S. Environmental Protection Agency Region 10 Pursuant to Section 404(c) of the Clean Water Act Pebble Deposit Area, Southwest Alaska (“Proposed Determination”). Further proceedings with regard to the Region X’s Proposed Determination have been stayed consistent with the terms of a Settlement Agreement entered into by the United States and Pebble. Pebble Limited Partnership v. EPA. https://www.epa.gov/sites/production/files/2017-05/documents/pebble-settlement-agreement-05-11-17.pdf (last visited April 19, 2019). However, Region X has not withdrawn the Proposed Determination.

\(^{379}\) HDR, Pebble Project Water Treatment Process – Benchmark Update (Dec. 6, 2017), page 1.

\(^{380}\) Id.
The following table summarizes the water treatment processes and capacities for each mine:

<table>
<thead>
<tr>
<th>Mine</th>
<th>Gallons per Minute</th>
<th>Process/Equipment</th>
<th>Pebble vs others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pebble Mine Water Treatment Plant (WTP) (proposed)</td>
<td>20,600 (combined based on two proposed WTPs)</td>
<td>chemical precipitation, filtration, high-pressure membranes filtration, and biological selenium removal</td>
<td>--</td>
</tr>
<tr>
<td>Kensington Mine WTP</td>
<td>1,500</td>
<td>Co-precipitation</td>
<td>Pebble would process <strong>13.7 times</strong> that of Kensington</td>
</tr>
<tr>
<td>Greens Creek Mine WTP</td>
<td>2,500</td>
<td>Co-precipitation</td>
<td>Pebble would process <strong>8.2 times</strong> that of Greens Creek</td>
</tr>
<tr>
<td>Red Dog Mine WTP</td>
<td>4,600</td>
<td>Chemical precipitation</td>
<td>Pebble would process <strong>4.5 times</strong> that of Red Dog</td>
</tr>
<tr>
<td>Donlin WTP (proposed)</td>
<td>4,750 (max. capacity)</td>
<td>Oxidation, clarification, and filtration</td>
<td>Pebble would process <strong>4.3 times</strong> that proposed for Donlin</td>
</tr>
</tbody>
</table>

In addition, according to PLP’s own consultants “high-capacity WTPs [such as the one proposed] are in use around the world, *albeit not in the mining industry*.” The Draft EIS admits that water quality exceedances are possible at point sources from WTPs.

As noted by the Corps, PLP’s proposal will consist of water that must be treated for “elevated levels of aluminum, arsenic, beryllium, cadmium, copper, lead, manganese, mercury, molybdenum, nickel, selenium (a metalloid), silver, and zinc in exceedance of the most stringent WQC.” As noted by EPA in its NEPA scoping letter to the Corps: “Water quality is one of the EPA’s principal concerns at mine facilities due to the potential for acid generating and metal-leaching waste materials (ore, waste rock, tailings, pit walls) that are exposed to the environment and require management over long periods of time. In addition, road construction and operation have the potential to contribute a significant quantity of sediment to streams.”

In particular, EPA was concerned that “mercury and selenium discharges would exceed water quality limits.”

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383 Draft EIS at page 4.18-5 (“over the life of the mine, it is possible that APDES permit conditions may be exceeded for various reasons (e.g., treatment process upset, record-keeping errors) as has happened at other Alaska mines.”).
384 Draft EIS, Executive Summary page 71.
385 Letter from EPA to Army Corps (June 29, 2019), Enclosure 1 at page 9.
quality standards at closure.”386 “For mercury (Hg), the applicable water quality criteria is 12 ng/L (see K3.18 Table 1); however much if not all of the analysis performed in SRK 2011a had detection limits for Hg between 50 and 100 ng/L….water quality predictions are shown to exceed WQS for Hg in several instances.”387 The Draft EIS “shows that discharge water quality is predicted to exceed water quality criteria for mercury and selenium. Because of these exceedances, the conclusion that the WTP processes are expected to be effective is not accurate.”388

Finally, the Draft EIS describes the elevated levels of metals and other pollutants expected at the mine pit during closure and post-closure:

In terms of magnitude and extent, pit lake water quality predictions for various closure and post-closure time periods indicate that hardness and trace metals (aluminum, antimony, arsenic, cadmium, copper, iron, mercury, manganese, molybdenum, nickel, lead, selenium, and zinc) in near surface (upper 30 feet) pit lake water would exceed discharge limits. Pit lake pH values are predicted to be slightly alkaline (7.6 to 8.2). At these pH values, the concentrations of some of the metals (aluminum, cadmium, copper, iron, mercury, manganese, nickel, lead, and zinc) may be reduced via precipitation, adsorption, or complexation (which was not accounted for in the model). However, several metals form oxyanions (arsenic, molybdenum, antimony, and selenium) are likely mobile at these pH values. Therefore, it would be important to continue to maintain the pit lake as a hydraulic sink in perpetuity to control releases of these (and possibly other) metals to the environment.”389

**Copper and Other Metals in Leachate.** In the Proposed Determination, the Regional Administrator identified copper as “the primary contaminant of concern with regard to water quality, both because it is the major resource metal and because it is particularly toxic to marine organisms.”390 The Regional Administrator also made the following findings with regard to the water quality impacts of planned mining operations associated with the Pebble deposit, specifically addressing copper toxicity:

Uncollected leachate from waste rock piles and the TSFs could enter area waters via either surface or shallow subsurface flow. Leachate that drains to shallow aquifers would reemerge via upwelling through the water body substrate. In the Pebble 2.0 and 6.5 stage mines, the receiving waters for uncollected leachate from the waste rock

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386 Pebble Project Comment Response Matrix, EPA Comments on Preliminary Draft EIS, Section 4.18, comment no. 72.
387 Pebble Project Comment Response Matrix, EPA Comments on Preliminary Draft EIS, Section 3.18, comment no. 10.
388 Pebble Project Comment Response Matrix, EPA Comments on Preliminary Draft EIS, Section 4.18, comment no. 31.
389 DEIS at page 4.18-17.
390 PD at p. 4-52.
piles would be in the upper reaches of the SFK and UTC; some leachate would also enter UTC through interbasin transfer (EPA 2014: Chapter 8). TSF leakage and releases would be to the NFK watershed in the Pebble 2.0 stage mine and to both the SFK and NFK watersheds in the Pebble 6.5 stage mine. TSF leakage and releases would convey both leachate and ore processing chemicals (EPA 2014: Tables 8-1 and 8-3). Aquatic biota downstream of the mine would be directly exposed to contaminants in discharged waters. Aquatic insects would be exposed in all juvenile stages, which constitute most of their life cycles. Benthic invertebrates and fish eggs could be exposed to a range of concentrations, from undiluted to highly diluted leachate (EPA 2014: Chapter 8).

Whereas copper loading from the Pebble 0.25 stage mine would affect only streams that already have naturally elevated levels of copper—and would either not, or only minimally increase those background levels—the Pebble 2.0 and 6.5 stage mines would substantially increase copper in streams spanning all three watersheds. As shown in Table 4-9, the BBA estimates that, even during routine operations, discharges from the Pebble 2.0 stage mine could exceed BLM based copper criteria in a total of 39.1 miles (62.9 km) of streams in the SFK, NFK, and UTC watersheds (EPA 2014: Table 8-19). The total length of streams with chronic copper toxicity would go down slightly under the Pebble 6.5 stage mine, because the uppermost part of the affected SFK reach would be converted to a waste rock pile. Estimated impacts are conservative in that they do not include ungauged tributaries and do not include effects in any mixing zones or upwelling areas of contaminated water.

In the upper 13.9 miles (22.4 km) of the SFK, copper levels during routine operation of the Pebble 2.0 stage mine could be high enough to generate measurable effects on fish, including fish kills in the uppermost reaches. Coho salmon spawn or rear in more than 98% of the streams that would have some level of fish toxicity under the Pebble 2.0 stage mine; Chinook and sockeye salmon also use a substantial proportion of those streams (Johnson and Blanche 2012). Although the uppermost affected reach of the SFK would be converted to a waste rock pile in the Pebble 6.5 stage mine, effects on fish would extend farther downstream and cause some level of toxicity in 31.8 miles (51.2 km), including almost the entire SFK.[FN 45] Copper would be at a concentration sufficient to kill rainbow trout and other salmonids in the upper 7.3 miles (11.7 km) of the remaining SFK downstream of the mine. Rearing coho, Chinook, and sockeye salmon would be affected in this reach. Acute and chronic effects of copper would affect eggs, fry, smolts, and returning salmon; chronic effects may have different levels of toxicity for different life stages. Dolly Varden, Arctic grayling, northern pike, burbot, and slimy sculpin would also be affected.

Downstream of the acutely toxic reaches of the SFK, levels sufficient to cause habitat avoidance would affect chum salmon, as well as rainbow trout, round whitefish, Arctic Alaskan brook lamprey, threespine stickleback, and ninespine stickleback. Copper would also affect fish in the 4.0 mile (6.4 km) UTC tributary that receives interbasin transfers from the SFK, resulting in concentrations sufficient to cause fish
to avoid the habitat. Dolly Varden are widespread in this tributary, and the lower end also supports both spawning and rearing sockeye, rearing coho and Chinook salmon, rainbow trout, and Dolly Varden. In total, coho, Chinook, sockeye, and chum salmon would each lose more than 19 miles (31 km) of habitat to copper effects under the Pebble 6.5 stage mine.

In the long-term, acute toxicity to vertebrates can result in extirpation of populations. Eradication of fish from and long-term reductions in productivity and diversity of streams severely affected by mine operations have been documented in the past, even where dilution has lessened impacts (Marchand 2002, Jennings et al. 2008). Studies have not yet documented a relationship between effects on fish olfaction and effects on fish populations, but it is reasonable to expect such consequences (DeForest et al. 2011). For both the Pebble 2.0 and 6.5 stage mines, it is reasonable to expect that copper effects would significantly impair fish spawning success, and consequently productivity, in substantial segments of the SFK.

Beyond the stream reaches in which copper concentrations would be toxic to fish, levels would still be toxic to invertebrates (Table 4-9). [fn46] Under the Pebble 2.0 stage mine, copper would be at levels toxic to invertebrates in the entire SFK mainstem (33.7 miles [54.2 km]); most of the NFK tributary that drains the TSF (1.4 miles [2.3 km]); and the UTC tributary that receives interbasin transfer from the SFK (4.0 miles [6.5 km]). Fish within those reaches include juvenile coho and Chinook salmon, as well as Dolly Varden, Arctic grayling, and slimy sculpin (Johnson and Blanche 2012, ADF&G 2013).

In the Proposed Determination, the Regional Administrator made specific finding with regard to the potential for seepage from tailings storage facilities (TSFs) reaching surface waters. He concluded:

**The mine TSFs would presumably incorporate seepage collection systems, but it is realistic to expect that leachate would escape the systems, particularly since, as with the waste rock piles, NDM’s preliminary plans indicate that the TSFs would be unlined** (Ghaffari et al. 2011). The BBA estimates TSF leakage of roughly 1,900 acre-feet (2.4 million m3) for the Pebble 2.0 stage mine TSF and roughly 6,000 acre-feet (7.2 million m3) for the three Pebble 6.5 stage mine TSFs (EPA 2014: Tables 7-17 and 7-18).

It is necessary and appropriate to begin an evaluation of the Regional Administrator’s findings by observing that the Pebble 2.0 alternative is roughly equivalent in size to the Pebble Mine proposal considered in the DEIS. It is also necessary to address certain material differences in the features proposed to be constructed at Pebble Mine. However, it is also essential to acknowledge that the Regional Administrator expressed serious concerns about

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391 PD, pages 4-53 – 4-56.
392 PD, page 4-53 (emphasis added).
the potential for seepage reach downstream surface waters from tailings storage facilities similar to the ones proposed in the applicant’s plans.

Changes in the proposed project since PLP’s initial application to the Corps in December 2017 may impact the Regional Administrator’s water quality analysis. Material differences that need to be reconciled against the Preliminary Determination findings include, but are not limited to:

1. The milling rate increased to 180,000 tons per day from 160,000 tons per day. The longterm ore stockpile was removed, and mining would take place over the full 20 years, rather than 14 years with 6 years of stockpile reclaim. The peak annual mining rate reduced as a result;
2. The tailings storage management plan changed from a single facility with separate cells for storage of bulk and pyritic tailings to two separate facilities in different drainages, one for storage of bulk tailings and one for storage of pyritic tailings and potentially acid generating (PAG) waste rock.
3. The pyritic tailings (and PAG waste rock) would now be placed into the pit lake (i.e., the water that would accumulate in the open pit as a lake at closure); and
4. The main water management pond was made larger and moved to a new location.393

Although the Regional Administrator’s findings assumed a single, unlined tailings storage facility, PLP’s permit application, as amended, proposes two separate facilities for the bulk and pyritic tailings, and indicates that while the bulk tailings storage facility will be unlined, the pyritic TSF would be fully lined.

Pyritic tailings “are comprised of potentially acid-generating [PAG] finely ground rock material containing the naturally occurring mineral pyrite that remains after economic minerals have been extracted through mineral processing at the mine site.”394 PLP indicates that all of the PAG pyritic tailings and PAG waste rock “would be stored in a separate impoundment that is fully lined with HDPE and equipped with underdrains. Tailings would be placed on top of the liner and covered with water to minimize oxidation and the potential release of acidic contact waters to the environment.”395 As discussed in Section V.E.5. below, it is questionable that PLP will proceed to keep the pyritic tailings separate for the life of the mine and move them back into the pit at closure, as their original 404 permit application had a joint pyritic and bulk tailings facility separated into two cells.

Bulk tailings “are primarily composed of non-acid-generating [NAG] finely ground rock material that remains after economic minerals and most pyritic materials have been extracted through mineral processing at the mine site.”396 PLP’s current permit application indicates

393 Draft EIS, p. 2-9.
394 Draft EIS, p. 2-21, footnote 5.
395 Draft EIS, p. 4.17-15 (emphasis added).
396 Draft EIS, p. 2-21, footnote 5.
that most bulk tailings facilities would be unlined, with the exception of the upstream face of the south embankment:

Bulk flotation tailings primarily composed of non-acid generating finely ground rock material generated during milling operations would be stored in a bulk tailings storage facility (bulk TSF) at the mine site. With the exception of the upstream face of the bulk TSF south embankment, which would be lined with HDPE, the bulk TSF would be unlined, and the bulk TSF main embankment would operate as a flow-through structure draining towards the north. The bulk TSF would be constructed in the NFK watershed, with a series of embankments to impound the tailings and entrained and ponded water. A drain system at the main embankment and a grout curtain at the south TSF embankment would manage seepage water draining through the main embankment from the tailings. The thickened bulk flotation tailings discharged to the TSF would settle, and water would collect in a pond on top of the tailings.397

The EPA recommended that the Corps provide “the criteria that will be used to distinguish NPAG and non-metal leaching (ML) waste from PAG and ML waste and discuss how the NPAG/PAG determinations will be made during active mining. These details are typically provided in EISs for mining projects and are necessary to evaluate the effectiveness of the NPAG/PAG separation and potential environmental impacts from tailings and waste management.”398 The Corps does not include these criteria in the Draft EIS, reserving the specifics for later phases: “Waste rock is mined material with a mineral content below an economically recoverable level that is removed from the open pit. Waste rock would be segregated by its potential to generate acid. Controls would be used to distinguish PAG and ML waste from non-potentially acid generating (NPAG) and non-metal leaching (non-ML) waste. Examples of these controls are visual inspection, blast hole sampling, and bench mapping. The selection of such control would be made during detailed mine planning and design.”399 Nevertheless, no matter which criteria the Corps ultimately adopts, the Corps indicates that only the majority of the PAG will be disposed of in the lined facility, with no estimate as to what percentage of PAG will end up in the unlined bulk tailings facility.400

Moreover, there is one crucial finding of the Regional Administrator that remains highly relevant to assessing the water quality impacts of Pebble Mine as proposed on downstream waters, fish and wildlife. The Regional Administrator determined that it was appropriate to conclude that half of the leachate released by the waste rock facilities and the tailings storage facilities outside of the drawdown zone of the mine pit would escape the leachate collection system and be released to downstream water. This is due to “the area’s geological complexity and the permeability of surficial underlying layers would allow water to flow

397 Draft EIS, p. 4.17-14.
398 EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, p. 4, available at https://pebbleprojecteis.com/files/3482e979-5119-415a-8c6d-d01c1b34a880.
399 Draft EIS, p. 2-16.
400 Draft EIS, p., 2-21, fn 5.
between wells and below their zone of interception.” Proposed Determination at pp. 4-52 – 4-53.

EPA has substantial experience in addressing the difficulties hard rock mining facilities face with capturing leachate from waste rock and tailings storage facilities. In addition, substantial evidence is presented in these comments supporting the proposition that hard rock mining operations, particularly porphyry copper mines, consistently fail to capture mine leachate.

**Leakage from Lined and Unlined Facilities—Pyritic Tailings Storage Facility.** At the Pebble Mine site, the highly fractured geology makes highly unlikely that seepage from the bulk tailings storage facility, the pyritic tailings storage facilities, and the mine pit will be completely captured. The pyritic tailings storage facility (which will hold both pyritic tailings and potentially acid generating waste rock) will be lined. However, it is not reasonable to assume that such a tailings facility will not leak. Indeed, the design includes basin underdrains and other seepage control facilities to mitigate expected seepage. However, as set out in the BBWA, it is not reasonable to assume that all seepage will be captured by such facilities.

The Draft EIS explains that the pyritic tailings storage facility liner will leak, and admits that there will be long-term impacts to groundwater from the lined facility that may exceed historic values:

As described in Appendix K4.17, any liner leakage that reaches groundwater beneath the pyritic TSF is expected to flow north, with a small component migrating east, both of which would be captured by SCRs backed up by monitoring/pumpback wells that would continue to operate as long as necessary following decommissioning to intercept potential leakage (Knight Piésold 2018n). The pyritic tailings would be moved to the bottom of the open pit at the end of mining, and submerged in the pit lake to prevent oxidation. The pyritic TSF liner and embankments would be removed at closure, and the site reclaimed by removing impacted materials, regrading, and capping with growth media (Section 4.16, Surface Water Hydrology describes closure in greater detail) (Knight Piésold 2018d). Therefore, groundwater flow in this tributary drainage is expected to essentially return to pre-mining conditions post-closure (Section 4.16, Surface Water Hydrology). **Impacts to groundwater from the pyritic TSF facility would occur if the project is permitted and constructed, and would be long term, lasting until the facilities are removed during closure. The magnitude and extent of effects could slightly exceed historic seasonal variation, but would not extend beyond project component areas.**

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401 PD, pages 4-52 to 4-53.
402 Draft EIS, p. 4.17-15 (emphasis added).
The Draft EIS makes assumptions about the rate of leakage that assume liner integrity will be maintained for unspecified timelines, and provides no information on the effectiveness of the methods proposed to capture the leakage. The fate of liner leakage that reaches shallow groundwater beneath the pyritic TSF was modeled assuming a leakage rate of 1 liter/second (L/s) or about 30 gallons/acre/day (Knight Piésold 2018n) based on a composite liner system with excellent contact between the liner and subgrade (Giroud and Bonaparte 1989). Most of the liner leakage that reaches shallow groundwater at this rate is predicted to migrate northward. This flow would be effectively captured by the proposed downgradient SCP, which would contain a lined embankment, grout curtain, and pumpback wells (Piteau Associates 2018a). The model indicated that a small amount of seepage could migrate eastward from the pyritic TSF, which would either be captured by the eastern SCP or report to the pit, because part of this facility lies within the capture zone and zone of influence of the pit (Figure 4.17-2; Knight Piésold 2018n: Figure 5). Seepage flow to the south is not predicted to occur due to a groundwater divide located south of the south embankment. Regardless, the pyritic TSF south SCP would have the same seepage collection features as the north and east SCPs (Table K4.15-1). Liner leakage would also be mitigated by placing foundation drains beneath the liner to direct leakage flow towards the SCPs, as well as drains above the liner and under the tailings to collect waters for treatment and reduce the potential for a high head to develop on the liner (Knight Piésold 2018n).

EPA comments to the preliminary Draft EIS identified that multiple details necessary to corroborate a 100 percent capture rate of seepage from the pyritic TSF liners are missing from the Draft EIS. For example, the EPA recommended that the Draft EIS “describe the type of liner that would be used (material and thickness) as well as the construction and waste rock and tailings placement techniques that would occur to ensure liner integrity.” The Corps’ response was that it was “too early in the project” for to provide further detail on the liners, and that the liner type, material, and texture would be selected during the design stage. Despite deferring liner selection, the Draft EIS notes that liner materials may be vulnerable to cold and wet climates and to chemical compatibility with the different types of pyritic and PAG waste rock, and thus that future liner type and material selections would need to be made in accordance with industry standards and latest published data. The Draft EIS did not indicate why the latest data available on the subject at the time the draft EIS was released, including the Preliminary Determination, was insufficient.

404 EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, p. 9.
405 See id. See also draft EIS, p. 2-21.
406 EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, p. 9.
Furthermore, it is unclear how open questions as to the integrity of the liner reconcile with the leakage rates relied upon by the applicant’s models (as sited in Appendix K4.17), which assume “excellent contact” between the generic liner and subgrade. Without providing type and material selection of the liner type in the Draft EIS, analysis of how these selections would achieve the required “excellent” level of contact, detail on the likelihood of maintaining “excellent contact” over time given liner vulnerability to breaking, and an alternate rate of leakage should contact or liner integrity degrade overtime, the Draft EIS leaves open questions as to whether water quality would comply with public interest review regulations. Furthermore, the predicted direction of “most” of the leakage, a quantity that the Draft EIS does not define, is based upon a leakage rate requiring “excellent” conditions. Should the state of excellence fail to be achieved, or degrade over time, it is unclear how the stated predictions and assumptions regarding the direction of leakage flows and subsequent capture rates would impact water quality. The model predicts that a “small amount” of leakage—a value that is not quantified—would “effectively” be captured by an SCP or report to the pit, but the draft EIS does not specify the percentage of capture or the potential for leakage once it has reported to the pit.

Moreover, the Draft EIS does not address the designs, alignment, or reliability of the mitigation measures, such as foundation drains, drains above the liner, and drains under the tailings, over time, and it does not provide a precise timeline for the monitoring/pumpback wells “that would continue to operate as long as necessary following decommissioning to intercept potential leakage.” An operations time line defining “as long as necessary” is vague, and even if PLP were to meet it, the draft EIS does not include a long-term monitoring plan of the effectiveness of the capture systems. Taken together, these omissions do not support the Draft EIS’s conclusion that the extent of the impacts to groundwater will not reach beyond project component areas, and fail to reconcile with the Regional Administrator’s determination that water quality impacts to surface and subsurface waters will indeed extend beyond the project area.

Regarding the pyritic TSF liner, the Draft EIS provided only a “generic plan”:

a current generic plan would be that when the geomembrane has been placed and welded, it would be covered with a layer of crushed material, specified to ensure the particles would not penetrate the geomembrane. The layer would be of adequate thickness so that equipment used to place it did not damage the geomembrane. Another layer could then be placed over the first layer if further protection from run-of-mine waste rock is needed.

An additional protective layer was added by the Army Corps in response to cooperating agency concerns about the liners breaking due to ice and the pyritic TSF liner breaking due

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408 See Proposed Determination, pp. 4-52 – 4-53.
409 Draft EIS, p. 2-21.
to the placement of the waste rock.\textsuperscript{410} For the WMP, a protective layer was added to reduce the “high” risk of liner damage from ice hitting the geomembrane during spring break-up, causing leakage through the liner, leading to seepage gradients sufficient to initiate internal erosion of the embankment, overwhelming the seepage collection system and resulting in a release of untreated contact water.\textsuperscript{411} In addition, an ADNR Dam Safety representative identified that the lined WMP, given its long and high embankment, “may be unprecedented,” as most ponds of similar design and function are smaller and have lower embankment heights.\textsuperscript{412} The design of the geomembrane would need to “function under the maximum head of water that could be stored in the pond.”\textsuperscript{413} The EPA also recommended that the draft EIS clarify what type of liner would be used under the water management pond.\textsuperscript{414} The Corps responded that “it is too early in the project for PLP to have made these decisions.”\textsuperscript{415} Without design precedent, and with only “generic” plans, the draft EIS does not support an informed evaluation of water quality under the public interest review.

For the pyritic TSF, cooperating agencies recommended a protective layer be added to protect the liner from breaking from the placement of the waste rock. It was also suggested that PAG waste rock be placed in smaller loads. However, placement techniques were not specified in the draft EIS, only that: “Placement of the waste rock on the geomembrane would be accomplished in a similar way as used in placing ore onto heap leach pads, which are widely used in the mining industry, and in placing protective rock over geomembranes worldwide in landfills and TSFs. Placement specifics and criteria would be in the installation specifications, Construction Quality Assurance and Construction Quality Control (CQA/QC) manual, and Operations and Maintenance (O&M) manual per the ADSP guidelines.”\textsuperscript{416} Given the unprecedented nature of the proposed project, reliance on past precedent and generic plans does not warrant Corps’ public interest conclusions.

Related, EPA requested that the Corps clarify whether storage of all potentially acid-generating (PAG) and/or metal leaching waste rock in the pyritic TSF and placement of that waste rock back into the open pit might action worsen water quality in the pit. The EPA recommended that the Corps provide additional clarification of where water quality would be improved by these measures, noting “that, depending on multiple factors having to do with time for placement of the wastes into the pit, how oxidized the PAG rock becomes while on the surface prior to placement, time for water cover to be sufficient, and amount of oxidation of acidic salts on pit walls and fissures that will influence pH, it is also possible that the pit water quality could be negatively impacted by placing this material into it.”\textsuperscript{417} An additional

\begin{footnotes}
\item[411] See EIS-Phase FMEA Workshop, at 1, 2 (Oct. 24–25, 2018).
\item[413] EIS-Phase FMEA Workshop, at 1 (Oct. 24–25, 2018).
\item[414] EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, p. 12.
\item[415] EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, p. 12.
\item[416] Draft EIS, p. 2-21.
\item[417] EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, p. 8.
\end{footnotes}
concern is that the draft EIS does not specify the criteria PLP will use to distinguish PAG rock NPAG rock, and how such criteria will determine which wastes are separated into which pit, and which wastes ultimately end up in the pit.

The Draft EIS indicates that placing waste rock back into the pit will improve “post-closure surface and groundwater quality by removing the requirement for perpetual management of runoff and seepage resulting from a separate aboveground waste rock storage facility. Storage of PAG materials in a subaqueous environment during operations and closure would eliminate oxidation and acid generation, thereby reducing the potential for development of acid rock damage (ARD).” 418 The Corps has not fully addressed EPA’s concerns. Due to the lack of detail on timelines and other critical parameters missing from the Draft EIS and the Corps 404 permit application analysis, the reduction of the “potential” risk cannot be quantified. Regardless of those and other deficiencies, perpetual management of runoff and seepage is still required even without a separate aboveground waste rock storage facility.

As to the effectiveness of the drainage system to capture leakage, the EPA recommended that the Corps include designs of the drainage system under the pyritic liner. The Corps’ response was that the underdrain configurations, numbers, and alignments would follow additional geotechnical field work in the pyritic TSF site area, 419 work that will not be completed until after the close of the Draft EIS comment period. Without geotechnical field work having been completed, the basis of the assumption provided in the Draft EIS that 100 percent of the seepage of the pyritic tailings facility is wholly unsupported.

In sum, the Corps provides insufficient detail on both the magnitude and extent of effects of the lined pyritic tailings facility on water quality, as well as on the effectiveness of the stated mitigation measures to capture 100 percent of the seepage.

**Leakage from Lined and Unlined Facilities—Bulk Tailings Storage Facility.** The bulk tailings storage facility is not proposed to be lined. It is also important to recognize that, according to the Corps, that the bulk tailings storage facility is not limited to only non-acid generating material. As set out in footnote 5, “[b]ulk tailings are primarily composed of non-acid generating finely ground rock material that remains after economic minerals and most pyritic material have been extracted through mineral processing.” 420 As disclosed in footnote 5, some unknown portion of the bulk tailings facility will consist of pyritic material. However, this material will be disposed of in an unlined facility, which is designed as a flow through facility for seepage water. 421 Similar to the pyritic tailings storage facility, the bulk tailings storage design also includes basin underdrains and other seepage control facilities.

418 Draft EIS, p. 5-13.
419 EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, p. 11.
420 Draft EIS, p., 2-21, fn 5.
421 Draft EIS, pp. 2-22 – 2-23.
The EPA recommended that the draft EIS specify whether the SCP would capture 100 percent of the seepage from the bulk TSF, and whether the drains would capture 100 percent of the seepage.\textsuperscript{422} The EPA also recommended that the draft EIS provide “a figure that shows the number of underdrains and alignment of the underdrain system below the TSF. These details are necessary to evaluate effectiveness of the system and potential groundwater impacts.”\textsuperscript{423} These details, however, are not included in the draft EIS. Similar to the Corps’ response to EPA’s identical question about the pyritic storage facility, the Corps makes unfounded conclusions of 100 percent seepage capture rates while noting that information necessary to make an informed evaluation of water quality impacts is unavailable. “The underdrains need to be sized and designed to capture 100% of the TSF seepage.”\textsuperscript{424} The Draft EIS indicates that “[l]ocations, alignments, configurations, sizes, capacities, and other details of the underdrains would be developed following more detailed site-specific geotechnical and geological investigations and observations made during the preliminary and detailed designs, in accordance with the ADSP guidelines.”\textsuperscript{425}

Furthermore, the EPA recommended that “the EIS describe how the main embankment [of the bulk TSF] would be designed, constructed, and operated to maintain both permeability and stability. We also recommend that the document discuss whether 100% of the water flowing through the embankment would be captured and how it would be captured.”\textsuperscript{426} The Draft EIS alludes to future designs, relying only on the promise of 100 percent capture, noting that “[t]he SCP and its feeder drains would be designed to capture the TSF seepage that would flow through, under, or around the main embankment (see Figure 2-8).”\textsuperscript{427} It is not possible to analyze how much water would actually be captured given that the Draft EIS is missing an actual capture design as well as a plan for how the effectiveness of such systems would be monitored over time.

Regardless, the EPA has consistently and continually recommended that the bulk tailings facility include a liner option, as is done for other mines in Alaska of similar size:

[W]e have not been convinced that the TSF dam and impoundment could not be engineered accordingly. We understand that including a liner may result in the need for a revised (water-retaining) embankment design. Seepage from the bulk TSF is predicted to exceed water quality standards for some parameters. The proposed action requires long-term post-closure collection and treatment of seepage from the bulk TSF. No alternatives are proposed to minimize seepage or reliance on long-term management of seepage. No information has been provided to demonstrate that the proposed seepage control system for the

\textsuperscript{422} EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, p. 8.
\textsuperscript{423} EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, p. 8.
\textsuperscript{424} EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, p. 8.
\textsuperscript{425} Draft EIS, p. 2-22.
\textsuperscript{426} EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, p. 8.
\textsuperscript{427} Draft EIS, p. 2-22.
TSF would collect all of the seepage, which could otherwise impact groundwater. Due to the potential for long-term groundwater impacts from uncollected seepage and the desire to reduce reliance on long term water management and treatment of TSF seepage, we continue to recommend that a liner be included. The Corps recently permitted the placement of a liner for the Donlin Gold Mine TSF, which is of similar size.\(^{428}\) However, the Draft EIS excludes this option. The Corps responded that “[a]dditional evaluation of the lined bulk TSF option was conducted by AECOM and additionally, PLP provided a memo explaining why they proposed an unlined facility. USACE has considered EPA and PLP documentation on the lined bulk TSF option and has decided to eliminate it from detailed consideration in the EIS. It is documented in Appendix B.”\(^{429}\) Appendix B to the Draft EIS notes the Corps’ conclusion that a liner “would increase overall adverse impacts because the liner would retain water in the bulk tails and increase the risk of embankment failure and tailings mobility.”\(^{430}\) Technologies that mitigate such risk “would increase costs” and “have not been proven and implemented on a similar scale.”\(^{431}\) As the Donlin example provides, an unlined bulk tailings facility is also not standard practice nor an option typically implemented at projects of similar scale. The Corps should explain why the proposed water treatment pond could not mitigate the accumulated water in a lined facility, as well as the additional seepage management required for effective management.

As set out in the BBWA, it is not reasonable to assume that all seepage will be captured by such facilities. The Draft EIS essentially concedes this point when it acknowledges that “[s]eepage water could also flow vertically downwards into deeper bedrock fractures.”\(^{432}\) However, the DEIS fails to quantify the potential volume of this anticipated release and provides no assessment of the foreseeable environmental impacts, including surface and groundwater quality degradation that could be predicted from such releases. The Corps needs to provide a credible assessment of the quantity and quality of leachate that will escape the tailings storage facilities and the impacts of such leachate on downstream surface and groundwater quality. The BBWA provides EPA’s expert opinion on the potential extent and impacts of such discharges. In its 404 permit analysis, the Corps should either apply EPA’s analysis of this issue to facilities currently proposed by the applicant, or explain its reasons for rejecting EPA’s approach and explain its own reasoning.

\(^{428}\) EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, pp. 34–35.

\(^{429}\) EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, pp. 34–35, available at https://pebbleprojecteis.com/files/3482e979-5119-415a-8cbd-d01c1b34a880. See also, draft EIS, App. B. EPA had not seen a revised version of Appendix B or a response to the comments that it had previously submitted regarding the TSF liner option prior to the release of the draft EIS, EPA, Pebble Project EIS Consolidated Comments Table, Chapter 2, p. 33, available at https://pebbleprojecteis.com/files/3482e979-5119-415a-8cbd-d01c1b34a880.

\(^{430}\) Draft EIS, p. B-74–75.

\(^{431}\) Draft EIS, p. B-74.

\(^{432}\) DEIS p. 4.17-14.
**Use of Waste Rock as Construction Material.** The Draft EIS indicates that the waste rock used as site construction material would only be “non-pit quarried rock, or non-acid generating (NAG) pit waste that is confirmed not to be neutral metal leaching,” stating:

PLP has determined from characterization of quarry materials planned for use in construction that they contain negligible sulfide minerals, are non-acid-generating, and contain trace element contents at levels comparable to globally typical values for unmineralized rock. PLP’s primary approach to selecting rock achieving the objective of meeting water quality criteria for metals and other parameters without treatment of runoff in perpetuity is to source construction materials from the quarries and test the rock operationally to confirm sulfur and element characteristics. Waste rock that is not suitable would be segregated and directed to the pyritic TSF for storage through operations, and placement in the open pit at closure.\(^{433}\)

The EPA recommended that the Corps clarify the characteristics of construction materials to be used and the timeline used to assess their non-waste properties: “We recommend adding information to the DEIS clarifying what is meant by ‘confirmed not to be neutral metal leaching,’ along with providing a time scale over which that ‘non-leachability’ is confirmed to be valid. We recommend that the DEIS describe the methods and criteria that would be used to determine if waste rock and quarry rock is NAG and non-metal leaching and evaluate the effectiveness of the methods/criteria.”\(^{434}\) Again, however, the Corps does not include a description of these methods and criteria, indicating that “the selection of controls to be used would be made during detailed mine planning and design.”\(^{435}\)

Given the potential for discharge from multiple project components, the Draft EIS does not provide sufficient information to provide a basis for countering the Regional Administrator’s conclusion that substantial quantities of process water will escape the mine site and surface in the watersheds of the Koktuli River and Upper Talarik Creek.

Discharges associated with seepage from waste rock storage facilities, tailings storage facilities, and mine pits consistently violate effluent limitations and water quality standards wherever they occur. It is not prudent or consistent with the public interest to assume that the risks associated with such discharges will not occur here.

However, this is exactly the flawed assumption that is made in the Draft EIS. The Draft EIS states that the impacts to surface water quality associated with Pebble Mine would consist of “the discharge of treated process and runoff water.”\(^{436}\) To accomplish this, the Draft EIS provides that “[a] primary design consideration would be to ensure the effective management

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\(^{433}\) Draft EIS, p. 5-13.

\(^{434}\) EPA, Pebble Project EIS Consolidated Comments Table, Chapter 5, pp. 7–8.

\(^{435}\) EPA, Pebble Project EIS Consolidated Comments Table, Chapter 5, p. 8.

\(^{436}\) Draft EIS p. 4.18-4.
of all contact water that would require treatment before release to the environment.”

To achieve this result, the mine operations would need to capture all seepage from Tailings Storage Facilities, Waste Rock Stock Piles, and the Mine Pit. This is precisely the result that the Regional Administrator’s Proposed Determination says will not be achieved.

The Regional Administrator’s conclusion has not been addressed, let alone rebutted, in the Draft EIS. This conclusion directly underpins the findings of noncompliance with water quality standards in the Proposed Determination. As such, this must be considered pursuant to the terms of 33 CFR 320.4(d).

**Selenium Discharges.** In addition to the issues associated with copper toxicity addressed above, the proposed project presents a significant threat to water quality due to selenium discharge and treatment issues. Selenium discharges can occur as a result of the proposed project through two pathways:

1. leachate from the waste rock piles and tailings storage facilities that is released without treatment because it is not captured by the mine’s seepage capture facilities; and
2. discharges exceeding water quality standards from wastewater that is inadequately treated.

Beyond the selenium-specific water quality issues, further water quality degradation as a result of efforts to treat process water for selenium. Specifically, warming of wastewater to facilitate selenium removal has the potential to degrade downstream fish habitat through increases to ambient temperature.

The Proposed Determination’s findings regarding the expected releases of uncaptured leachate are addressed above, as is the failure of the Draft EIS to properly address this issue. This analysis is incorporated here by reference. In any determination as to whether the proposed mine will comply with applicable selenium effluent limitations and water quality standards, the contribution of selenium from uncaptured and untreated leachate must be addressed.

In addition, selenium presents significant challenges with regard to treatment that are not properly disclosed or discussed. The Draft EIS suggests that the open pit treatment plant would rely on biological processes for selenium removal. The main treatment plant is expected to rely on nanofiltration through high pressure membranes to remove selenium and other salts. The DEIS identifies one issue with selenium management: the buildup of salt and selenium in the pyritic tailings, and suggests that either further design work and/or an

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437 Draft EIS p.4.18-3.
438 Draft EIS p. 4.18-4.
439 Id.
One major issue with this approach is that reliance on an undescribed adaptive management strategy offers no reliable information as to whether compliance with effluent limitations and water quality standards will be achieved. The Draft EIS discloses no information as to the tools that are available to address this problem, so it is impossible to meaningfully evaluate and comment with regard to the seriousness of this issue. Also, the Draft EIS does not disclose the extent of violations that will result should the planned treatment facilities be insufficient to address selenium treatment needs and the adaptive management plan prove ineffective. The Draft EIS should disclose the extent of violations that could result from failures in selenium treatment and the magnitude of the water quality impacts that would be expected to result from such violations.

A second major issue is that the treatment processes associated with selenium removal are not proven to be reliable and, as discussed in detail in the Draft EIS Appendix K are highly vulnerable to upsets under a variety of circumstances. For example, six major treatment process steps are discussed with regard to the main treatment plant. As to each of the steps, cautions are provided concerning the possibility of upsets. In addition, the final stage involves a treatment methodology that “is not regularly practiced” and has the potential to result in high TDS levels in the decant from the pyritic tailings storage facility.

While it is possible that, at times, this system may achieve compliance with discharge limits for selenium, the above discussion demonstrates that compliance with selenium limits cannot be assured. In light of this discussion, the Corps should include a discussion of the risks of treatment plant failure with regard to selenium.

**Temperature.** At least one, if not more, treatment process proposed by the applicant could require significant elevation to the temperature of the wastewater during treatment. Specifically, selenium treatment requires heated water and would produce effluent with increased water temperatures. Increased water temperature is a significant water quality issue with regard to fish habitat, particularly for salmonids. For example, “[w]ater temperature controls the metabolism and behavior of salmon and, if temperatures are stressful, fish can be more vulnerable to disease, competition, predation, or death.”

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440 Draft EIS p.4.18-5.
441 EPA Comments -Pebble Project Preliminary Draft EIS, Section 4.18 -Water and Sediment Quality, p. 9, Comment 17.
444 BBWA at page 8-59.
If the proposed treatment processes involve meaningful elevation of temperature, this needs to be analyzed so that potential impacts to fisheries can be discussed. In addition, should alterations to treatment processes needed to address failures in the treatment system potentially require elevating effluent temperature, this needs to be disclosed so that the potential impacts of these changes can be assessed.

The above discussion is not to suggest that the conclusions in the Proposed Determination should be accepted uncritically. As noted above, there have been material modifications to certain project features and the location of the mine pit which warrant consideration in determining the extent to which violations of water quality standards will result from the operation of the mine.

**Cumulative Impacts—Generally.** Two significant issues need to be addressed in addressing cumulative impacts to water quality from the applicant’s proposal. First, the Corps needs to analyze and disclose the cumulative water quality impacts of all of the discharges associated with the proposal. In addition, the Corps needs to analyze and disclose the cumulative water quality impacts associated with discharges that would result from development and operation of the 78-Year Expanded Mine.

**Cumulative Impacts—Applicant’s 1.44 Billion Ton Proposal.** Cumulative impacts to water quality associated with the applicant’s proposal include, but are not limited to:

- untreated copper discharges from uncollected seepage associated with mine facilities;
- copper loadings associated with the discharge of treated effluent from wastewater treatment facilities;
- untreated selenium discharges from uncollected seepage associated with mine facilities;
- selenium loads associated with the discharge of treated effluent from wastewater treatment facilities; and
- impacts to fisheries from elevated temperatures that may result from wastewater treatment processes

Information in the Regional Administrator’s Proposed Determination and in the BBWA can assist the Corps in properly assessing the extent of foreseeable degradation associated with the applicant’s proposal and its impacts on downstream aquatic resources, including but not limited to fisheries. The Corps currently fails to address these issues in any meaningful manner either individually or cumulatively, particularly given the concerns expressed by the Regional Administrator.

**Water Quality Cumulative Impacts—78-Year Expanded Mine.** The Draft EIS discloses that the mine expansion proposal would potentially lead to substantially increased impacts to surface water and groundwater:

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445 See Draft EIS p.4.18-5.
The estimated area of disturbance would be nearly tripled over the proposed project alone, based on projected infrastructure buildout at the mine site. The buildout would correspond to an increase in the magnitude and local extent of cumulative ground disturbance impacts potentially contributing to sedimentation and fill placement on substrate, with a duration increase of up to 98 [sic] years. The potential for cumulative impacts on surface water, groundwater, and sediment would increase substantially. Additional design features to capture and treat impacted water and waste streams would be necessary to manage mine site impacts.446

However, no effort is made to quantify these impacts except to note that the mine expansion would nearly triple the estimated area of disturbance. In fact, at the mine site, the area of disturbance would more than triple, with the area of disturbance increasing from 8,086 acres to 29,632 – more than 3.6 times the area of disturbance over the applicant’s preferred alternative.447 As with the analysis of the initial mine proposal, there is no acknowledgement of the likelihood of discharges of untreated contact water from seepage associated with the mine expansion.

The Regional Administrator’s Proposed Determination provides the most meaningful assessment available of the likely water quality impacts associated with an expansion of the proposed Pebble Mine Project. The Regional Administrator concluded:

Although the uppermost affected reach of the SFK would be converted to a waste rock pile in the Pebble 6.5 stage mine, effects on fish would extend farther downstream and cause some level of toxicity in 31.8 miles (51.2 km), including almost the entire SFK.[FN 45] Copper would be at a concentration sufficient to kill rainbow trout and other salmonids in the upper 7.3 miles (11.7 km) of the remaining SFK downstream of the mine. Rearing coho, Chinook, and sockeye salmon would be affected in this reach. Acute and chronic effects of copper would affect eggs, fry, smolts, and returning salmon; chronic effects may have different levels of toxicity for different life stages. Dolly Varden, Arctic grayling, northern pike, burbot, and slimy sculpin would also be affected.

Downstream of the acutely toxic reaches of the SFK, levels sufficient to cause habitat avoidance would affect chum salmon, as well as rainbow trout, round whitefish, Arctic Alaskan brook lamprey, threespine stickleback, and ninespine stickleback. Copper would also affect fish in the 4.0mile (6.4km) UTC tributary that receives interbasin transfers from the SFK, resulting in concentrations sufficient to cause fish to avoid the habitat. Dolly Varden are widespread in this tributary, and the lower end also supports both spawning and rearing sockeye, rearing coho and Chinook salmon, rainbow trout, and Dolly Varden. In total, coho, Chinook, sockeye, and chum salmon

446 Draft EIS, at page 4.18-36.
447 Draft EIS Table 4.22-12, p. 4.22-39.
would each lose more than 19 miles (31 km) of habitat to copper effects under the Pebble 6.5 stage mine.…

Under the Pebble 6.5 stage mine, increased copper levels in the SFK would add to invertebrate toxicity in UTC via interbasin transfer, with acutely toxic levels extending 18.3 miles (29.5 km) to Iliamna Lake. Consequently, there would be not only a total loss of invertebrates from within the mine footprint, but also severe invertebrate losses in streams with acutely toxic copper levels and reduced invertebrate production in streams with chronically toxic copper levels. These invertebrates are an essential food source for the juvenile coho, Chinook, and sockeye salmon and northern pike that rear in those stream reaches or farther downstream, as well as all life stages of Dolly Varden and Arctic grayling (Johnson and Blanche 2012, ADF&G 2013, EPA 2014: Appendix B). Significant adverse impacts on food availability for fish, particularly in the SFK and lower UTC, as well as significant reductions in downstream export of macroinvertebrates, would be expected to reduce fish productivity in those systems and beyond. Tests on juvenile Chinook salmon have documented reduced body length and weight in response to subchronic copper exposures; application of these results to a population demographic model found that reduced individual growth led to reduced population growth due to increased mortality of smaller out-migrating fish (Mebane and Arthaud 2010). Low-level exposures to copper also appear to reduce out-migration success of coho salmon, with greater effects observed at higher exposures (Lorz and McPherson 1977).

In the BBWA, EPA also quantifies its estimates for the volume of seepage it expects to reach surface waters under the Pebble 6.5 alternative. It estimates that, during operations, 7,203,000 cubic meters/per year of tailings storage facility leakage would return to surface streams. It estimates that 1,032,000 cubic meters/per year of potentially acid generating waste rock leachate would return to surface streams. It estimates that 4,971,000 cubic meters/per year of non-potentially acid generating waste rock leachate would return to surface waters.

In assessing the cumulative impacts to water quality and fisheries associated with the 78-Year Mine Expansion, it is also essential to acknowledge and specifically address the expected impacts to Talarik Creek (documented salmonid habitat – see Proposed Determination at p. 4-52) and the watershed that it feeds. The North Waste Rock Facility (9,431 acres), the North Waste Rock Facility Collection Pond and a substantial portion of the expanded Open Pit (4,059 acres) will be located in Upper Talarik Creek. The potential for toxics reaching this watershed will be dramatically increased by the developments associated with the 78-Year Mine Expansion. As discussed above, the Regional Administrator found it likely that substantial reaches of the Talarik Creek and the watershed it feeds would be...

448 PD at pages 4-54 to 4-56.
449 BBWA Table 7-17, p. 7-46.
450 Response to RFI 062, Figure 1.
severely contaminated by copper under the Pebble 6.5 alternative. The BBWA details the
underpinnings for this analysis.

As with the consideration of information concerning the Pebble 2.0 alternative, it is
appropriate to reevaluate EPA’s conclusions in light of design features in the 78-Year
Expanded Mine that EPA did not contemplate, to the extent they have been developed and
the applicant is committed to implementing them. However, no information regarding
EPA’s analysis is presented in DEIS. The Corps cannot make a fair determination of how
the reasonably foreseeable cumulative impacts to water quality of the 78-Year Expanded
Mine affects the public interest without considering EPA’s conclusions and addressing their
application to the 78-Year Expanded Mine.

78-Year Plan and Waste Rock Leachate. An assessment is needed of the cumulative
impacts to water quality of the proposed 78-Year Expanded Mine, particularly with regard to
the water quality impacts that can be predicted for expansion of operations into the Upper
Talarik Creek Watershed. EPA’s analysis of the water quality impacts associated with the
Pebble 6.5 alternative provides a useful starting point for an assessment of the likely water
quality impacts of the 78-Year Expanded Mine.451

The Regional Administrator made the following findings regarding leachate from waste rock
disposal facilities — a prominent feature of EPA’s Pebble 6.5 alternative and the 78-year mine
plan set out in the DEIS.452

Waste rock leachate would be the primary concern during routine operations.
Waste rock would include both potentially acid-generating (PAG) and non-
acid-generating (NAG) material (EPA 2014: Chapter 8). Leachate from NAG
waste rock would be approximately neutral, whereas that from PAG material
would be acidic. Incomplete collection of this leachate would result in acid
mine drainage. Consistent with preliminary plans made public by NDM
(Ghaffari et al. 2011), the BBA [Bristol Bay Assessment] assumes that waste
rock piles would be unlined. Within the mine pit’s drawdown zone, leachate
would flow toward and be captured in the pit for subsequent treatment.
Outside the drawdown zone, the BBA estimates that half of the waste rock
leachate would be captured through a leachate collection system and
other means; the other half would escape to surface waters downslope of
the source waste rock pile because the area’s geological complexity and
the permeability of surficial underlying layers would allow water to flow
between wells and below their zone of interception (EPA 2014: Chapter
8).453

451 See DEIS p. 4.1-8 ("a similar expansion concept was analyzed as Pebble 6.5 in the US Environmental Protection
Agency (EPA) Watershed Assessment (EPA 2014)."
452 See Table 4.1-2, Mine Site. DEIS p. 4.1-23.
453 PD at page 4-52 (emphasis added).
In the BBWA, EPA quantifies its estimates for the volume of seepage it expects to reach surface waters under the Pebble 6.5 alternative. It estimates that, during operations, 7,203,000 cubic meters/year of tailings storage facility leakage would return to surface streams. It estimates that 1,032,000 cubic meters/year of potentially acid generating waste rock leachate would return to surface streams. It estimates that 4,971,000 cubic meters/year of non-potentially acid generating waste rock leachate would return to surface waters.\textsuperscript{454}

The Draft EIS makes representations regarding the capture of leachate from the waste rock disposal facilities that conflict with EPA’s findings. Specifically, in Table 4.1-2, the DEIS states that “All runoff and seepage from the waste rock storage facilities would be captured and used in the process, or treated for release.”\textsuperscript{455} It is difficult to reconcile this statement with EPA’s findings that half of the leachate from waste rock facilities would escape to surface waters downstream. It is also difficult to reconcile the representation in Table 4.1-2 with the statement in the DEIS that “[s]eepage water could also flow vertically downwards into deeper bedrock fractures.”\textsuperscript{456}

EPA commented that the Preliminary DEIS inadequately addressed the failure of the document to address the critical water quality issue regarding the capture of seepage. With regard to the bulk tailings storage facility, it stated

we continue to recommend providing additional information related to hydraulic containment. We recommend that this information include, at a minimum: (1) figures that show the location of the underdrains; (2) figures that show the locations and cross-sections of the seepage pumpback wells in relation to the plume of contaminated groundwater; and (3) a discussion of these designs in relation to the groundwater modeling that reflects the Corps’ independent analysis, specific conclusions on the effectiveness of these measures, and any uncertainties.\textsuperscript{457}

The Corps’ responses to these comments indicate that the seepage capture facilities and the hydraulic containment system underlying these facilities “are currently conceptual only…and would be developed in the final design.”\textsuperscript{458} Since the facilities of concern have not been designed, it is unsurprising that the Corps could not provide “a discussion of these designs in relation to the groundwater modeling that reflects the Corps’ independent analysis, specific

\textsuperscript{454} BBA Table 7-17, p. 7-45.
\textsuperscript{455} Draft EIS p. 4.1-23.
\textsuperscript{456} Draft EIS p. 4.17-14.
\textsuperscript{457} EPA Comments – Pebble Project Preliminary Draft EIS, Section 4.18 – Water and Sediment Quality, p. 15 Comment 33. See also, p. 18 Comment 38 (“We recommend including additional information in the DEIS to support the 100% seepage collection conclusion or alternatively, revising that conclusion as appropriate.”).
\textsuperscript{458} Corps Response to EPA Comment 33.
conclusions on the effectiveness of these measures, and any uncertainties.”459 All the Corps can offer in response to EPA’s concerns is a commitment to try to fix seepage problems once they occur.460

In light of this gap in the Corps’ analysis of the effectiveness of the seepage control measures, there is no technical basis for rejecting the Proposed Determination’s conclusions that substantial water quality degradation will result from seepage of contact water from the mine site as proposed in the application, with material impacts to downstream fisheries. In addition, nothing in the DEIS discusses, let alone rebuts, EPA’s conclusions regarding the impacts to water quality from releases of contaminated contact water from facilities associated with the Pebble 6.5 alternative. Therefore, based on the current record, EPA’s analysis can and should be considered as unrebutted technical analysis of the expected water quality and fishery impacts associated with the Pebble 78-Year Expanded Mine.

Conclusions at to Water Quality. As discussed above, the Corps is required to give appropriate consideration of the conclusions of the Regional Administrator with regard to water quality issues.461 The Regional Administrator’s conclusions are supported by the analysis presented in the Bristol Bay Assessment.462

In light of the failure to analyze the risk of seepage discharges that escape treatment, and the uncertainties of the treatment systems’ ability to treat for selenium and control temperature, the proposed plan for Pebble Mine cannot demonstrate that it will comply with water quality standards for copper, selenium and temperature. It is contrary to the public interest to issue a CWA 404 permit for a porphyry copper mine that cannot demonstrate that it will comply with water quality standards both individually and cumulatively.

5. Historic, Cultural, Scenic, and Recreational Values (33 C.F.R. § 320.4(e))

The public interest review regulations note that 404 permit applications “may involve areas which possess recognized historic, cultural, scenic, conservation, recreational or similar values.”463 In conducting its public interest review, the regulations direct the Corps that

Full evaluation of the general public interest requires that due consideration be given to the effect which the proposed structure or activity may have on values such as those associated with wild and scenic rivers, historic properties and National Landmarks, National Rivers, National Wilderness Areas, National Seashores, National Recreation Areas, National Lakeshores, National Parks, National Monuments, estuarine and marine sanctuaries, archeological resources,

459 EPA Comment 33.
460 See Corps Response to EPA Comment 33.
461 33 CFR 320.4.
462 See, e.g. BBWA Chapter 8; and, in particular, pp. 8-45 – 8-57 (metals toxicity), and 8-57 – 8-61 (temperature).
463 33 C.F.R. § 3204(e).
including Indian religious or cultural sites, and such other areas as may be established under federal or state law for similar and related purposes. Recognition of those values is often reflected by state, regional, or local land use classifications, or by similar federal controls or policies. Action on permit applications should, insofar as possible, be consistent with, and avoid significant adverse effects on the values or purposes for which those classifications, controls, or policies were established.\footnote{Id.}

As described supra Section III and infra Sections V.H.15. (Historic Properties), V.H.16. (Recreation); V.H.20. (Cultural Resources); and V.H.126 (National Parks), the Bristol Bay watershed is home to a wide array of world-renowned historic, cultural, scenic, conservation, and recreational values. These attributes of the Bristol Bay watershed serve the public interest well, as the basis of a sustainable, diverse, and important economy and way of life. These values and their importance to the public is described at length in the Corps and EPA records related to Bristol Bay and the proposed Pebble Mine Project. Based on the importance of these values and the destruction of these values posed by the proposed Pebble Mine Project, it is in the public’s interest to deny the 404 permit application.

6. **Consideration of Property Ownership (33 C.F.R. § 320.4(g))**

Under the public interest review regulations, a 404 permit “does not convey a property right, nor authorize any injury to property or invasion of other rights. … [it] does not authorize any injury to property or invasion of rights or any infringement of Federal, state or local laws or regulations.”\footnote{33 C.F.R. § 320.4(g).} This language strongly favors the rights of private landowners to exclude project components from private lands, especially when the proposed project is not water-dependent. BBNC’s lands are implicated in all three Action Alternatives, including PLP’s proposal.

As noted by PLP, for the proposed transportation corridor along the north of Iliamna Lake, including BBNC’s parcel held in unrestricted fee title that would be directly bisected by PLP’s proposal,\footnote{See supra, Section II.B.} “PLP does not currently have access to private lands in the Diamond Point to Eagle Bay area that would be required for this alternative to be practicable.”\footnote{Memo from James Fueg, PLP, to Shane McCoy, USACE (Aug. 3, 2018) re Additional Lake Access Options Studied by PLP (attached to response to RFI-032.)} Moreover, as the Draft EIS notes, the transportation corridor will need to utilize subsurface estate for the proposed natural gas pipeline and this would require the approval of BBNC.\footnote{Draft EIS, p. 4.2-4.}

BBNC made clear to the Corps that BBNC has not extended and will not extend to PLP any permission to occupy or trespass our lands or to make use of our subsurface resources. Our
Board’s position on these issues is firm and will not change. BBNC’s opposition to essential project components being located on its private lands must be considered as a factor in the CWA 404 public interest determination and weighs heavily against the Corps issuing a permit for the proposed Pebble Mine Project.

7. **Other Federal, State, or Local Requirements (33 C.F.R. § 320.4(j))**

The public interest review regulations state that “Processing of an application for a DA permit normally will proceed concurrently with the processing of other required Federal, state, and/or local authorizations or certifications.” As explained throughout this letter, and as BBNC has expressed to the Corps on multiple occasions, the Corps is irresponsibly proceeding with review of PLP’s 404 permit application without concurrently processing other required applications for Federal permits (from Coast Guard and BESS), state permits and approvals (various DNR, DEC, and ADF&G permits, certifications, and authorizations), and local authorizations or certifications (such as borough conditional use permits). By failing to run these processes concurrently, the Corps is piecemealing its approach to review of this project and is not considering the full range of impacts nor of the details of the proposal. By doing this, the Corps own 404 permit application lacks the necessary details for review and should be denied as incomplete.

It is not in the public’s interest to continue processing this permit application. The Corps have created inefficiencies by generating more and separate processes rather than taking a holistic view of the entire project informed through its many permit applications and underlying details. This process is not in line with other federal, state, and local requirements and is not in the public’s interest. Moreover, there are no “significant issues of override national importance” as required by the regulations to ignore the Corps’ obligation to concurrently process all federal, state, and local approvals. Therefore, the 404 permit application should be denied.

8. **Safety of Impoundment Structures (33 C.F.R. § 320.4(k))**

“To insure that all impoundment structures are designed for safety, non-Federal applicants may be required to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons and, in appropriate cases, that the design has been independently reviewed (and modified as the review would indicate) by similarly qualified persons.” Based on this regulation, EPA request that the Corps conduct an independent review of the safety of PLP’s impoundment structures, stating that given the size of the dams and importance of downstream aquatic resources, and for the bulk TSF, centerline dam construction methodology (which is not as stable as downstream construction), we recommend that: (1) a Failure Modes Effect Analysis (FMEA) or other type of formal risk assessment be conducted for the dam designs; and (2) the Corps require that the tailings dam designs be independently reviewed per 33 CFR 325.1. FMEA/risk assessment

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470 33 C.F.R. § 320(j)(1).
471 33 C.F.R. § 320(j)(4).
472 33 C.F.R. § 320.4(k).
and independent review are recommended best practices from both the Independent Expert Engineering investigation and Review Panel Report on Mount Polley Tailings Storage Facility Breach (2014) and the International Council on Mining and Metals Review of Tailings Management Guidelines and Recommendations for Improvement (Golder 2016) for evaluating safety and stability of tailings dams. Mitigation measures arising out of the risk assessment and independent reviews should be identified and required of the final designs and operating plans. We recommend that the FMEA/risk assessment and independent review occur now so that the results can be disclosed in the DEIS to support the Corps’ hard look, as required by NEPA, at tailings dam stability and safety.”

The Corps has thus far refused to independently consider the safety of PLP’s proposed tailings dam facilities. Given the record of impoundment failures associated with mining impoundment structures, the proposed Pebble Mine Project is an appropriate case for independent review of the design. In addition, the public interest demands a long-term operations and maintenance plan extending in perpetuity as to at least some structures given the acknowledgement in PLP’s Project Description that at least some important maintenance activities will need to be maintained in perpetuity.

9. Floodplain Management (33 C.F.R. § 320.4(l))

“Floodplains possess significant natural values and carry out numerous functions important to the public interest.” Although a particular alteration to a floodplain may constitute a minor change, the cumulative impact of such changes may result in a significant degradation of floodplain values and functions and in increased potential for harm to upstream and downstream activities. In accordance with the requirements of Executive Order 11988, district engineers, as part of their public interest review, should avoid to the extent practicable, long and short term significant adverse impacts associated with the occupancy and modification of floodplains, as well as the direct and indirect support of floodplain development whenever there is a practicable alternative.”

As described by EPA, the Nushagak and Kvichak River watersheds contain important floodplain habitat. Indeed, the BBWA found that for streams in these watersheds with less than 1% gradient, “55% have high floodplain potential” and that the broad geomorphic and hydrologic characteristics and floodplains and low gradient streams enables “the development of stream and river habitats highly suitable for fishes such as Pacific salmon, Dolly Varden, and rainbow trout.”

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473 Pebble Project Comment Response Matrix, EPA Comments on Preliminary Draft EIS, Ch. 2, comment no. 14.
474 33 C.F.R. § 320.4(l).
475 33 C.F.R. § 320.4(l)(2).
476 BBWA at page 3-27.
The BBWA illustrates the widespread and pristine floodplain habitat throughout Bristol Bay:

**Figure 3-13.** Likelihood of floodplain potential, as measured by the percent flatland in lowland areas, for the Nushagak and Kvichak River watersheds. Flatland refers to land with less than 1% slope; lowland areas are defined as areas below the midpoint elevation within the drainage basin of each stream reach (Box 3-3).
According to EPA, “streams in the mine scenario watersheds are generally low-gradient, with extensive flat floodplains or terraces in the larger valleys” with “the high proportion of stream channels in these basins with the broad geomorphic and hydrologic characteristics that support stream and river habitats highly suitable for fish species such as Pacific salmon, Dolly Varden, and rainbow trout.”

The proposed Pebble Mine Project during regular operations would fill and directly destroy 3,560 acres of wetlands, more than 80 miles of streams, and dewater another 500 or more acres of wetlands would have vast negative consequences to the floodplains of Bristol Bay. Indeed, as noted by EPA in the BBWA, reduced streamflows from mining the Pebble deposit during regular operations “would also result in the loss or alteration of an unquantifiable area of riparian floodplain wetland habitat due to loss of hydrologic connectivity with streams.”

Reduced conductivity of floodplains due to dewatering will “could alter groundwater recharge rates and influence characteristics of floodplain percolation channels, seeps, or other expressions of the hyporheic zone” and “could result in stranding or isolation of fish in off-channel habitats.” Indeed, loss of floodplain habitat at the mine site during normal operations would result in an array of unacceptable adverse effects to floodplain values, such as support for fish and aquatic life.

In the case of a tailings dam failure, EPA found floodplains would be massively impacted in the case of a tailings dam failure: “[t]he flood itself would have the capacity to scour the channel and floodplain and alter the landscape, and the amount of tailings that could discharge from the TSF could bury the existing channel and floodplain system with meters of fine-grained tailings material.” Moreover, EPA noted that spilled tailings would “flow into streams, rivers, and floodplains” of remote and roadless areas, making recovery and cleanup “extremely difficult and would result in additional environmental damage.”

The proposed Pebble Mine Project would also require at least 86 road and pipeline stream crossings. These stream crossings will mostly consist of culverts, about half of which will be design for fish passage. Stream crossing presents a challenges because streams move over time, depending upon their flow and sediment regimes and the compositions of their beds, floodplains, and banks. Fill and placement of culverts in floodplains can impede seasonal spring flows discharging into the floodplain and can lead to things like backwater flooding, erosion, and habitat fragmentation.

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477 BBWA at pages 7-17 to 7-19.
478 BBWA at page ES-14.
479 BBWA at page 7-57.
480 BBWA at page 9-1.
481 BBWA at page ES-27.
482 Draft EIS, Executive Summary at page 9.
483 Id.
Given the widespread presence of floodplain habitat in the Nushugak and Kvichak River systems and the widespread fill and fragmentation of floodplains proposed by PLP, the project could lead to widespread negative impacts to floodplains. This activity, and its cascading impacts on the aquatic ecosystem, fish habitat, and water quality of Bristol Bay is not in the public’s interest. Floodplains carry out numerous functions important to the public interest, and these important functions would be destroyed if PLP were granted a 404 permit. Thus, granting a 404 permit to PLP is not in the public’s interest, because – as EPA found – the project would result in the loss or alteration of an unquantifiable and important area of riparian floodplain wetland habitat.

10. Water Supply and Conservation (33 C.F.R. § 320.4(m))

The Corps public interest review notes that “[w]ater is an essential resource, basic to human survival, economic growth, and the natural environment.” 485 “Water conservation requires the efficient use of water resources in all actions which involve the significant use of water or that significantly affect the availability of water for alternative uses.” 486 The project would impair flows in the Koktuli River and Upper Talarik Creek watersheds and further downstream. Moreover, this collection and diversion of water would negatively impact the areas wetlands and fish habitat, in turn further harming the public’s interest in keeping water in the stream and not diverted in such a large capacity towards mining. Indeed, as Corps regulations state, functioning wetlands “perform functions important to the public interest.” 487

PLP’s proposal would require the collection, diversion, and treatment of massive amounts of water—more than 20,000 gallons per minute, or 28.8 million gallons per day—in the pristine headwaters of Bristol Bay. This collection and diversion of water from its natural use (in stream) towards an alternative use (mining) is not in the public’s interest.

11. Energy Conservation and Development (33 C.F.R. § 320.4(n))

According to the public interest review regulations, “[e]nergy conservation and development are major national objectives.” 488 The Proposed Pebble Mine Project will have a negative impact on energy conservation and development in light of current demand and supply needs for Cook Inlet natural gas, the energy source PLP is proposing to fuel its 270MW powerplant under the 20-year mine plan and 370MW powerplant under its 78-year mine plan.

For the 20-year mine 270MW powerplant, the Draft EIS predicts PLP will need to use 50 million standard cubic feet of natural gas per day, or 18.25 billion standard cubic feet of natural gas per year, or 365 billion standard cubic feet of natural gas over the 20-year lifetime of the project. 489 Moreover, for the 78-year Expanded Development Scenario

485 33 C.F.R. § 320.4(m).
486 33 C.F.R. § 320.4(m).
487 33 C.F.R. § 320(b)(2).
488 33 C.F.R. § 320.4(n).
489 Draft EIS, page 2-71. See also Draft EIS, Appendix N—Project Description (Dec. 2018), at page 51.
375 MW powerplant, the Draft EIS predicts PLP will need to use 70 million standard cubic feet of natural gas per day.\textsuperscript{490} The source of this natural gas, as stated in PLP’s project description and the Draft EIS will be “any natural gas producer in Cook Inlet, Alaska.”\textsuperscript{491}

Based on recent data released by DNR, the current demand for Cook Inlet natural gas for southcentral Alaska is 80 billion cubic feet per year.\textsuperscript{492} DNR concludes that the “Cook Inlet gas volumes identified in this study can satisfy the current demand level of about 80 Bcf/year until around 2030.”\textsuperscript{493} Based on this conclusion, the current total permitted and available supply of Cook Inlet natural gas through 2030 is 880 billion standard cubic feet.\textsuperscript{494}

PLP’s requirement of 18.25 billion standard cubic feet per year will put a substantial dent in the overall available natural gas supply derived from current Cook Inlet sources. Because the project would displace 18.25 billion standard cubic feet of natural gas per year from the tight supply market for Cook Inlet natural gas and because of the importance of this energy supply for the people of southcentral Alaska for their home heating and electricity needs, the proposed Pebble Mine Project would be detrimental to the public’s interest in energy conservation and development.

12. Navigation (33 C.F.R. § 320.4(o))

Under the public interest review regulations, “Protection of navigation in all navigable waters of the United States continues to be a primary concern of the federal government.”\textsuperscript{495} The proposed Pebble Mine Project would have adverse impacts to the public’s navigation in Cook Inlet, Amakdedori Cove, Iniskin Bay, Williamsport Bay, Iliamna Lake, Gibraltar River, and Newhalen River. All of these waterways are designated by the state of Alaska as important for public recreation, tourism, and subsistence activities.\textsuperscript{496} Constructing ferry terminals, deep water ports, bridges, and operating ferries, tugboats, lightering, and barges on these waters is not in the public’s interest, especially given the current use of these waters by the public for entirely nonindustrial uses.

13. Economics (33 C.F.R. § 320.4(q))

The public interest regulations direct the Corps to consider project economics in the context of the overall benefit to the public. The regulations direct “the district engineer in appropriate

\textsuperscript{490} Draft EIS, page 4.1-23.
\textsuperscript{491} Draft EIS, page 4.1-27.
\textsuperscript{493} Id.
\textsuperscript{494} 80 Bcf demand/year * 11 years (2019-2030) = 880 Bcf.
\textsuperscript{495} 33 C.F.R. § 320.4(o)(3).
\textsuperscript{496} See discussion infra Sections V.H.14 (Land Ownership, Management, and Use) and V.H.16 (Recreation) (noting the Bristol Bay Area Plan, Kenai Area Plan, Mulchatna and Nushagak Rivers Recreation Management Plan, and Mineral Closure Order 393 all provide that these waters are reserved for public recreation, tourism, and subsistence activities).
cases, may make an independent review of the need for the project from the perspective of the overall public interest. The economic benefits of many projects are important to the local community and contribute to needed improvements in the local economic base, affecting such factors as employment, tax revenues, community cohesion, community services, and property values.\(^{497}\)

When considering the economics costs and benefits of the proposed Pebble Mine Project as a greenfield mining prospect siting at the headwaters of the world’s most prolific salmon commercial fishery, the overall public interest weighs very heavily against issuance of a 404 permit. The direct economic consequences of the mining proposal would be a net negative to the region while meanwhile doing very little to serve the U.S. or global economy.

**Uncertain Economics of the Mining Industry and Net Negative to the Local Economy.** Economic reviews of mining projects around the country present a bleak picture for economics and even bleaker picture of the economic impacts to those in surrounding communities. The Draft EIS analysis of economics “incorrectly assumes that the permitting and construction of a new mine assures a steady flow of net economic benefits to residents and governments.”\(^{498}\) Moreover, the Draft EIS wrongly predicts, with no basis in real data, that there will be a relatively large local employment and positive economic impacts associated with mine development, as well as a positive impact on local and government revenues. All of these assumptions are roundly rejected as misleading and based on faulty data by economists reviewing the Draft EIS with decades of experience analyzing mining projects.\(^{499}\)

**Existing Economics Dependent on Pristine Bristol Bay Watershed.** Meanwhile, as described by the BBWA, and in additional expert economic analyses and State of Alaska-compiled data subsequent to the BBWA’s publication, the Bristol Bay economy is heavily dependent on clean, pristine waters for its healthy salmon run. As noted by EPA, this economic activity all owes its existence to the “uncrowded, pristine wilderness setting of the Bristol Bay watershed,” “aesthetic qualities […] important in selecting fishing locations” and “numerous, interrelated factors” such as “the Bristol Bay region’s physical habitat complexity [and] biological complexity, which greatly increases the region’s ecological productivity and stability.”\(^{500}\) These waters, wetlands, and pristine ecosystem in turn support:
- A salmon commercial fishery valued at $1.5 billion in annual economic activity and

\(^{497}\) 33 C.F.R. § 320(q).


\(^{499}\) *Id.*

\(^{500}\) BBWA at pages 5-26 to 5-27.
supporting nearly 20,000 fishery jobs. \(^{501}\)

- Sport fishing and hunting trips (more than 29,000 taken annually) generating an additional $68.7 million in direct expenditures and more than 800 jobs annually (from employment of lodge owners, guides, pilots, etc). \(^{502}\) Approximately 80 businesses and 400 guides operate in Bristol Bay. \(^{503}\)
- Wildlife viewing and tourism generating an additional $104.4 million in direct expenditures annually. \(^{504}\)

Considering all sectors (commercial, sport, and subsistence fishing; sport and subsistence hunting; and non-consumptive recreation), EPA found that “the Bristol Bay watershed’s ecological resources generated nearly $480 million in direct economic expenditures in 2009 and provided employment for over 14,000 full- and part-time workers.” \(^{505}\)

The most recent example of the strength of the commercial fishing economic engine came in 2018, when a record 62.3 million sockeye salmon returned to Bristol Bay. This was the largest salmon season ever, based on records dating back to 1893, marking the fourth consecutive year that inshore sockeye salmon runs exceeded 50 million. \(^{506}\) The Nushagak and Kvichak River systems alone accounted for more than 50 million returning sockeye in 2018, or more than 80% of the entire Bristol Bay run. The 2018 season also ranks first in the history of the fishery’s exvessel value, with a preliminary estimate of $281 million, or 242% above the 20-year average of $116 million. \(^{507}\)

These ecological services and the economies they support would be negatively impacted if the proposed Pebble Mine Project and its associated infrastructure were approved by the Corps. Given the importance of these resources to the economy of Bristol Bay, and because PLP’s plan to mine the Pebble deposit has more economic pitfalls than benefits, the Corps must independently assess the economics — and indeed economic feasibility — of the proposal in light of the overall public interest. The Corps also evaluate how the current economy of Bristol Bay will be negatively impacted by a huge, copper-porphyry mine and all its associated infrastructure. BBNC has done this evaluation, based on our responsibilities to protect the assets entrusted to our care and the interests of our approximately 10,500 shareholders and our commitment to responsible land and resource management as well as protection of Alaska Native culture, the subsistence way of life, and the region’s sustainable


\(^{502}\) BBWA at page 5-26.

\(^{503}\) BBWA at page 5-27.

\(^{504}\) BBWA at page 5-26.

\(^{505}\) BBWA at page ES-5.

\(^{506}\) See ADF&G, 2018 Bristol Bay Salmon Season Summary (Sept. 18, 2018), http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/989536277.pdf

\(^{507}\) Id.
commercial and sport fishing industries. In our opinion, the proposed Pebble Mine Project is not in the region’s and public’s best economic interest.

**Insignificant Benefits to the Minerals Market.** The Pebble Mine Project as proposed would do little to meet current and future demand for copper and other minerals. The 20-year mine plan in PLP’s 404 permit application would result in production of approximately 318 million pounds of copper per year\(^{508}\) and 7.4 billion pounds of copper overall.\(^{509}\) At the present global consumption rate for refined copper (approximately 48 billion pounds in 2017)\(^{510}\), this project would supply the global market with a mere 56 days’ worth of copper demand.\(^{511}\) Moreover, PLP’s stated project plans are to ship all ore to Asia directly from its Cook Inlet port site.\(^{512}\) This is PLP’s sole smelting option, as facilities for smelting this type of ore do not exist in Alaska, Canada, or the Pacific U.S. Neither the Corps nor PLP can claim that the proposed mine is intended to satisfy U.S. demand for ore. Even more importantly, destroying the headwaters of Bristol Bay’s pristine salmon fishery and forever placing the region at risk for 56 days of global copper supply, or for 2 and 3 years of U.S. demand and production, respectively, cannot be considered reasonable or beneficial for the overall public interest.

### 14. Mitigation (33 C.F.R. § 320.4(r))

In addition to considering mitigation (including compensatory mitigation) needed to comply with the CWA § 404(b)(1) Guidelines, the Corps must determine whether supplemental mitigation is required for the Corps not to determine that the project is contrary to the public interest. If sufficient mitigation is not available to achieve this threshold, the Corps should decline to permit the project on the grounds that it is contrary to the public interest.

Mitigation to assure that the project is not contrary to the public interest must be reasonable and justified.\(^{513}\) However, in determining what is reasonable and justified, the Corps needs to consider the significance of the identifiable resource losses, the likelihood of the resource losses occurring, the importance to the human or aquatic environment of the losses.\(^{514}\) All

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\(^{509}\) Draft EIS, Appendix N, Table 1-1, at page 13.


\(^{511}\) 7.4 billion pounds from Pebble / 48 billion pounds global consumption annually = 0.1542 * 365 days per year = 56.3 days.

\(^{512}\) Statement of NDM CEO Ron Thiessen, Denver Gold Forum (Sept. 26, 2017), available at: http://www.denvergold.org/company-webcast/dgf17/219/ (the mine site is “close to tidewater which gives us good access to oceans and shipment to Asia.”).

\(^{513}\) 33 CFR 320.4(r)(1)(ii).

\(^{514}\) 33 CFR 320.4(r)(2).
mitigation is to be “directly related to the impacts of the proposal, appropriate to the scope and degree of those impacts, and reasonably enforceable.”

**Draft Compensatory Mitigation Plan and Draft EIS.** There is no information in the record to indicate how or even whether compensatory mitigation will be developed to offset the unavoidable permanent and temporary impacts. Chapter 5 and Appendix M of the Draft EIS provide no substantive proposals for compensatory mitigation. It is impossible to meaningfully comment on the adequacy of a proposal for compensatory mitigation that does not exist. However, there are a few remarks in the Draft EIS that provides an indication of the direction the applicant intends to pursue in developing a compensatory mitigation proposal.

The draft CMP (compensatory mitigation plan) evaluates compensatory mitigation options based on the results of the watershed analysis, and concludes that the watershed approach and on-site and in-kind compensatory mitigation are not practical to meet the project’s compensatory mitigation needs, as options for restoration, enhancement, establishment, and preservation of wetlands and aquatic resources are non-existent in the CMP analysis area. Options are non-existent because the limited development has caused negligible degradation to wetlands and other aquatic habitats. Therefore, PLP proposes consideration of off-site, in-kind, or out-of-kind mitigation opportunities, which would necessitate evaluation of mitigation opportunities beyond the HUC 10 watersheds directly impacted by the project. PLP notes that mitigation opportunities may be predominantly limited to wetlands preservation in the surrounding watersheds, or even further afield.

PLP’s approach to compensate for the permanent loss of wetlands and aquatic habitat in the CMP analysis area resulting from the project will primarily focus on opportunities that benefit water quality and enhance or restore fish habitat through out-of-kind mitigation. Although the preference is to seek such opportunities within the CMP analysis area, PLP indicated that they will also search for opportunities outside the directly impacted watersheds. If these opportunities are not sufficient, PLP may propose preservation as compensatory mitigation, but that would be the least preferred form.

This language is so vague that it cannot be substantively evaluated as to what benefit would result to the aquatic ecosystem from its implementation. Hence, it cannot provide a basis for the Corps to determine that the project is not contrary to the public interest. Further details are promised “as part of the final permit decision, and would be documented in the ROD.” However, this deprives the public, included the affected local population, of the opportunity to meaningfully participate in the NEPA process with regard to compensatory mitigation.

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515 *Id.*

516 Draft EIS at pages 5-24 to 5-25.

517 Draft EIS at p. 5-24.
While the Draft EIS suggests that the public will be allowed to review and comment on the draft CMP, there is no indication that this review will occur in the context of review of a draft or final EIS. Equally importantly, it prevents the public from analyzing whether “reasonable and justified” compensatory mitigation will be implemented sufficient to offset the enormous impacts to waters of the United States that will result from this project. And, as described below in Section IV.H.4., the Corps and EPA have noted concerns with PLP’s draft CMP.

However, as to one key point, the Draft EIS is relatively clear: There are no opportunities for compensatory mitigation to address the impacts to waters in the affected watersheds, or anywhere in the area being studied by the applicant. Thus, no meaningful compensatory mitigation will be offered anywhere in the vicinity of the impacts to address the destruction of over 3,500 acres of wetlands and other aquatic resource as well as adverse impacts to thousands of additional acres of such resources “[O]ptions for restoration, enhancement, establishment, and preservation of wetlands and aquatic resources are non-existent in the CMP [Compensatory Mitigation Plan] analysis area.”

**No Adequate Mitigation for 20-Year Mine Losses Available in Bristol Bay.** If there are no options for compensating for the impacts to waters of United States affected by the proposal anywhere in vicinity of the proposed impacts, the proposed project is contrary to the public interest for failing to provide reasonable and justified mitigation. The remedy for insufficient compensatory mitigation under the public interest review is not less compensatory mitigation. It is denial of the permit.\(^{518}\)

In response to EPA’s BBWA in 2013, NDM and PLP submitted to EPA for its review proposed mitigation strategies to offset lost salmon habitat and production from mining activities.\(^{519}\) A review of these proposed methods by Dr. Carol Ann Woody concluded these strategies were “unproven,” “experimental,” “make untenable assumptions,” and developed in “highly altered systems.”\(^{520}\) As a result of EPA’s review, the agency determined in the Proposed Determination that known compensatory mitigation techniques are unlikely to adequately offset anticipated impacts from mining the Pebble deposit.\(^{521}\)

**No Adequate Mitigation for Cumulative Impact Losses Available in Bristol Bay.** In addition to assessing the adequacy of the mitigation (including compensatory mitigation) to address the impacts of the proposed project, the Corps, in determining whether the proposed project is contrary to the public interest, must consider the cumulative impacts to

\(^{518}\) 33 CFR 320.4(a)(1); See also 33 CFR 332.1(c)(3)(“the district engineer may determine that a DA permit for the proposed activity cannot be issued because of the lack of appropriate and practicable compensatory mitigation options.”)

\(^{519}\) See attached Appx. E, at pages 672 to 708, Woody, Carol Ann, Critique of Northern Dynasty’s Proposed Mitigation Strategies (June 25, 2013).

\(^{520}\) Id.

\(^{521}\) PD, at section 4.3.2.
wetlands and other aquatic habitats that are reasonably foreseeable. As the Draft EIS documents, it is reasonably foreseeable that the applicant will seek to implement the 78-Year Expanded Mine options. Since all of the impacts associated with this mine expansion will be the responsibility of the current applicant, it is reasonable and justified to expect the applicant to be responsible for the compensatory mitigation requirements for the mine expansion.

The DEIS estimates that the 78-Year Expanded Mine will potentially affect an additional 12,445 acres of wetlands. As the Draft EIS documents, it is reasonably foreseeable that the applicant will seek to implement the 78-Year Expanded Mine options. Since all of the impacts associated with this mine expansion will be the responsibility of the current applicant, it is reasonable and justified to expect the applicant to be responsible for the compensatory mitigation requirements for the mine expansion.

Presumably, added impacts to other waters at the mine site will be on an equivalent scale. There is no basis for reasonably concluding that any meaningful compensatory mitigation would be available for these impacts anywhere in the CMP study area. Therefore, it is only reasonable to assume that these impacts will not be compensated and will not offset any of the impacts to the aquatic ecosystem that will result from the mine expansion.

It is contrary to the public interest to permit a project that has reasonably foreseeable cumulative impacts that will exceed 12,000 acres of impacts to wetlands and other waters and for which no compensatory mitigation will be available to compensate for said impacts.

H. 404 PERMIT MUST BE DENIED FOR LACK OF SUFFICIENT INFORMATION; INCOMPLETE 404 PERMIT APPLICATION LED TO AN INSUFFICIENT PUBLIC NOTICE AND INADEQUATE COMPLETENESS DETERMINATION

One of the fundamental congressional goals and policy in enacting the CWA is to ensure full public participation in Corps and EPA permitting decisions: “Public participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program ... shall be provided for, encouraged, and assisted by the Administrator and the States.” In line with Congress’ goals and policy, the Corps’ regulations require that all proposed discharges be subject to “Public review and comment.” “Public notice is the primary method of advising interested parties of the proposed activity for which a permit is sought, and of soliciting comments and information necessary to evaluate the probable impact on the public interest. The notice must, therefore, include sufficient information to give a clear understanding of the nature and magnitude of the activity to generate meaningful comment.” As described below, the Corps’ 2018 and 2019 Public Notices have failed to give a clear understanding of the nature and values of the wetlands and streams to be filled; (4) information on the type of fill

522 Draft EIS at page 4.22-40.
523 33 U.S.C. § 1251(e).
524 33 C.F.R. §§ 325.2(a) & (d); 33 C.F.R. § 325.3. See also, 33 C.F.R. § 332.4(b) (public review and comment on compensatory mitigation plans).
525 33 C.F.R. §325.3(a).
material to be discharged for various project components; (5) information generated from an independent review of impoundment structures; and (6) new project alterations subsequent to the March 1, 2019 Public Notice.

The CWA 404(b)(1) Guidelines prohibit issuance of a permit where “There does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with these Guidelines.” In addition, under the Corps regulations, when a project is so speculative that alternatives and avoidance and minimization cannot be meaningfully addressed, the application may be considered incomplete.527

1. 404 Permit Process—Public Notice and Completeness Deficiencies and Inadequate Completeness Determination

The Corps of Engineers, Alaska District, has failed to follow its own permitting regulations regarding the Proposed Pebble Mine Project in a number of respects. Most importantly, the Alaska District has failed to undertake a proper review of the completeness of the Section 404 permit application for Pebble Mine. The Alaska District also failed to provide a timely public notice and opportunity for comment on the permit application.

The effect of the Corps’ failure to properly address the completeness of the permit application has allowed the application to undergo detailed analysis in a Draft EIS despite material deficiencies – most notably the absence of a valid compensatory mitigation statement. As a result, the public has been deprived of the opportunity to provide meaningful input regarding compensatory mitigation either through comment on the permit application or on the Draft EIS. The applicant’s failure to adequately address compensatory mitigation, and the Alaska District’s apparent willingness to accept this failure further raises the risk that the eventual permit decision will not properly consider the legal and policy issues that need to be evaluated in this area.

Regulatory Structure. Once a permit application is filed, the Corps’ first responsibility (after assigning a permit number) is to determine whether the application is complete.528 Within 15 days of submission of the application, the district engineer “shall review the application for completeness, and if the application is incomplete, request from the applicant … any additional information necessary for further processing.” An application is considered complete “when sufficient information is received to issue a public notice.”530 Section 325.1(d)(7) is of particular relevance here. It requires “[e]ither a statement describing

527 33 C.F.R. § 325.3(a).
528 33 CFR § 325.2(a)(1).
529 Id; see also 33 CFR § 325.2(a)(2).
530 See 33 CFR 325.1(d) and 325.3(a).
how impacts to waters of the United States are to be compensated for or a statement explaining why compensatory mitigation should not be required for proposed impacts.\textsuperscript{531}

If the district engineer determines the application to be complete, within 15 days of submission of the application, he or she is to issue a public notice “as described in § 325.3… unless specifically exempted by other provisions of this regulation.”\textsuperscript{532} In addition, if there is a change in the application data “that would affect the public’s review of the proposal,” he or she is to “issue a supplemental, revised or corrected public notice.”\textsuperscript{533}

**Alaska District Permit Processing for Pebble Mine—Completeness Determination.** We have received no record documenting that the Alaska District ever performed a completeness determination for the Pebble Mine permit application. No such determination is posted on the Alaska District’s website or on the Pebble EIS website.\textsuperscript{534} Failing to timely determine completeness is a violation of 33 CFR § 325.2(a)(2).

If the Alaska District did determine that the application was complete, this determination is almost certainly inconsistent with the provisions of 33 CFR § 325(d) (describing the required contents of the application) and 33 CFR § 332.4(b)(1) (describing information regarding compensatory mitigation needed for the public notice).

The December 2017 permit application for the Pebble Mine Project fails to “include either a statement describing how impacts to waters of the United States are to be compensated for or a statement explaining why compensatory mitigation should not be required.”\textsuperscript{535} In the December 2017 permit application, the entire statement regarding compensatory mitigation is:

> The **2008 Compensatory Mitigation for Losses of Aquatic Resources: Final Rule** established mechanisms to provide compensatory mitigation for unavoidable impacts of WOUS, and mitigation will be considered in detail throughout the permitting and NEPA processes. PLP will work with USACE throughout the process to identify and implement a compensatory mitigation plan that is appropriate for the final Project.\textsuperscript{536}

\textsuperscript{531} 33 CFR § 325.1(d)(7).
\textsuperscript{532} 33 CFR § 325.2(a)(2); see also 33 CFR § 325.2(d)(1). One ground for exemption from the time requirements for a public notice are the alternative and emergency procedures set forth in 33 CFR § 325.2(e). None of these appear to be relevant to the permitting for Pebble Mine. Nothing in Appendix B to Part 325 (NEPA Procedures) exempts projects from this requirement on the grounds that an EIS is to be prepared.
\textsuperscript{533} 33 CFR § 325.2(a)(2).
\textsuperscript{534} As of 2013, a standard Corps procedure, once an application was determined complete, was for Corps districts to enter into the Operations and Maintenance Business Link (OMBIL) of the Regulatory Module (ORM2) database the date a complete application was received. This may provide a mechanism to investigate whether the Alaska District ever made a completeness determination. See Regulatory Program Preparing and Coordinating Environmental Impact Statements, 12509-SPD, US Army Corps of Engineers South Pacific Division, 02/08/2013 at 7.1.2, p.10.
\textsuperscript{535} 33 CFR § 325(d)(7).
\textsuperscript{536} Pebble Project Department of the Army Application for Permit, POA-2017-271, December 2017, pp. 31-32 (Permit Application).
Nothing in this statement describes “how impacts to waters of the United States are to be compensated for.” Nor does the statement explain “why compensatory mitigation should not be required.” At most, this statement consists of a vague promise to work with the Corps to, at some unidentified time, identify and implement an appropriate compensatory mitigation plan. The Corps cannot prepare a meaningful public notice describing the mitigation elements of this application if all that the applicant can commit to is developing a compensatory mitigation plan in the future.

The Compensatory Mitigation Rule, relied upon by the applicant, explains why this deficiency in the application is materially inadequate. It provides:

the public notice for the proposed activity must contain a statement explaining how impacts associated with the proposed activity are to be avoided, minimized, and compensated for. This explanation shall address, to the extent that such information is provided in the mitigation statement required by § 325.1(d)(7) of this chapter, the proposed avoidance and minimization and the amount, type and location of any proposed compensatory mitigation…. The level of detail provided in the public notice must be commensurate with the scope and scale of the impacts.\textsuperscript{537}

The applicant’s proposed project, as described in its application, will unavoidably destroy thousands of acres of wetlands and other waters of the United States.\textsuperscript{538} This put the applicant on notice that its mitigation statement needed to provide a highly detailed explanation as to how it would provide compensation for the thousands of acres of waters of United States it proposed to destroy. Without such a mitigation statement, the Alaska District could not possibly issue a public notice that gave the public a meaningful opportunity to comment as to whether the damage caused by the project to waters would be adequately mitigated.

The deficiencies in the permit application deprive the Corps of the information needed to prepare a proper public notice.\textsuperscript{539} Therefore, the failure of the applicant to submit a mitigation statement in compliance with 33 CFR § 325.1(d)(7) should have resulted in the Corps rejecting the application as incomplete. This failure of the applicant deprived the public of information it needed to comment on the application in an area vital to the public interest – mitigation for losses of thousands of acres of wetlands and other waters of the United States.

\textsuperscript{537}33 CFR § 332.4(b)(1) (emphasis added).
\textsuperscript{538}See Permit Application Tables 22-4 – 22-8.
\textsuperscript{539}33 CFR § 332.4(b)(1), 33 CFR § 325.1(d)(10).
January 5, 2018 Public Notice. Assuming the Corps determined that the Pebble Mine Project permit application was complete, despite the deficiencies discussed above, the Corps was obliged to promptly issue a public notice consistent with the requirements of 33 CFR § 325.3.\(^{540}\) The Corps did issue a public notice roughly within this time frame on January 5, 2018. However, this notice did not comply with the requirements of 33 CFR § 325.3.

Rather than comply with the requirements of 33 CFR § 325.3, the January 5 public notice described in very general terms the major elements of the project, provided a link to the permit application, indicated that the Corps had determined an EIS would be required, and that indicated scoping for the EIS would be occurring. The notice also included a point of contact at the Alaska District.

Even if one considers the link to the permit application as incorporating the contents of the application into the public notice,\(^{541}\) the January 5 public notice fails to meet the requirements of the Corps’ public notice regulations in a number of important respects:

- There is no “statement of the district engineer’s current knowledge on historic properties.”\(^{542}\)
- There is no “statement of the district engineer’s current knowledge on endangered species.”\(^{543}\)
- There is not “statement(s) on evaluation factors.”\(^{544}\)
- There is no “comment period based on § 325.2(d)(2).”\(^{545}\)
- There is no “statement that any person may request, in writing, within the comment period specified in the notice, that a public hearing be held to consider the application.”\(^{546}\)
- While the permit application includes a mitigation statement, as discussed above, it does not satisfy the requirements for an adequate mitigation statement for purposes of the public notice.\(^{547}\)

\(^{540}\) See 33 CFR §§ 325.2(a)(2); 325.2(d)(1) (“[t]he public notice will be issued within 15 days of receipt of all information required to be submitted by the applicant in accordance with paragraph 325.1.(d) (sic) of this part.

\(^{541}\) Nothing in § 325.3 authorizes the Corps to incorporate other documents by reference (or link) to satisfy the requirements as to the contents of a public notice. The Corps’ 2009 Standard Operating Procedures indicates that it is appropriate to include exhibits in the public notice, but does not authorize incorporation of outside materials by reference or link. *Standard Operating Procedures for the U.S. Army Corps of Engineers Regulatory Program*, July 2009, pp. 13-14.

\(^{542}\) 33 CFR § 325.3(a)(10).

\(^{543}\) 33 CFR §§ 325.3(a)(11), 325.2(b)(5).

\(^{544}\) 33 CFR §§ 325.3(a)(12), 325.3(c).

\(^{545}\) 33 CFR § 325.3(a)(14).

\(^{546}\) 33 CFR 325.3(a)(15).

\(^{547}\) 33 CFR 332.4(b)(1).
If one takes the position that incorporation of outside materials by reference or link is not acceptable, the January public notice also failed to satisfy every pertinent requirement of 33 CFR §§ 325.3, 332.4(b)(1) except for providing the “name or title, address and telephone number of the Corps” point of contact.\footnote{33 CFR § 325.3(a)(3).} It provides incomplete information as to:

- the “[a]pplicable statutory authorities”\footnote{33 CFR § 325.3(a)(1).}
- “[t]he name and address of the applicant”\footnote{33 CFR § 325.3(a)(2)}
- “[t]he location of the proposed activity”\footnote{33 CFR § 325.3(a)(4)}
- “[a] brief description of the proposed activity”\footnote{33 CFR § 325.3(a)(5).}

As to the remaining requirements of 33 CFR §§ 325.3, 332.4(b)(1), the public notice (not considering the link to the application) provides no information.

**Initial Public Comment Period.** Since the initial public notice did not provide for a public comment period, the Alaska District failed to comply with the requirements of 33 CFR § 325.2(d) that the Corps provide for a comment period on its initial public notice.\footnote{33 CFR § 325.2(d)(2) (“[t]he comment period of the public notice should be for a reasonable period of time within which interested parties may express their views concerning the permit”).}

Failure to offer the public the opportunity to comment at this time deprives the public of the benefit of 40 CFR § 325.2(a)(3). This provision directs the district engineer to “consider all comments received in response to the public notice in his subsequent actions on the permit application.”\footnote{40 CFR § 325.2(a)(3).} These comments “will be made part of the administrative record.”\footnote{Id.} During the period between issuance of the January 5, 2018 public notice and the first public comment opportunity during the EIS scoping process, the public was shut out of meaningful participation in the development of the administrative record for this action, including but not limited to preliminary work in initiating the EIS process, contrary to the provisions of 33 CFR § 325.2(a),(d).

In addition, this initial comment period is intended to provide other federal agencies the opportunity to provide advice on matters “within the special expertise” of the agency.\footnote{40 CFR § 325.2(a)(3).} This would have been particularly valuable with regard to EPA, which had devoted substantial resources to developing the Bristol Bay Watershed Assessment. Early formal consultation with EPA, as provided for here, could have greatly improved the development

\footnote{33 CFR § 325.3(a)(3).}
\footnote{33 CFR § 325.3(a)(1).}
\footnote{33 CFR § 325.3(a)(2)}
\footnote{33 CFR § 325.3(a)(4)}
\footnote{33 CFR § 325.3(a)(5).}
\footnote{33 CFR § 325.2(d)(2) (“[t]he comment period of the public notice should be for a reasonable period of time within which interested parties may express their views concerning the permit”).}
\footnote{40 CFR § 325.2(a)(3).}
\footnote{Id.}
\footnote{40 CFR § 325.2(a)(3).}
of the Draft EIS by ensuring early consideration of the information and analysis developed in the Bristol Bay Watershed Assessment.

**January 2019 Application Revision.** In January 2019, the applicant submitted a revised application. In general terms, one significant alteration to the project was materially increasing the predicted filling of waters of the United States at the mine site from 3,190.55 acres to 3,429.84 acres. This reflected an overall expansion of operations that was a major reason for the revision to the application. The Alaska District did not issue a Public Notice of this revision.

The Corps’ permitting regulations require the district engineer to “issue a supplemental, revised or corrected public notice if in his view there is a change in the application data that would affect the public’s review of the proposal. It is possible the Alaska District concluded that this change to the applicant’s proposal would not affect the public’s review of the proposal, despite the filling of over 200 acres of additional waters. In the alternative, the Alaska District could take the position that the January 5 Public Notice did not actually commence the public review of the project, since that notice did not commence a public comment period. Without an explanation from the Alaska District, it is difficult to evaluate its reasoning.

However the Alaska District chooses to explain its failure to correct the January 5 Public Notice, it can be reasonably argued that the public deserved timely notice that the applicant was seeking to fill more than 200 acres of waters in addition to those proposed for filling in the January 5 Public Notice.

**March 1, 2019 Public Notice and Comment Period.** The Alaska District issued a Public Notice on March 1, 2019 that initiated a formal public comment period on the permit application. Except as to issues regarding references to extrinsic documents and the failure to include specific information related to compensatory mitigation, type of fill, and property ownership (discussed below), this notice appears to generally comply with the formal requirements of 40 CFR 325.3. It is not in compliance with the regulatory provisions of 40 CFR 325.2 discussed above requiring a proper public notice to be issued immediately following determination that the application is complete.

As did the January 5, 2018 Public Notice, the March 1, 2019 Public Notice relies on reference to outside documents (generally the Draft EIS) to comply with several regulatory requirements. These include:

- List of Required Permits and Approvals (33 CFR 325.3(a)(8)) – The notice references Appendix E of the Draft EIS.
- Mitigation (33 CFR 332.4(b)(1)) – The notice references Chapter 5 and Appendix M of the Draft EIS.

The adequacy of list of required permits and approvals required by 33 CFR 325.3(a)(8) depends entirely on the legitimacy of relying on reference to the Draft EIS. The public
notice has no substantive content on this point. Appendix E contains an extensive and relatively detailed discussion of the necessary approvals; however, one of the most important approvals required—approval of private landowners—is absent. As discussed below, this omission in the Draft EIS and PLP’s permit application is a reason to deny the permit application.

As to mitigation, like the list of permits and approvals, the adequacy of the public notice depends on whether incorporation by reference is allowable. The materials set out in Chapter 5 and Appendix M give commenters very little useful information as to whether and to what extent compensatory mitigation will be provided for impacts to waters of the United States from the applicant’s project. Therefore, neither the public notice nor the Draft EIS provide sufficient information to provide meaningful comment on the adequacy of the proposed mitigation for the project.

The public should have the right to provide comments to help shape the development of the Corps’ record and its administrative process at the outset of permit decisions that could result in significant environmental effects. Nothing in the Corps’ regulations precludes an initial public comment period on a permit application in compliance with 33 CFR § 325.2, and then a subsequent comment period on the permit application contemporaneously with or subsequent to issuance of the Draft EIS. The Draft EIS could be considered a change in the application data warranting issuance a supplemental Public Notices.\(^{557}\)

**Project Modifications Post-404 Public Notice Will Warrant Re-Issuance of the 404 Public Notice for Additional Public Comment Opportunities.** As described below, because of the inadequate permit application submitted by PLP, the Corps has not provided sufficient information in its 404 Public Notice related to: wetlands delineation for all alternatives including the proposed alternative; detailed mitigation and compensatory mitigation; a functional assessment for wetlands and streams; analysis and description of financial assurances; information on the type of fill utilized for all project components; independent review of impoundment structures; and approvals from private property owners of private estate that would be encumbered by project components. This information is necessary “to give a clear understanding of the nature and magnitude of the activity to generate meaningful comment.”\(^{558}\)

Failure of PLP to include this information in its permit application and the Corps’ acceptance by moving the permitting process along despite lacking information inevitably means that significant project changes will occur mid-permitting. As described above, there have already been multiple, substantial changes to the project over time, resulting in a moving target for public review that is difficult to understand and that substantially inhibits, rather than facilitates, meaningful public input. Moreover, given the pattern here, we anticipate even more changes will occur to the basic project design and description of impacts. Such

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\(^{557}\) See 33 CFR § 325.2(a)(2).

\(^{558}\) 33 C.F.R. § 325.3(a).
changes will warrant a new 404 Public Notice and additional opportunity for public comment.

As for one recent example of project changes warranting re-issuance of the 404 Public Notice for additional public comment opportunities, two weeks before the close of the comment period on this public notice, on June 14, 2019, the Corps quietly released, i.e. without public notice, significant changes to the transportation corridor alternatives and variants under consideration.\textsuperscript{559} These changes have removed from consideration the Kokhanok East spur road and lake ferry terminal, added a new variant between the south and north ferry terminals, and significantly re-routed the spur and access roads connecting the mine site to Iliamna. These substantial changes will result in changes to the nature and magnitude of the proposed activity and warrant a new 404 Public Notice and comment period.

2. 404 Permit Application Wetlands Delineation Insufficient

As part of its initial permit application, PLP submitted a Preliminary Jurisdictional Determination (PJD) Report,\textsuperscript{560} which was later revised and resubmitted to comply with Corps policies that any area that “may be” subject to Clean Water Act jurisdiction pursuant to Section 404 “will be” considered jurisdictional for the purposes of processing PLP’s permit application.\textsuperscript{561} In revising its PJD report and maps, PLP was directed to consider any areas it had initially mapped as “mosaics” of wetlands and uplands as 100% wetlands in its revised PJD maps. These modified maps were submitted in February 2018, after which the Corps issued a signed PJD\textsuperscript{562} for the project, determining that there are 15,591.99 acres of “waters of the United States,” including wetlands within PLP’s study boundary. The Corps assertion of jurisdiction is 406.69 acres more than the 15,185.3 acres that PLP estimated in its revised PJD, and 3083.29 acres more than what PLP estimated in its December 2017 PJD report.

The signed PJD, however, is based on outdated data and inadequate field surveys. The Corps should have rejected PLP’s PJD report and methodology as inadequate and invalid. Moreover, PLP has surveyed wetlands in an uneven manner across different project components and alternatives, undermining the ability of the Corps to conduct a proper LEDPA analysis.

\textsuperscript{559} PLP response to RFI 121 (posted to Pebble EIS website on June 14, 2019) and updated response to RFI 121 (posted to Pebble EIS website on June 18, 2019).

\textsuperscript{560} Pebble Project Preliminary Jurisdictional Determination Report, Prepared by HDR (December 2017).

\textsuperscript{561} The Corps’ written form accompanying its preliminary jurisdictional determinations states: This preliminary JD finds that there “may be” waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:” (underline added for emphasis) (see \url{http://www.spl.usace.army.mil/Portals/17/docs/regulatory/JD/AJD/JD_PJD form.pdf})

\textsuperscript{562} \url{https://www.pebbleprojecteis.com/files/POA-2017-271_Pebble_PJD signed.pdf}
The PJD report was based primarily on data collected a decade or more ago. PLP’s jurisdictional delineation efforts began in 2004, more than 13 years before PLP chose to submit its permit application. The Corps should not have accepted PLP’s wetland maps for the purposes of making a PJD because the majority of the supporting data were collected over a decade ago. National Corps policy considers jurisdictional delineations more than 5 years old to be expired because of the changes that can occur to wetland boundaries over time. The Corps should not have accepted PLP’s observations recorded in 2004-2008 as reliable under the Corps’ own policies, and in this regard, even the data from 2013 may be outdated. Data from 2017 could be considered current, although these data appear to be only within the proposed transportation corridor between Iliamna Lake and Cook Inlet, and do not serve to update or reaffirm observations made years earlier in the mine site area.

Moreover, over a decade ago – in 2007 – the Corps adopted an Alaska-specific regional supplement to its 1987 Wetland Delineation Manual that provides Alaska-specific guidance on how to delineate wetlands in Alaska and sub-regions within the State. Nearly all of the data collected for PLP’s PJD report utilized the outdated 1987 Wetlands Delineation Manual. Indeed, prior to submitting its permit application, the Corps informed PLP that it would not be accepting its wetlands delineation data utilizing the outdated 1987 Manual for purposes of its 404 permit application, stating of the outdated methods and data: “I might accept such a methodology for the NEPA discussion, but not for the determination of direct impacts, especially since their wetlands data is now more than 10 years old.”

A 2009 Corps Memo for the Record (POA-2003-803) explains that—even 10 years ago—PLP’s outdated data and methods are unacceptable for 404 permit review:

Grandfathering the use of the 1987 Corps Wetland Delineation Manual - PLP began work on field wetland determinations in 2004. The USACE began work on a regional supplement to the 1987 Corps Wetland Delineation Manual (1987 Manual) in 2005. During the time when the regional supplement was being developed, PLP asked for, and was granted permission to grandfather in the project under the 1987 Manual. At the time that the District agreed to grandfather in the PLP project, it was expected that the NEPA/EIS process would begin in 2009. [...] Any determinations made from the date of this memo must use the Alaska Regional Supplement to the 1987 Corps Wetland

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563 A third of PLP’s wetland delineation field data were collected in 2004, and more than 72% of its samples are at least 10 years old. Only the data from 116 of PLP’s 685 field sites might arguably fall within the 5-year expiration limit, as these were collected in 2013 (13 field sites) and 2017 (103 samples).

564 In supporting its policy that jurisdictional determinations expire after 5 years, the Corps Regulatory Guidance Letter 05-02 states: “Since wetlands and other waters of the United States are affected over time by both natural and man-made activities, local changes in jurisdictional boundaries can be expected to occur. As such, jurisdictional determinations cannot remain valid for an indefinite period of time.” (see http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/regl05-02.pdf)


Delineation Manual […]. The spot check should start with a desktop check. The amount of change found in the spot check will determine what percentage of the 2004 data must be re-surveyed. If the spot check reveals that the results may be substantially different, PLP may have to re-survey a larger portion of the field sites. If the spot check reveals gaps in the data due to requirements of the Alaska Regional Supplement to the 1987 Corps Wetland Delineation Manual (ARS), we would meet with PLP to discuss how those gaps would be filled in.

[Post-Meeting Note: Although the spot checks do not have to be done immediately, the data does have to be up to date at the time that the EIS process begins. All of the waters of the US under the PJD would then have been identified using the same methodology. The data collected using the 1987 Manual and within the area of direct impacts should be given priority in the spot checks. We anticipate that once the spot checks are complete for data not generated using the ARS, there would be a smaller yearly check of data that passes the 5 year limit.]

The Corps has no rational explanation for its change in position that led to the acceptance of a PJD for the proposed Pebble Mine Project, prior to conducting a very limited amount of field work and spot-checking in summer 2018. The Corps has no rational explanation for why, 10 years after it made the determination that PLP’s data was stale and no additional data was collected, it went on to accept PLP’s data. The Corps has no rational explanation for why it has issued a 404 Public Notice for this project without requiring the proper wetlands delineation. The Corps must require PLP to re-delineate the entire proposed project area based on the 2007 regional supplement, to better inform the potential impacts to wetlands. Without this information the Corps cannot determine the LEDPA and the public cannot be truly informed of the project’s impacts implicated among various alternatives. Therefore, once PLP has collected new wetlands delineation data based on the 2007 Manual, the Corps must re-issue the 404 Public Notice for review and comment. To do otherwise would be in violation of the CWA.

In addition, the Corps should require PLP to survey and delineate wetlands for every project component equally so that an adequate comparison of direct, indirect, and cumulative impacts can be made. To date, nearly all of the wetlands delineation field studies and descriptions have occurred in the mine site area and along the old proposed transportation corridor to the north of Iliamna Lake. PLP has proposed multiple transportation corridor routes in addition to the preferred alternative south of Iliamna Lake, such as a northern route, different spur roads, and a route around the west side of Iliamna Lake. To date, these alternatives have been inadequately studied or not studied at all. PLP presents no comprehensive study of wetlands to the south and west of Iliamna Lake. These alternative routes must be studied and delineated in the same manner as the wetlands at the preferred alternative and transportation corridor components within the mine site study area in order

for the Corps to properly assess the least environmentally damaging practicable alternative and to assess changes in corridor alignment to avoid and minimize impacts to wetlands.

3. **404 Permit Application Lack of Detail on Mitigation; Fails to Include an Adequate Compensatory Mitigation Plan**

The Corps’ regulations for CWA 404 permit applications require that any application “must include a statement describing how impacts to waters of the United States are to be avoided and minimized… [and] must also include either a statement describing how impacts to waters of the United States are to be compensated for or a statement explaining why compensatory mitigation should not be required for the proposed impacts.”

The same is true for the Corps’ regulations specifically governing compensatory mitigation: “the public notice must contain a statement explaining how impacts associated with the proposed activity are to be avoided, minimized, and compensated for.”

When a 404 Public Notice fails to contain substantive information on mitigation, courts have held that “the notices fail[] to provide an accurate picture of the Corps’ reasoning and prevent[] useful criticism on the part of the public in general. As a result, a lack of information on the mitigation in the notices deprive[] [the public] of an existing procedural right—the right to comment intelligently.”

The Corps has failed to provide specific information on PLP’s specific mitigation plans, including its plans for compensatory mitigation in its March 1, 2019 Public Notice. In order to comply with the CWA, the Corps must require this detailed mitigation and compensatory mitigation information from PLP and release it through a new 404 Public Notice for public review and comment. Moreover, as described below, failure to do so also violates NEPA’s public notice and comment requirements.

4. **404 Permit Application Mitigation—Failure to Conduct Required Functional Assessment for Wetlands and Streams**

The Corps’ arbitrary decision to forgo a functional assessment for wetlands and streams, despite previously deciding it was required for PLP’s proposal, and its failure to adopt an appropriate scientific surrogate means the proposed Pebble Mine Project cannot comply with the CWA and implementing regulations. The Draft EIS and PLP’s proposed Compensatory Mitigation Plan and 404 permit application fail to include a wetlands functional assessment, despite recommendations from EPA and the Corps that PLP provide one. The Corps should require PLP to undertake a functional assessment for wetlands and streams in order to

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569 33 C.F.R. § 325.1(d)(7).
570 33 C.F.R. §332.4(b)(1).
572 An agency’s reliance on documents to support their decision when those documents were not subjected to NEPA public review and comment is arbitrary and capricious when “the public never saw the [documents] and never had an opportunity to comment on them, ’frustrating NEPA’s goal of allowing the public the opportunity to play a role in the decisionmaking process.’” *Or. Natural Desert Assoc. v. Rose*, 2019 WL 1855419, *4, n.4 (9th Cir. Apr. 25, 2019), citing *Great Basin Res. Watch v. BLM*, 844 F. 3d 1095, 1104 (9th Cir. 2016).
understand the value of the streams and wetlands permanently destroyed under its proposal and to inform the required mitigation and compensatory mitigation.

In reviewing preliminary drafts of the EIS, the EPA recommended that the Draft EIS “include a description of the methodology for how the extent and type of the direct and indirect impacts to wetlands, streams, lakes, ponds and marine waters was estimated (e.g., how figure 4.22.02 was generated).” EPA further recommended that the Draft EIS “characterize the functions provided by the wetlands in the project area and include the findings regarding baseline conditions of these functions. […] ‘Wetland Functions and Values’ does not currently include a meaningful evaluation of aquatic resource functions performed by the different types of wetlands found in the project area.” The Corps responded to EPA’s comments by stating that “[a] functional assessment will not be prepared for this proposed project or this EIS.” The Corps also noted that, while it “[a]dded qualitative description of wetland and water functions in [the Draft EIS], [t]here is no existing functional assessment tool or methodology that covers the analysis area. The wetlands in the analysis area are considered to be functioning at maximum capacity given the lack of human disturbance in the analysis area.”

The Corps’ CWA Guidelines do not mandate a full functional assessment, although functional assessments are encouraged, except when there is no established methodology for conducting such an assessment in that region. In lieu of a formal functional assessment, however, the Corps must identify what objective proxies it is using, and explain why those methods are sufficient.

573 EPA, Pebble Project EIS, Comment Response Matrix, Section 4.22, p. 1, (referring to Draft EIS, p. 4.22-15, Table 4.22-2 (“Alternative 1 Transportation Corridor Wetlands and Other waters Direct Impacts (Acres)” as one of many examples of tables in Section 4.22 that quantify direct impacts without citing the methodology applied to the estimates.
574 EPA, Pebble Project EIS, Comment Response Matrix, Section 3.22, p. 9.
575 EPA, Pebble Project EIS, Comment Response Matrix, Section 4.22, p. 1.
576 EPA, Pebble Project EIS, Comment Response Matrix, Section 3.22, p. 9 (emphasis added).
577 40 C.F.R. § 230.91.
578 See Ohio Valley Environmental Coalition v. Aracoma Coal Co., 556 F. 3d 117, 199 (4th Cir. 2009) (finding that the Corps’ interpretation of its own regulations does not require a functional assessment when there was no functional assessment protocol in place for the region under assessment). The court held that the Corps’ substitute method of using its “best professional judgment” to evaluate functional loss was not arbitrary and capricious. Id. at 201.
579 Unlike in the Pebble Mine situation, in Ohio Valley Environmental Coalition, the Corps identified that it was using stream structure as a surrogate for assessing stream function. Id. at 199. The court found that the Corps based its conclusions on sufficiently objective methods and metrics, and deferred to the agency’s judgment. Here, the Corps has failed to even identify which substitute method it will employ. See also 33 C.F.R § 332.3(f). See also, Alliance to Save the Mattaponi v. Us Army Corps, 606 F. Supp. 2d 121, 133 (D.D.C. 2009) (“the Corps must explain why it believes that the methods used … in the functional assessment are a reliable basis for concluding that the …[m]itigation [p]lan will as a whole offset anticipated losses in these functional areas.”).
In Alaska, there is a pattern and practice of the Corps relying on functional assessments. But AK RGL 09-01, the functional assessment method “most commonly used in the past” by the Corps to assess wetland function in the Central and Northern regions of Alaska, was repealed in 2015. Nevertheless, it is insufficient and wholly inappropriate for the Corps to use the most controversial, largest wetlands fill application as its test pilot for skipping functional assessments or for failing to identify a substitute method. It is also particularly inappropriate in light of history of numerous letters of correspondence and meetings between PLP and the Corps indicating that the Corps initially told PLP that a functional assessment for Pebble Mine would be required as part of its 404(b) Clean Water Act Permit and that PLP indeed has a draft functional assessment it worked on for many years, but has never released to the public for review. For example, in an e-mail from the Corps to ADF&G in 2013, the Corps indicates that “in the past, when [PLP] have brought in functional assessments for wetlands, we have listened to them and provided comments, but declined to identify a preferred functional assessment. We have told them that we would request comments during the NEPA process to help advise us on the appropriate functional assessment to use.”

A further review of the record indicates that PLP has consulted the Corps since at least 2006 on a variety of proposed functional assessment methods that the Corps found “inappropriate” for reasons having to do with their lack of precedent in Alaska, the fact that some methods presented to the Corps for review were in fact not functional assessment methods at all, and because as presented the methods would require site-specific modifications to be acceptable in Alaska, among other reasons. Indeed, as PLP wrote to the Corps in 2013:

PLP strongly believes that USACE has a responsibility to determine if the proposed EPA/USFWS stream assessment method and HEA marine FA methods are acceptable. If the USACE is not comfortable with these methods

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581 See, e.g. attached Appx. F, USACE Internal Memo, “Discussion of Pebble Project Wetlands Program Procedures & Agreements Memo” at 2. See also, USACE, CEPOA-RD MEMORANDUM FOR RECORD, “POA-2003-803, Koktuli River. Pebble Limited Partnership meeting notes from July 7, 2009” (“PLP asked if we had any objections to the use of the Magee Method. While we do not have any documentation of the previous project manager accepting this method we indicated Magee was a reasonable choice given the absence of a functional assessment for the region. However, because we understood that Magee had been modified to adjust to Alaska, we asked that we be given a document that spells out how the published method was modified, for both our review and inclusion into the file. [Post-Meeting Note: PLP, in an email dated July 9, 2009, indicated that no modifications have been made to the Magee Method. We want to emphasize that functional assessments are required for all types of waters of the U.S., including but not limited to streams, mud flats and marine environments. The Magee method only addresses freshwater wetlands.”) (emphasis added).

582 See attached Appx. F, USACE Internal E-mail from Katie McCafferty (Corps) to Kate Harper (ADF&G) “RE: Functional Assessments, marine and stream on Pebble project (UNCLASSIFIED), (March 27, 2013).

583 See attached Appx. F, USACE Internal E-mail from Cheryl Moody (Nov. 27, 2006).

584 See attached Appx. F, USACE, Letter from Katherine A. McCafferty (USACE) to Tim Havey (PLP) (Jan. 30, 2014).
then the USACE has the responsibility to propose modifications to the method, or to propose a different method. PLP acknowledges that as the functional assessment is conducted and reported to USACE, that USACE may require additional information and/or further modifications to the method. PLP respectfully requests that USACE consult with the other interested federal agencies, review these methodologies and respond to PLP with an acceptable method for the marine and flowing waters functional assessment methodology.\textsuperscript{585}

Consequently, without identifying a substitute functional assessment methodology, the Corps provides no basis for determining that a functional assessment is not required and cannot ensure the proposed Pebble Mine Project complies with the CWA. The Corps has also provided no basis for determining that the mitigation plan is capable of offsetting the lost functions by failing to indicate a substitute method, since apparently the Corps has rescinded its prior statements to PLP that NEPA and assessment of a 404 Permit Application requires a functional assessment. Indeed, even the Corps, in comments on PLP’s draft Compensatory Mitigation Plan “recommend[s] stating how, in the absence of a functional assessment, [PLP] will justify that the proposed comp mit would provide sufficient offset for the lost aquatic functions.”\textsuperscript{586} In making this statement, the Corps cites to its own regulations at 33 CFR 332.3(f), thus indicating that it knows compliance with its compensatory mitigation regulations requires an analysis of lost aquatic functions.

EPA also identified this issue with PLP’s draft Compensatory Mitigation Plan and compliance with the CWA, stating that without a proxy functional assessment method identified, and without site-specific information, PLP’s permit application fails to provide an adequate basis for how function loss would be determined:

Since a function or condition assessment was not used, the CMP should clarify how it will comply with the Mitigation Rule’s requirements regarding the amount of compensation, which state that “[i]f a functional or condition assessment or other suitable metric is not used, a minimum one-to-one acreage or linear foot compensation ratio must be used” and “[t]he district engineer must require a mitigation ratio greater than one-to-one where necessary to account for the method of compensatory mitigation (e.g., preservation), the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of aquatic resource functions, the difficulty of restoring or establishing the desired aquatic resource type and functions, and/or the distance between the affected aquatic resource and the compensation site. The rationale for the required

\textsuperscript{585} See attached Appx. F, Letter from Charlotte L. MacCay, PLP Director, Permitting and NEPA, to Katie McCafferty, Army Corps of Eng’rs Project Mgr (May 27, 2013).

\textsuperscript{586} See attached Appx. F, “USACE Comments on CMP (UNCLASSIFIED) » (Dec. 17, 2018) (citing 33 CFR 332.3(f)).
replacement ratio must be documented in the administrative record for the permit action.” (33 CFR 332.3(f)/40 CFR 230.93(f)). For example, the CMP should clarify if a minimum one-to-one acreage ratio (or higher based on the factors in 33 CFR 332.3(f)(2)/40 CFR 230.93(f)(2)) is being proposed for impacts to wetlands, lakes, and ponds and if a minimum one-to-one linear foot ratio (or higher based on the factors in 33 CFR 332.3(f)(2)/40 CFR 230.93(f)(2)) is being proposed for impacts to streams. The CMP should include the supporting rationale for the approach used.\textsuperscript{587}

Moreover, as stated by EPA:

While we understand that a functional assessment was not conducted, compensatory mitigation is designed to offset lost aquatic resource functions. Thus, information regarding the type and magnitude of aquatic resource functions that are expected to be lost or degraded is necessary to inform any compensatory mitigation plan. Accordingly, Sections 3 and 6 should be supplemented with at least the following information:

- a description of the functions provided by each of the categories of resources described in Tables 3-2, 6-1, and 6-2;
- a description of the level at which these functions are being performed pre-project impact (i.e., baseline conditions at impact site). In this case, each category of resources appears to be performing its set of functions at optimum levels because these resources have not experienced man-made alterations; and,
- as part of Section 6, a description of the level at which these functions are expected to be performed after the project discharges of dredged or fill material occur. For example, permanent direct impacts would eliminate these functions and permanent indirect/secondary impacts would degrade existing functions.

The HGM classification framework utilized in these tables could facilitate the steps described above for the wetland resources because the HGM classification system is the basis for many wetland functional assessment methods including a number developed for other regions of Alaska (Slope/Flat wetlands in Cook Inlet Basin Ecoregion, Riverine and Slope River Proximal wetlands in coastal southeast and southcentral Alaska).

Attached to this table, please find an extensive list of citations for peer-reviewed scientific literature and government reports that provide information

\textsuperscript{587} EPA Comments, Pebble Project Draft Compensatory Mitigation Plan, Pebble Limited Partnership, November 2018, p. 8 (Jan. 31, 2019) (“Corps stated that wetland functional assessments were required.”)
regarding the functions provided by these types of wetlands, streams, and other aquatic resources.\textsuperscript{588}

The Corps did not offer a reasoned explanation to EPA’s concerns regarding how anticipated losses to the functional areas will be sufficiently offset if baseline information on the functions expected to be lost provided in the PLP’s 404 permit application is insufficient.

Furthermore, by providing inadequate baseline conditions, the Corps’ alternatives impact assessment is meaningless,\textsuperscript{589} as stated by EPA:

[The EPA] recommend[s] adding an analysis describing how the baseline conditions for each of the functions performed by the aquatic resources impacted by the project are expected to change with each project alternative. This is a critical component of analysis for this section of the DEIS in order to adequately characterize the likely impacts of each alternative.\textsuperscript{590}

In sum, by failing to adopt a substitute functional assessment methodology, or explain why, in its best professional judgment, frameworks widely used as the basis for wetlands functional assessments in Alaska were not considered in the Draft EIS or otherwise required to be modified for the project, the Corps has failed to address the required assessment and mitigation considerations under the CWA Guidelines. PLP’s 404 permit application should be revised to include a functional assessment for streams or wetlands as required to properly assess impacts and compensation for lost functions. At the least, if a functional assessment is not required, the Corps should indicate the substitute functional assessment method selected in lieu of a formal functional assessment, and provide sufficient rationale explaining how such method is capable of offsetting anticipated losses to wetlands found to be functioning at “maximum capacity.”

5. \textit{404 Permit Application and Compensatory Mitigation Plan Lacks Required Analysis and Determination of Financial Assurances}

As part of reviewing and approving the Compensatory Mitigation Plan (CMP), the Corps regulations require that PLP provide “financial assurance” to cover mitigation costs:

Financial assurances. (1) The district engineer shall require sufficient financial assurances to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with applicable performance standards....”\textsuperscript{591}

\textsuperscript{588} EPA Comments, Pebble Project Draft Compensatory Mitigation Plan, Pebble Limited Partnership, November 2018, pp. 3-4 (Jan. 31, 2019).

\textsuperscript{589} See, e.g., Draft EIS, p. 3.22.2 (indicating portions of the EIS Analysis area that lack field-verified mapping data for wetlands and other data gaps).

\textsuperscript{590} Pebble Project Comment Response Matrix, EPA Comments on Preliminary Draft EIS Section 4.22, at page 1

\textsuperscript{591} 33 C.F.R. § 332.3(n)(1).
“The final mitigation plan must include […] financial assurances.”592 “The rationale for determining the amount of the required financial assurances must be documented in the administrative record for either the DA permit or the instrument.”593 The mitigation plan must include: “[a] description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with its performance standards.”594 Furthermore, under the CWA 404(b)(1) Guidelines, “the district engineer must assess ... the costs of the compensatory mitigation project.”595 Finally, under the Corps’ Regulatory Guidance Letter No. 05-1, “District engineers must document the analysis used to determine the amount of the financial assurance, and must include this analysis in the administrative records for their permits.”596

PLP’s draft Compensatory Mitigation Plan fails to include any details about financial assurances, as required by the Corps regulations. Instead, the CMP merely states that these details will be forthcoming: “A description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with its performance standards.”597

Despite the requirement that the amount and analysis of the financial assurance to cover the mitigation plan be included in the final permit, neither the 404 permit application, draft Compensatory Mitigation Plan, nor the Draft EIS contain any cost information or estimation or demonstration of financial assurances. Rather, the Corps has outright and improperly dismissed its regulatory responsibility, stating: “The estimated financial assurance amount will be developed in support of State permitting and the Reclamation Plan Approval and Closure Cost Estimate and bonding. The effectiveness of the mine plan is not defined by how much it costs but by how the issues are understood and addressed. The estimated financial assurance amount is a function of the plan, the plan is not a function of the cost estimate.”598

If the Corps issues a 404 Permit without financial assurances information, it will be in violation of its own regulations and guidance. The Corps must remedy this inadequacy by

592 33 C.F.R. § 332.4(c)(1)(i); § (c)(13) is “Financial assurances.” 33 C.F.R. § 332.4(c)(13).
593 33 C.F.R. § 332.3(n)(2).
594 Id. at § 332.4(c)(13); see also id. at § 332.3(k)(2) (“permit conditions ... must ...(iv) Describe any required financial assurances or long-term management provisions for the compensatory mitigation project, unless they are specified in the approved final mitigation plan.”).
595 40 C.F.R. §§ 230.93(a)(1), (m), (n).
598 Comment Response Matrix, Army Corps Response to EPA Comments on Pebble Project Preliminary Draft EIS, Ch. 2, comment no. 41, at page 25.
requiring a description of financial assurances in PLP’s CMP and independently reviewing the financial assurances to ensure a high level of confidence that the compensatory mitigation project will be successfully completed.

Moreover, as stated by cooperating agencies, the public should be afforded the opportunity to review and comment on the proposed financial assurances in both the NEPA and 404 public comment periods:

- EPA: “As discussed in our scoping comments, we recommend that the DEIS disclose the estimated financial assurance amount. This information is necessary to assess the effectiveness of reclamation and closure activities, which is critical to the assessment of environmental consequences of the project at and beyond closure.”\textsuperscript{599}

- EPA: “As discussed in our scoping comments, we recommend that the draft EIS disclose the estimated financial assurance costs to reclaim and close the site, including long term water treatment costs. We believe that this information is necessary to evaluate the effectiveness of reclamation and closure, which is a key component in determining the environmental impacts of the Pebble project. Our scoping comments provide recommendations on the level of detail to include.”\textsuperscript{600}

- State of Alaska DEC: “The discussion of reclamation and closure bond package in paragraph five on this page addresses the State of Alaska's bonding very briefly. With the concerns of local residents and other stakeholders in mind, you may want to beef up this discussion to reflect the level of detail provided in the Financial Assurance information found in Appendix A of the Donlin Mine EIS. Please provide additional information on the State of Alaska financial assurance requirements.”\textsuperscript{601}

- Nondalton Tribal Council: “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

\textsuperscript{599} Comment Response Matrix, EPA Comments on Pebble Project Preliminary Draft EIS, Ch. 2, comment no. 41, at page 25.
\textsuperscript{600} Comment Response Matrix, EPA Comments on Pebble Project Preliminary Draft EIS, Section 4.1, comment no. 12, at page 5.
\textsuperscript{601} State of Alaska DEC Comments on Pebble Project Preliminary Draft EIS Ch. 3 and 4 (Aug. 31, 2018), excel spreadsheet line 153.
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.\footnote{Comment Response Matrix, Nondalton Tribal Council Comments on Pebble Project Preliminary Draft EIS, Ch. 2, comment no. 16, at page 11.}

Indeed, it is standard practice for hardrock mines in Alaska to include draft financial assurances documents in Draft EISs for public review and comment.\footnote{See, attached Appx. E, at pages 1379 to 1393, Chambers, David M., Comments on Pebble Draft Environmental Impact Statement (May 20, 2019), at pages 2, 3-4.} To comply with NEPA and 404 public process requirements, the Corps should require financial assurances information from PLP and revise and re-issue the Draft EIS and 404 Public Notice for public comment and review of the proposed financial assurances.

6. 404 Permit Application Lack of Information on Type of Fill

The Corps’ regulations for CWA 404 permit applications require that any application “must include a description of the type, composition, and quantity of the material to be dredged.”\footnote{33 C.F.R. § 325.1(d)(3).} PLP’s permit application fails to include this information. EPA pointed out this lacking information quickly to the Corps in February 2018 after the Corps issued a Public Notice (PN) for the project, but the Corps has steadfastly refused to require PLP to produce the information required by its own regulations. According to EPA, “while the PN refers to an application to discharge ‘fill material’ into waters of the United States, the PN does not disclose the proposed discharge of ‘dredged material.’ […] To ensure a complete and effective CWA Section 404 review for all elements of this project, we recommend that future PNs include all proposed discharges of dredged material and fill material into waters of the United States, including wetlands.”\footnote{Letter from R. David Allnutt, Director, EPA Office of Environmental Review and Assessment, to Sheila Newman, USACE Regulatory Div. Program Mgr. (Feb. 5, 2018).}

Indeed, PLP does not have this information for all project components and the Draft EIS and correspondences between the Corps and PLP note that this information, some of which is contained in ongoing geotechnical boring data work, remains to be collected and will not be available prior to release of the Final EIS.\footnote{See e.g., RFI 14a regarding Geotechnical Boring Data (May 14, 2019) (“PLP is not proposing to complete the final field report for the geotechnical boring program this year. The report will be updated following collection of additional data from the instrumentation installed in the borings and is not anticipated to be available prior to completion of the FEIS.”).} PLP has not provided the Corps with geotechnical information related to any of the proposed road construction materials sites where millions of cubic tons will be extracted and used for road fill. Instead, the Draft EIS

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602 Comment Response Matrix, Nondalton Tribal Council Comments on Pebble Project Preliminary Draft EIS, Ch. 2, comment no. 16, at page 11.
604 33 C.F.R. § 325.1(d)(3).
606 See e.g., RFI 14a regarding Geotechnical Boring Data (May 14, 2019) (“PLP is not proposing to complete the final field report for the geotechnical boring program this year. The report will be updated following collection of additional data from the instrumentation installed in the borings and is not anticipated to be available prior to completion of the FEIS.”).
notes that “[f]inal volumes of these gravel materials, and specific location of material sites and development plans for those sites, would be part of the final project design.”

Moreover, PLP has not provided the Corps with adequate geotechnical of geochemical data related to the mine site, materials to be quarried and used for construction, and the geology beneath proposed embankments. According the Draft EIS PLP has only conducted “[p]reliminary testing of quarried rock material [and] [f]urther detail would need to be developed in support of state permitting and the Reclamation Plan Approval requirements, and Closure Cost Estimate and bonding requirements.”

As the Draft EIS and RFIs released subsequent to the Draft EIS admit, this information is essential to review under NEPA, and yet it will not be available until after the Final EIS, possibly even after the ROD. An array of impacts can flow from the geology of a chosen materials sites to be used for fill, including the use of undesirable road materials containing PAG rock and mercury, commonly and randomly distributed throughout the proposed road corridor regions. If the geology of these proposed materials sites is not first tested, the Corps cannot possibly analyze the potential impacts to wetlands, waters, and aquatic life from using this material as road fill.

If the Corps fails to include geologic baseline data essential for project design and analysis of impacts under 404, it will be in violation of the CWA. As noted by the Corps’ regulations, this information is required for a 404 permit application and PLP must provide it. Once PLP provides information on the type of proposed fill and its chemical and physical properties, the Corps should revise the 404 Public Notice and hold another comment period with the permit applications details and changes noted.

7. 404 Permit Application Fails to Include an Independent Review of Impoundment Structures

The Corps regulations regarding the contents of a 404 permit application provide that, for activities involving the construction of impoundment structures, “the applicant may be required to demonstrate that the structure complies with established state dam safety criteria or that the structure has been designed by qualified persons and, in appropriate cases, independently reviewed (and modified as the review would indicate) by similarly qualified

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607 Draft EIS, at page 2-58.
608 Draft EIS, at page 2-18.
609 PLP response to RFI 0014a, Geotechnical Boring Program Report (sent to PLP on March 1, 2019, response requested by March 15, 2019) (“PLP is not proposing to complete the final field report for the geotechnical boring program this year. The report will be updated following collection of additional data from the instrumentation installed in the borings and is not anticipated to be available prior to completion of the FEIS.”).
610 See Draft EIS, page 4.27-59 (“Mercury is naturally present at low levels in some rock formations within the project area.”).
persons.” Emphasizing the importance of independent review, the regulations also state that “independent detailed engineering review [is not] to be made by the district engineer.”

Following the Mount Polley tailings dam failure, PLP’s CEO is on record that the company would submit its impoundment engineering design to independent review prior to permitting:

To ensure that Pebble meets the standards and expectations of Alaskans, PLP CEO Tom Collier has committed to submit the engineering design for the project’s tailings storage facility to an independent review prior to initiating permitting.

PLP’s CEO also reiterated this promise in testimony to U.S. Congress: “we would not go forward with any permit application without an independent review.”

As such, EPA specifically recommended that the Corps require an independent engineering review as part of the 404 permit application review:

“…given the size of the dams and importance of downstream aquatic resources, and for the bulk TSF, centerline dam construction methodology (which is not as stable as downstream construction), we recommend that: (1) a Failure Modes Effect Analysis (FMEA) or other type of formal risk assessment be conducted for the dam designs; and (2) the Corps require that the tailings dam designs be independently reviewed per 33 CFR 325.1. FMEA/risk assessment and independent review are recommended best practices from both the Independent Expert Engineering investigation and Review Panel Report on Mount Polley Tailings Storage Facility Breach (2014) and the International Council on Mining and Metals Review of Tailings Management Guidelines and Recommendations for Improvement (Golder 2016) for evaluating safety and stability of tailings dams. Mitigation measures arising out of the risk assessment and independent reviews should be identified and required of the final designs and operating plans. We recommend that the FMEA/risk assessment and independent review occur now so that the results can be disclosed in the DEIS to support the Corps’ hard look, as required by NEPA, at tailings dam stability and safety.”

611 33 C.F.R. § 325.1(d)(6).
612 Id.
614 Statement of Tom Collier, PLP CEO, Hearing before the Committee on Science, Space, and Technology, U.S. House of Representatives, Examining EPA’s Predetermined Efforts to Block the Pebble Mine, Part I (Nov. 5, 2015), at p. 94, available at https://www.govinfo.gov/content/pkg/CHRG-114hrg97767/pdf/CHRG-114hrg97767.pdf. (“I’m on record, have been since the Mount Polley situation occurred, that we would not go forward with any permit application without an independent review of anything that Knight Piesold came close to on our project.”).
615 Comment Response Matrix, EPA Comments on Pebble Project Preliminary Draft EIS, Ch. 2, comment no. 14, pages 6-7 (emphasis added).
Despite the importance of the pristine Bristol Bay watershed, importance of the aquatic resources, the potential for toxic discharges in the event of impoundment failures, and the promises made by PLP, Army Corps has declined to require that PLP conduct an independent review of its impoundment structures during the 404 permitting process, stating:

“During detailed design and as the project proceeds through the ADSP permit process, PLP has stated that it will engage an independent review panel. Additionally, the State of Alaska is certain to continue its practice of using independent SMEs to review the preliminary and detail designs, and to require continuance of the independent review panel during the construction of the embankment raises and operations of the TSFs.”

The Corps does not present a rational reason to forgo independent review of PLP’s impoundment designs. In the face of the risks posed to the world’s greatest salmon fishery in the case of impoundment failure from the proposed Pebble Mine Project, the Corps should require an independent and detailed engineering review of the proposed impoundment designs as part of PLP’s 404 permit application, as provided for in regulation.

8. 404 Permit Application Failure to Obtain Property Owner Permissions

The Corps’ regulations for CWA 404 permit applications require a signed affirmation from the project applicant that it “possesses or will possess the requisite property interests to undertake the activity proposed in the application.” The Draft EIS is correct in stating that “the natural gas pipeline corridor would cross subsurface lands owned by Cook Inlet Region, Inc. and Bristol Bay Native Corporation [and] [u]ses on these surface and subsurface lands privately owned by Alaska Native corporations are subject to the approval of the landowners.” BBNC has opposed the Pebble Mine Project for ten years and has expressed in person and in writing to PLP many times over the years that BBNC has not extended and will not extend to the Pebble Limited Partnership any permission to occupy or trespass on BBNC’s lands or to make use of BBNC’s subsurface resources. BBNC has also made this position known to the Corps in public statements, public hearing testimony, and in writing.

PLP knew when it signed its 404 permit application that BBNC lands would not be available to it, and yet, PLP’s proposed alternative would bisect and utilize BBNC subsurface resources for its proposed natural gas pipeline and materials sites to construct its road. PLP thus submitted its permit application to the Corps under false pretenses.

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616 Comment Response Matrix, Army Corps Response to EPA Comments on Pebble Project Preliminary Draft EIS, Ch. 2, comment no. 14, pages 6-7.
617 33 C.F.R. § 325.1(d)(8).
618 Draft EIS at page 4.2-4.
619 See attached Appendix A.
620 See attached Appendix A.
affirm to the Corps that it possesses or will possess the requisite property interest to undertake its proposal, as BBNC was not and is not willing to allow PLP to possess its subsurface estate. The 404 permit application should thus be denied. Any issuance of the 404 permit would be arbitrary and capricious as the Corps cannot rely on PLP’s statements in the face of BBNC’s forbiddance and PLP’s is unable to obtain the property rights necessary to carry out its proposal.

V. COMMENTS ON THE PROPOSED PEBBLE PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT

NEPA requires the Corps to describe a legitimate purpose and need, identify reasonable project alternatives, fully evaluate a “no action” alternative, obtain missing information critical to define the scope of the EIS, and take an adequate amount of time to fully consider the impacts of the proposed project. The current Draft EIS is woefully inadequate and fails to comply with NEPA. In order to achieve compliance, the Draft EIS requires new alternatives, new analysis, and other major modifications. Most of these modifications cannot be made unless the Corps stops the NEPA process to allow PLP to acquire and submit missing project information, advanced and detailed project plans, missing baseline data, state permit applications, and missing federal permit applications. Only after this information has been obtained and properly integrated into the Draft EIS can it be re-issued for public comment.

Specifically, the Draft EIS must be revised and re-issued for public comment, because, as described in detail below: (1) improper public process has stunted the NEPA scoping process and the Draft EIS review (2) the Draft EIS scope of analysis was improperly narrowed by the Corps’ improper purpose and need and its failure to independently assess the need for the project; (3) the Draft EIS improperly segments the Pebble Mine project; (4) the Draft EIS fails to include a reasonable range of alternatives, consisting instead of mere project variants and no viable transportation corridor alternative; (5) the Draft EIS fails to include key information, baseline surveys, advanced project designs, and analysis essential for public review; (6) the Draft EIS improperly relies on and tiers its environmental analysis to future state and federal permits that have not yet been applied for or made available for public review and will not be incorporated into the NEPA process for public review; (7) the Draft EIS fails to take a hard look at the myriad impacts associated with the proposed Pebble Mine Project; and (8) the Draft EIS fails to adequately describe and assess mitigation measures that might lessen project impacts.

A. THE NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act of 1970 (NEPA) is one of our nation’s earliest and most important environmental statutes. It was prompted by the 1969 Santa Barbara offshore well blowout and oil spill:

621 42 U.S.C. § 4321 et seq.
The nation was confronted with an environmental disaster of unprecedented proportions that might have been avoided but for a failure of federal oversight. ... 

The White House Council on Environmental Quality later acknowledged that “[t]he federal government had largely ignored the need to protect commercial, recreational, aesthetic, and ecological values of the area.”

NEPA was enacted one year after the spill and, over the ensuing half-century, it has served as “our basic national charter for protection of the environment.” Congress recognized that “environmental factors” had “frequently been ignored and omitted from consideration in the early stages of planning.” NEPA thus “emphasizes the importance of coherent and comprehensive up-front environmental analysis” so that the “agency will not act on incomplete information, only to regret its decision after it is too late to correct.” Accordingly, NEPA requires environmental concerns to be “integrated into the very process of agency decision-making.”

To achieve these objectives, NEPA requires federal agencies to prepare a “detailed statement” of environmental impacts for all proposed federal actions significantly affecting the quality of the human environment. The EIS is meant to “insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.” An EIS must provide a “full and fair discussion of significant environmental impacts,” and it must “apprise decisionmakers of the disruptive environmental effects that may flow from their decisions at a time when they retain a maximum range of options,” and the “appropriate time for preparing an EIS is prior to a decision.” The Ninth Circuit has “repeatedly held that dilatory or ex post facto environmental review cannot cure an initial failure to undertake environmental review.”

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622 California v. Norton, 311 F.3d 1165-66 (9th Cir. 2002) (internal citations omitted).
623 Ilioulaokalani Coalition v. Rumsfeld, 464 F.3d 1083, 1093 (9th Cir. 2006) (quoting 40 C.F.R. § 1500.1(a)).
626 Andrus, 442 U.S. at 350. See Ilioulaokalani, 464 F.3d at 1093 (explaining that NEPA requires federal agencies to “carefully weigh environmental considerations ... before the government launches any major federal action”) (emphasis added, quoting Lands Council v. Powell, 395 F.3d 1019, 1026 (9th Cir. 2005)).
628 40 C.F.R. § 1500.1(b).
629 40 C.F.R. § 1502.1.
630 Pit River Tribe v. U.S. Forest Service, 469 F.3d 768, 785 (9th Cir. 2006) (quoting Conner v. Burford, 848 F.2d 1441, 1446 (9th Cir. 1988), cert. denied 489 U.S. 1012 (1989)).
631 Sierra Club v. Peterson, 717 F.2d 1409, 1414 (D.C. Cir. 1983) (emphasis added, citations omitted). See Andrus, 442 U.S. at 351 (quoting 40 C.F.R. § 1501.2); Pit River Tribe, 469 F.3d at 785 (“Federal regulations explicitly, and repeatedly, require that environmental review be timely.”); Ilioulaokalani, 464 F.3d at 1093 (emphasizing that NEPA is meant to ensure that environmental information is “available to public officials and citizens before decisions are made and before actions are taken”) (emphasis added, quoting 40 C.F.R. § 1500.1(b)).
632 Pit River Tribe, 469 F.3d at 785.
The comprehensive “hard look” required under NEPA “must be timely, and it must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.”

Federal agencies must “[e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment.” NEPA’s public participation requirements “guarantee” that environmental information “will be available to a larger audience.” The language of an EIS must therefore be “clear,” “be written in plain language,” and presented in a way that “the public can readily understand,” and the EIS must be “supported by evidence that the agency has made the necessary environmental analyses.” The information in an EIS must also be of high quality” because “[a]ccurate scientific analysis . . . and public scrutiny are essential to implementing NEPA.” An EIS that fails to enable meaningful public review and understanding of the agency’s proposal, methodology, and analysis of environmental consequences violates NEPA.

Moreover, an agency’s reliance on documents to support their decision when those documents were not subjected to NEPA public review and comment is arbitrary and capricious when “the public never saw the [documents] and never had an opportunity to comment on them, ‘frustrating NEPA’s goal of allowing the public the opportunity to play a role in the decisionmaking process.’”

If not satisfied that a 404 permit application and supporting materials are sufficient to prepare an EIS, the Corps “may require the applicant to furnish appropriate information that the district engineer considers necessary.” Moreover, if the Corps considers additional information or data inadequate or inaccurate, the district engineer “may ... require the applicant to resubmit any previously submitted data.” In responding to public comments

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633 Metcalf v. Daley, 214 F.3d 1135, 1142 (9th Cir. 2000) (quoting Save the Yaak Committee v. Block, 840 F.2d 714, 718 (9th Cir. 1988)).
634 40 C.F.R. § 1500.2(d).
635 Te-Moak Tribe v. U.S. Dept. Interior, 608 F.3d 592 (9th Cir. 2010) (quoting Inland Empire Pub. Lands Council v. U.S. Forest Serv., 88 F.3d 754, 758 (9th Cir.1996)).
636 Earth Island Inst. v. U.S. Forest Service, 442 F.3d 1147, 1160 (9th Cir. 2006); 40 C.F.R. § 1502.8; see also Or. Envtl. Council v. Kunzman, 817 F.2d 484, 493 (9th Cir. 1987) (“An EIS must be organized and written so as to be readily understandable by governmental decisionmakers and by interested non-professional laypersons likely to be affected by actions taken under the EIS.”).
637 40 C.F.R. § 1502.1; see also 40 C.F.R. § 1502.8.
638 40 C.F.R. § 1500.1(b).
639 See, e.g., California ex rel. Lockyer v. U.S. Forest Serv., 465 F. Supp. 2d 942, 948-50 (N.D. Cal. 2006) (“incomprehensible” national monument management plan and corresponding EIS violated NEPA where it contained conflicting and confusing statements regarding applicable standards for management)
on a Draft EIS, the agency may: (1) “[m]odify alternatives including the proposed action;” (2) “[d]evelop and evaluate alternatives not previously given serious consideration by the agency;” (3) “[s]upplement, improve, or modify its analyses;” (4) “[m]ake factual corrections;” and/or (5) “[e]xplain why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support the agency’s position.”643

If changes to the EIS made by the agency in response to comments are “minor and are confined to the responses described in paragraphs (a)(4) and (5) of this section,” agencies “may write them on errata sheets and attach them to the statement instead of rewriting the draft statement.”644 On the other hand, non-minor changes that require modified or new alternatives or analyses generally require revision or supplementation of the Draft EIS.645 “If a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion.”646 The agency must then seek public comment on the revised Draft EIS.647

Finally, the duty to comply with NEPA falls to the federal agency, not to the public. The Corps cannot shift the burden to the public to fulfill the role of gathering information necessary to inform the analysis of a project’s impacts. Compliance with NEPA is a “primary duty of every federal agency.”648 It is “up to the agency, not the public, to ensure compliance with NEPA in the first instance.”649

B. THE NEPA PUBLIC PROCESS AND THE CORPS’ DRAFT EIS IS INADEQUATE AND MUST BE REVISED AND RE-RELEASED FOR PUBLIC COMMENT

The Corps must “encourage and facilitate” public involvement in decisions that affect the environment.650 In doing so, the Corps must “[m]ake diligent efforts to involve the public in preparing and implementing their NEPA procedures.”651

The Corps has failed to fulfill its procedural duties under NEPA. The Corps’ Draft EIS is so inadequate and the timeline for review so short that the process has impeded adequate

643 C.F.R. § 1503.4(a).
644 40 C.F.R. § 1503.4(c).
645 See 40 C.F.R. §§ 1503.4, 1502.9(a) & (c).
646 40 C.F.R. § 1502.9(a).
647 See 40 C.F.R. §§ 1502.9(a), 1503.1(a)(4); see also California v. Block, 690 F.2d 753, 771 (9th Cir. 1982) (“Only at the stage when the Draft EIS is circulated can the public and outside agencies have the opportunity to analyze a proposal and submit comment. No such right exists upon issuance of a final EIS.”).
648 City of Davis v. Coleman, 521 F.2d 661, 671 (9th Cir. 1975); see also Te-Moak Tribe of W. Shoshone of Nev. v. U.S. Dep’t of the Interior, 608 F.3d 592, 605 (9th Cir. 2010) (NEPA “ensures that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process”) (quoting and emphasizing Balt. Gas & Elec. Co. v. Natural Res. Def. Council, Inc., 462 U.S. 87, 97 (1983));
649 City of Davis v. Coleman, 521 F.2d 661, 678 (9th Cir. 1975).
650 40 C.F.R. § 1500.2(d).
651 40 C.F.R. § 1506.6(a).
environmental analysis and meaningful review by the public. Moreover, in its haste, the Corps has improperly shut out cooperating agencies and interfered with their ability to review and assist the NEPA process. Overall, the process has resulted in missing information, inadequate analysis, and outright misstatements of fact in the Draft EIS. The Draft EIS must therefore be revised and re-released for public comment.

In multiple correspondences with the Corps,652 BBNC and other Bristol Bay leaders have consistently expressed the following concerns with the Corps’ handling of the NEPA process, including:

- Inadequate permit application and supporting baseline information and studies
- Inadequate scoping timeline, inadequate number of public hearings spaced quickly together, and without translation services
- Outdated baseline studies lacking for many new project components
- Significant changes to preferred project design mid-scoping process and the failure of the Corps to require an amended permit application
- The Corps’ failure to conduct Alaska Native Corporation consultation
- Failure of PLP to submit State permit applications containing the supporting details necessary to inform public review of the proposed project during the scoping period
- Pushing forward with a Draft EIS in January 2019 before the essential baseline data and studies and State permit applications have been submitted and analyzed by the public

Moreover, the Corps has provided an equally short period to take comments on the Draft EIS, review the comments, incorporate changes, respond to comments and complete a final EIS — all proposed to be completed in less than two years.653 PLP is currently proposing to conduct many multi-year surveys and studies to assess, among other things, impacts to fish and wildlife populations and habitat, water quality, geotechnical design parameters, cultural resources, and project economics. The Corps EIS timeline guarantees that the final EIS will be issued before many of these essential studies are completed. Despite these blatant deficiencies in the Corps’ NEPA analysis, public documents indicate that the Corps is relentlessly pursuing arbitrary timelines.654

652 See attached Appendix F for correspondences from BBNC to the Corps regarding inadequate NEPA and permitting process.
653 https://pebbleprojecteis.com/schedule
654 See Army Corps e-mail to AECOM (Feb. 16, 2019) (“three things are apparent, 1) we need to re-engage in weekly updates with detailed discussions of pending deliverables (including USACE, PLP, AECOM, and CAs deliverables) so that we are aware of outstanding information and can better set timelines and understand the potential implications to the schedule; 2) AECOM cannot consistently meet deliverable deadlines despite a number of assurances that adjustments are being made, and 3) AECOM has not made sufficient staffing and resource adjustments to ensure that QA/QC, delivery dates, and therefore schedule, are met”); see also E-mail chain between Shane McCoy (USACE) and David Seris (USCG) (March 19, 2019) (agreeing to “start with a JROD signing date of 30 April, 2020 and work back from there”); see also AECOM Progress Report (March 13, 2019) (noting a “Record of Decision: Thursday, June 4, 2020” on the calendar on p. 4).
Two months before public release of the Draft EIS, cooperating agencies expressed the following concerns to the Corps regarding internal drafting processes leading to the Draft EIS:

- **Lake and Peninsula Borough**: “a number of important comments were not incorporated, and we have had no opportunity to discuss them with you or the EIS contractor. […] it appears that without some discussion with you or the contractor to either express ourselves or understand why the comments were not used, we are destined to repeat ourselves. We had hoped a cooperating agency relationship would involve more two-way communication and collaboration.”

- **Nondalton Tribal Council**: “USACE has, at every opportunity, acted to minimize and undermine the role of cooperating agencies during the development of this PDEIS. Cooperating agencies have not been meaningfully involved in informing the EIS. When cooperating agencies have provided comments, in this cooperating agency’s experience, those comments have been ignored. Thus, this PDEIS does not provide a full and fair disclosure of probable impacts of the proposed project, and it does not provide a sound basis for agency permit decisions.”

- **Nondalton Tribal Council**: “The USACE’s piecemeal distribution of the PDEIS sections to cooperating agencies, the arbitrarily short timeframe for cooperating agencies to review and comment on these sections, and the USACE’s failure to provide cooperating agencies with all of the sections and appendices of the PDEIS make it impossible for the Tribe, and other cooperating agencies, to properly review the PDEIS and provide substantive and meaningful comments to the USACE. […] The Tribe is deeply troubled by the USACE’s demonstrated refusal to take its role and responsibilities in this EIS process seriously.”

- **U.S. Fish and Wildlife Service**: “The process employed by the USACE to facilitate cooperating agency review made it challenging to assess the DEIS for sufficient baseline information in the Affected Environment (Chapter 3) and sufficient analysis and discussion of impacts in the Environmental Consequences (Chapter 4); further complicating the review was the incomplete nature of the chapters. Many of the chapter sections contained notations that 2018 and 2019 field data are pending, and an analysis of those data will be added to the EIS when available. Due to a lack of current data for the affected environment, the Service is not able to provide comprehensive analysis of the environmental consequences of the proposed project.”

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656 Proposed Pebble Project Preliminary Draft EIS Review Comments on Chapter 6: Consultation and Coordination, NARF Technical Team and Ridolfi Environmental on behalf of Nondalton Tribal Council (Dec. 21, 2018).

657 Letter from Wesley James Furlong, Staff Attorney, Native American Rights Fund, to Shane McCoy, Program Mgr, U.S. Army Corps of Eng’rs (Dec. 21, 2018).
on fish and wildlife resources.”

- EPA: “Due to the limited time available for review […] and uncertainty regarding how the Corps intends to address the comments that we have previously provided […] our public comments on the Draft EIS may include additional concerns or recommendations.”

In addition to the problems described above, the Corps has thwarted public participation by unlawfully relegating the facts and analyses underlying its conclusions to separate documentation and appendices rather than discussing them within the Draft EIS itself. Yet the EIS is “where the [agency’s] defense of its position must be found.” The reason for this strict requirement is to achieve NEPA’s goal of ensuring “the public and interested government departments can conveniently monitor and criticize the agency’s action.”

“[O]ther parts of an administrative record do not receive the same wide circulation and consequent comment comparable to that accorded an environmental impact statement.”

As such, “[m]aterials in the administrative record, but not incorporated in any way into the EIS, cannot bring an otherwise defective EIS into compliance with NEPA.”

Contrary to its NEPA obligations, the Corps has buried key details and analyses in more than 1,000 pages of appendices and 400,000 pages of project library documents and responses to Requests for Information (RFIs). The Draft EIS also frequently refers readers to PLP’s consultants reports and responses to RFIs for technical details and discussion, scientific assumptions, modeling, analysis, and conclusions. Relegating the facts and analysis underlying the agency’s conclusions to separate documentation and appendices and failing to include that discussion within the Draft EIS itself violates the requirements of NEPA of adequate disclosure and discussion of scientific opinions and the public’s ability to review that discussion.

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658 Letter from Mary Colligan, Assistant Reg’l Dir., U.S. Fish & Wildlife Serv., to Shane McCoy, Program Mgr, U.S. Army Corps of Eng’rs (Dec. 21, 2018), at p.2.

659 EPA Comments on Pebble EIS Preliminary Draft Chapter 1 and 2 (Nov. 21, 2018).

660 Blue Mountain Biodiversity Project v. Blackwood, 161 F.3d 1208, 1214 (9th Cir. 1998) (the environmental document itself is where the agency’s “defense of its position must be found,” not in an appendix to this document.); see also Friends of the Earth v. Hall, 693 F. Supp. 904, 934 (relegation of technical discussion into technical appendices was improper under NEPA). Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1214 (9th Cir. 1998); see also Nat’l Wildlife Fed’n v. Marsh, 568 F. Supp. 985, 997 (D.D.C. 1983) (“Congress mandated in section 102(2)(C) of NEPA that the pertinent information be contained wholly within the impact statement.”). Blue Mountain Biodiversity Project v. Blackwood, 161 F.3d 1208, 1214 (9th Cir. 1998) (the environmental document itself is where the agency’s “defense of its position must be found,” not in an appendix to this document.).

661 Grazing Fields Farm, 626 F.2d at 1073.


664 Blue Mountain Biodiversity Project v. Blackwood, 161 F.3d 1208, 1214 (9th Cir. 1998) (the environmental document itself is where the agency’s “defense of its position must be found,” not in an appendix to this document.); see also Friends of the Earth v. Hall, 693 F. Supp. 904, 934 (relegation of technical discussion into technical appendices was improper under NEPA).
itself, it has failed to comply with NEPA.

C. **Improperly Narrow Purpose and Need; Overall Public Interest Does Not Support Need for the Pebble Project**

Corps regulations require “[t]he relative extent of the public and private need for the proposed structure or work” to be evaluated in connection with each permit application.\(^665\)

While the agency should “consider private objectives,” those private interests alone do not “define the scope of the proposed project.”\(^666\) Agencies “must look hard at the factors relevant to the definition of purpose.”\(^667\) Under Corps regulations, “[w]hen private enterprise makes application for a permit, it will generally be assumed that appropriate economic evaluations have been completed, the proposal is economically viable, and is needed in the marketplace,” but in appropriate cases, the Corps should “make an independent review of the need for the project from the perspective of the overall public interest.”\(^668\) Federal agencies enjoy “considerable discretion” in defining the purpose and need for a project,\(^669\) but an agency “cannot define its objectives in unreasonably narrow terms.”\(^670\) As the Ninth Circuit has explained, “[a]n agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency’s power would accomplish the goals of the agency’s action, and the EIS would become a foreordained formality.”\(^671\) Courts evaluate the agency’s statement of purpose and need under a reasonableness standard.\(^672\)

The stated Purpose and Need for the proposed Pebble Mine Project is “to develop and operate a copper, gold, and molybdenum mine in Alaska in order to meet current and future demand.”\(^673\) The statement violates NEPA for many reasons.

To begin with, the statement lacks basic reasonableness because the proposed project would do little to meet current and future demand for copper and other minerals. For example, the 20-year mine plan in the Draft EIS would result in production of approximately 318 million pounds of copper per year\(^674\) and 7.4 billion pounds of copper overall.\(^675\) At the present

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665 33 C.F.R. § 320.4(a)(1).
666 National Parks & Conservation Ass’n v. BLM, 586 F. 3d 735, 746 (9th Cir. 2009)
667 Id. (citing Citizens Against Burlington, Inc. v. Busey, 938 F.2d 190, 196 (D.C. Cir. 1991), cert. denied, 502 U.S. 994 (1991)).
668 33 C.F.R. § 320.4(q).
669 Friends of Southeast’s Future v. Morrison, 153 F.3d 1059, 1066 (9th Cir. 1998).
670 City of Carmel-By-The-Sea v. United States Dep’t. of Transp., 123 F.3d 1142,1155 (9th Cir. 1997).
672 Id. at 1066-67.
673 Draft EIS, page 1-4.
675 Draft EIS, Appendix N, Table 1-1, at page 13.
global consumption rate for refined copper (approximately 48 billion pounds in 2017), this project would supply the global market with a mere 56 days’ worth of copper demand. Furthermore, the U.S. produced approximately 2.5 billion pounds of copper in 2017, and it consumed an estimated 3.7 billion pounds of copper. This means that PLP’s mine plan generating 7.4 billion pounds of copper over 20 years would result in the equivalent of roughly 2 years of U.S. demand for copper and less than 3 years of current U.S. domestic production. Thus, it would be impossible for the 20-year mine plan to come anywhere near the goal of “meet[ing] current and future demand” for minerals. The 78-year mine scenario may make a somewhat more substantial contribution toward this goal, but the Draft EIS fails to fully consider this scenario and instead unlawfully segments the project, as discussed in Section V.D below. Moreover, PLP’s stated project plans are to ship all ore to Asia directly from its Cook Inlet port site. This is PLP’s sole smelting option, as facilities for smelting this type of ore do not exist in Alaska, Canada, or the Pacific U.S. Thus, neither the Corps nor PLP can claim that the proposed mine is intended to satisfy U.S. demand for ore. Even more importantly, destroying the headwaters of Bristol Bay’s pristine salmon fishery and forever placing the region at risk for 56 days of global copper supply, or for 2 and 3 years of U.S. demand and production, respectively, cannot be considered reasonable or beneficial for the overall public interest.

The Corps has also unreasonably narrowed the statement of Purpose and Need to the development of a mine “in Alaska.” This geographic limitation has no foundation in fact or law, and it is unreasonable on its face. NDM’s parent company, Hunter Dickinson Inc. (HDI), and its affiliates have a track record of owning and operating copper and gold mines


677 7.4 billion pounds from Pebble / 48 billion pounds global consumption annually = 0.1542 * 365 days per year = 56.3 days.

678 See USGS National Minerals Information Center, Copper Statistics and Information Annual Publication for 2018, available at: https://www.usgs.gov/centers/nmic/copper-statistics-and-information (noting copper production in the US in 2017 was 1.27 million tons, or 2.54 billion pounds).

679 See id (noting that apparent, unmanufactured US consumption of copper in 2017 was 1.850 million tons, or 3.7 billion pounds).

680 7.4 billion pounds from Pebble / 3.70 billion pounds annual US consumption = 2.0 years of current US demand for copper.

681 7.4 billion pounds from Pebble / 2.54 billion pounds annual US production = 2.9133 years copper supply at current US production rates.

682 Statement of NDM CEO Ron Thiessen, Denver Gold Forum (Sept. 26, 2017), available at: http://www.denvergold.org/company-webcast/dgf17/219/ (the mine site is “close to tidewater which gives us good access to oceans and shipment to Asia.”).
and exploration prospects elsewhere in the U.S., Canada, and around the world.\textsuperscript{683} Moreover, as the Draft EIS admits, “[t]he public’s interest in commodities such as copper, gold, and molybdenum does not dictate a particular source of these commodities.”\textsuperscript{684} The narrow statement of Purpose and Need precludes consideration of other means for meeting current and future market demand for copper, such as the development of other mineral deposits or increasing output at other mines, and thus it unlawfully renders a mining project in Alaska a “foreordained” conclusion.

The Corps should conduct an independent review of the purpose and need for the project from the perspective of the overall public interest, especially in light of the Pebble’s destruction of the essential salmon habitat in Bristol Bay’s pristine salmon fishery and the associated risks. The independent review should take a hard look at the reasonableness and public interest implications of its stated Purpose and Need. In particular, the Corps should look closely at: (1) why six major mining companies (Cominco, Teck, Mitsubishi, Anglo America, Rio Tinto, and First Quantum Minerals) have walked away from the proposed Pebble Project,\textsuperscript{685} (2) whether the mine as designed is economically viable or would need to be expanded to nearly four times its current proposed footprint to achieve profitability,\textsuperscript{686} (3) whether the mine would require substantial investments or loans from the State of Alaska to even construct its infrastructure, as PLP proposed to its investors as recently as January 2019,\textsuperscript{687} and (4) whether any public benefits are derived for Alaskans and the U.S. from a Canadian company planning to ship its ore to Asia for smelting on the global market where it


\textsuperscript{684} Draft EIS, page 1-4.

\textsuperscript{685} See Mining Journal, Luck No.7 for Pebble?, interview with Ron Thiessen (Jan. 30, 2019), available at: https://www.mining-journal.com/events-coverage/news/1355286/lucky-no7-for-pebble (the six major mining companies walking away from the Pebble project are: Cominco, Teck, Mitsubishi, Anglo America, Rio Tinto, and First Quantum Minerals).

\textsuperscript{686} See Draft EIS, page 4.22-39 (noting the 78-year Expanded Development Scenario at Pebble would have a footprint of 29,632 acres, versus 8,086 acres in the current 20-year proposal).

\textsuperscript{687} Statement of Doug Allen, Northern Dynasty VP Corporate Communications, at the Vancouver Investment Conference (Jan. 20-21, 2019), video available at https://www.youtube.com/watch?v=EPFmt mzEDQ&feature=youtu.be (“We need a lot of infrastructure. Because we’re in barren territory it will need road, power, port, and significant infrastructure. In Alaska I would flag to your attention that we have a state agency called AIDEA, the Alaska Industrial Development and Export Authority. And AIDEA is in the business of providing outsourced, long-term funding to projects that provide jobs to Alaskans. We believe that in the fullness of time, AIDEA or a regional native corp, will be a candidate to provide funding to this project. So you take it out of the capex pocket and you put it in the operating costs pocket because you’re absorbing the cost of the long-term lease. But we believe that financial model is alive and well in Alaska and Pebble will benefit from that.”).
will be a drop in the overall bucket.\footnote{Statement of NDM CEO Ron Thiessen, Denver Gold Forum (Sept. 26, 2017), available at: \url{http://www.denvergold.org/company-webcast/dgf17/219/} (the mine site is “close to tidewater which gives us good access to oceans and shipment to Asia.”). See also, Appx. E, at pages 96-98, Yocom, Yocom, Thomas G., Recommendations on the scope of analysis pursuant to the National Environmental Policy Act and Section 404 of the Clean Water Act (June 17, 2018) (“The Corps should make an assessment, particularly if the ore concentrate is destined to be sold to smelters in Asia rather than to be sold and processed to entities within the United States. Unless PLP can provide some assurance that the ore concentrate it will produce from the Pebble deposit is intended to remain within the United States, the Corps should expand its EIS scoping analysis and its public interest determination to assess the environmental, economic, and national interest impacts of a Canadian company, constructing a project that will destroy thousands of acres of wetland and aquatic habitats and create long-term potential water quality risks in order to sell valuable U.S. minerals to foreign economic competitors of the United States. PLP’s own arguments suggest that such a scenario would be contrary to the public interest.”).}

Moreover, the Corps has unreasonably failed to look at factors related to economics and employment in the Bristol Bay region and Alaska when developing the unreasonably narrow statement of Purpose and Need. To support its Purpose and Need statement, the Corps asserts—with no foundation in fact—that “the public also has an interest in improving the economy of the state, in the creation of jobs in the state, and in the extraction of natural resources for the benefit of the state.”\footnote{Draft EIS, page 1-4.} In making such conclusions unsupported by facts, and relying on these conclusions, the Corps has crafted an unreasonable Purpose and Need statement. Local employment in the Bristol Bay region, for instance, does not appear to be a significant factor given that the seven communities surrounding Iliamna Lake currently have a 70% employment rate, which exceeds the statewide employment rate of 60%.\footnote{Alaska Department of Labor and Workforce Development, Division of Research and Analysis, Alaska Local and Regional Information (2016), available at: \url{http://live.laborstats.alaska.gov/alari/} (based on comparison of 2016 percentage of residents employed age 16 and over, the State of Alaska total versus the communities of Port Alsworth, Nondalton, Iliamna, Newhalen, Igiugig, Kokhanok, and Pedro Bay).}

The Purpose and Need statement fails to consider that building Pebble would likely lead to a net decrease in employment due to potential losses with commercial and sportfishing and recreation sectors. As described by the BBWA, and in additional expert economic analyses and State of Alaska-compiled data subsequent to the BBWA’s publication, the Bristol Bay economy is heavily dependent on clean, pristine waters for its healthy salmon run. These waters, wetlands, and pristine ecosystem in turn support:

- A salmon commercial fishery valued at $1.5 billion in annual economic activity and supporting nearly 20,000 fishery jobs\footnote{See attached Appx. E, at pages 1655 to 1975, Wink Research & Consulting, Economic Benefits of the Bristol Bay Salmon Industry (July 2018) and Knapp, Gunnar, et al., The Economic Importance of the Bristol Bay Salmon Industry (April 2013).}
- Sport fishing and hunting trips (more than 29,000 taken annually) generating an additional $68.7 million in direct expenditures and more than 800 jobs annually (from employment of lodge owners, guides, pilots, etc).\footnote{BBWA at page 5-26.} Approximately 80 businesses
and 400 guides operate in Bristol Bay.\(^{693}\)

- Wildlife viewing and tourism generating an additional $104.4 million in direct expenditures annually\(^{694}\)

Considering all sectors (commercial, sport, and subsistence fishing; sport and subsistence hunting; and non-consumptive recreation), EPA found that “the Bristol Bay watershed’s ecological resources generated nearly $480 million in direct economic expenditures in 2009 and provided employment for over 14,000 full- and part-time workers.”\(^{695}\)

The most recent example of the strength of the commercial fishing economic engine came in 2018, when a record 62.3 million sockeye salmon returned to Bristol Bay. This was the largest salmon season ever, based on records dating back to 1893, marking the fourth consecutive year that inshore sockeye salmon runs exceeded 50 million.\(^{696}\) The Nushagak and Kvichak River systems alone accounted for more than 50 million returning sockeye in 2018, or more than 80% of the entire Bristol Bay run. The 2018 season also ranks first in the history of the fishery’s exvessel value, with a preliminary estimate of $281 million, or 242% above the 20-year average of $116 million.\(^{697}\)

As noted by EPA, this economic activity all owes its existence to the “uncrowded, pristine wilderness setting of the Bristol Bay watershed,” “aesthetic qualities […] important in selecting fishing locations” and “numerous, interrelated factors” such as “the Bristol Bay region’s physical habitat complexity [and] biological complexity, which greatly increases the region’s ecological productivity and stability.”\(^{698}\) These benefits are distributed throughout the Bristol Bay region. Indeed, as the Draft EIS affirms, “The harvest and processing of salmon in the Bristol Bay region provides millions of dollars in tax revenues”\(^{699}\) and the general socioeconomic situation in Alaska depends on the long-term health of the fishery.\(^{700}\)

Overall, the Purpose and Need statement in the current Draft EIS is unreasonable and reflects only the interests of PLP rather than the public as a whole. The proposed project would make only a nominal contribution to the purported goal of meeting global market demand for copper, while sacrificing the integrity of the waters supporting the world’s most prolific wild salmon fishery. Further, the Corps has unlawfully failed to take a hard look at the “factors relevant to the definition of purpose.”\(^{701}\) After conducting the necessary independent review,

\(^{693}\) BBWA at page 5-27.  
\(^{694}\) BBWA at page 5-26.  
\(^{695}\) BBWA at page ES-5.  
\(^{696}\) See ADF&G, 2018 Bristol Bay Salmon Season Summary (Sept. 18, 2018), http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/989536277.pdf  
\(^{697}\) Id.  
\(^{698}\) BBWA at pages 5-26 to 5-27.  
\(^{699}\) Draft EIS at page 3.6-16.  
\(^{700}\) Id.  
\(^{701}\) National Parks & Conservation Ass’n v. BLM, 586 F. 3d 735, 746 (9th Cir. 2009).
the Corps must redefine the Purpose and Need statement to ensure that it is reasonable and reflects the public interest. The redefined Purpose and Need statement must be redrafted to avoid foreordaining approval of the project. The Corps should then revise the Draft EIS to correct the errors flowing from the illegal Purpose and Need statement and reissue the Draft EIS for public review and comment.

D. IMPROPER SEGMENTATION OF THE PROPOSED PEBBLE MINE

An agency preparing an EIS “may not ‘segment’ its analysis so as to conceal the environmental significance of the project or projects.” In determining the proper scope of an EIS, “an agency is required to consider more than one action in a single EIS if they are ‘connected actions,’ ‘cumulative actions,’ or ‘similar actions.’” Actions are connected if they: (i) automatically trigger other actions which may require environmental impact statements; (ii) cannot or will not proceed unless other actions are taken previously or simultaneously; or (iii) are interdependent parts of a larger action and depend on the larger action for their justification. Cumulative actions are those which, “when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.” Similar actions are those which, “when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography.” Connected and cumulative actions “should” be discussed together in the same EIS, while an agency “may wish” to discuss similar actions together in the same EIS. Where multiple actions are reviewed together in a single EIS, the discussions of alternatives and environmental consequences must encompass the entire group of actions. In contrast, where a potential future action is “reasonably foreseeable,” but not connected, cumulative, or similar enough to the proposed action to warrant a single EIS, it should be addressed as a cumulative action or impact in the EIS for the proposed action.

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704 Id. § 1508.25(a)(1).
705 Id. § 1508.25(a)(2).
706 Id. § 1508.25(a)(3).
707 Id. § 1508.25(a).
708 See O’Reilly v. U.S. Army Corps of Engineers, 477 F.3d 225, 235–37 (5th Cir. 2007) (holding that the Corps did not engage in improper project segmenting to avoid NEPA requirements in a reversal of the lower court’s ruling, but affirmed the lower court’s determination that the Environmental Assessment prepared for the first phase failed adequately to evaluate the cumulative impacts of future project phases.) See also Natural Resources Defense Council v. U.S. Forest Serv., 421 F.3d 797, 815 (9th Cir. 2005) (failure to consider cumulative effects of “reasonably foreseeable, continued highgrading” of old-growth trees across federal and private lands violated NEPA). See, e.g., EPIC v. USFS, 451 F.3d 1005, 1014 (9th Cir. 2006) (cumulative impacts analysis in timber sale EIS was not flawed for failure to address potential future timber sale, because the future sale was still in the early planning stages at that point and not enough was known about it). 40 C.F.R. § 1508.25.
1. Project History

The Draft EIS is based on a proposal for a 20-year, 1.5 billion ton mine. There is a long history, however, of PLP and NDM proposing a much bigger mine to investors. Over many years, PLP and its parent company NDM have consistently touted the extensive size of the ore deposit, which includes 2,402 mining claims covering 417 square miles (~260,000 acres) of the Pebble deposit area.\(^7\) For instance, NDM CEO Ron Thiessen has stated that PLP’s mineral titles represent “development for many years, perhaps centuries into the future and when you build the infrastructure in there and you’ve got a concentrator you can feed it forever.”\(^7^1\)

PLP and NDM have also submitted mine plans to regulatory agencies for various purposes.\(^7^1\) For instance, in 2011, they submitted plans to the Securities Exchange Commission (SEC) describing a 6.5 billion-ton, 78-year mine, which would extract about 55% of the known deposit.\(^7^2\) The 78-year-mine encompasses 30,000 of the total 260,000 acres of the Pebble claims, and these are situated directly at the heart of all the claims.\(^7^3\) The same mine plan was described in submissions to the State of Alaska in a 2006 in connection with dam safety certification and water rights applications.\(^7^4\)

In 2014, EPA issued a 404(c) Proposed Determination based on an evaluation of the watershed impacts associated with several scenarios for a mine at the Pebble deposit. The Proposed Determination set forth restrictions based on the “unacceptable adverse effects” that would be expected from the construction and routine operation of the smallest of these scenarios—a 0.25 billion-ton mine.\(^7^5\) EPA acknowledged that even its largest scenario—6.5 billion tons—did not consider the impacts associated with complete extraction of the Pebble deposit, which was estimated to contain a mineral resource of 11.9 billion tons.\(^7^6\) Due to the extent of the identified ore, EPA “expected that development of a mine at the Pebble deposit would ultimately be much larger than the 0.25 stage mine and could exceed the 6.5 stage


\(^7^1\) See infra, App. A, pp. 1-4.


\(^7^5\) PD at ES-6, 5-1.

\(^7^6\) BBWA at 6–4.
mine.”

EPA explained that, for a mine fully extracting that amount of ore, “potential effects could be significantly greater than those estimated in the assessment.”

In fall 2017, PLP released a new iteration of its mine plan. PLP estimated that the Pebble deposit is the “world’s largest undeveloped copper and gold resource,” with 6.44 billion tons of measured and indicated resources and 4.46 billion tons of inferred resources, totaling roughly 10.9 billion tons. The plan called for a mine footprint (mine pit, tailings facility, and waste pit) of 5.4 square miles, which would be 1.2 square miles larger than the 0.25 billion-ton scenario that EPA determined would have “unacceptable adverse effects.” In a presentation to investors, Thiessen talked about expanding the mine up to 10 billion tons by building the mine pit out to the east and north, as well as potentially developing up to 12 additional mines within Pebble’s 417 square-mile mine claim block. Thiessen acknowledged that the highest grade ore found in exploration drill holes is located to the east of, and adjacent to, the mine plans and that those resources were not included in the 10 billion tons. He also said he viewed the project as a “multigenerational opportunity” that will lead to a “very, very long life mine.”

Then, in December 2017, PLP’s 404 permit application described a 1.2 billion ton-mine with throughput of 160,000 tons per day, again larger than EPA’s 0.25 billion-ton scenario. Subsequently, in May 2018, PLP revised its mining plan upward by 25% to 1.5 billion tons (six times the size of EPA’s 0.25 billion-ton scenario), with a throughput of 180,000 tons per day. Thiessen emphasized that this initial project would ultimately lead to large-scale, long-term mining: “We need to walk before we run ... we need to build something that the region, the state, and the communities would be comfortable with … These projects are

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717 PD at ES–3.
718 BBWA at 6–4.
721 Statement of Ron Thiessen, Denver Gold Forum (Sept. 26, 2017), at 2:50-3:49, video available at http://www.denvergoldforum.org/dgf17/company-webcast/NDM-CN/ (stating that “[t]his is 10 billion tons. It’s open in three directions. On the East end of the deposit there’s a fault … on the other side of the fault contains the highest grade hole that’s not included in the 10 billion tons; so there’s substantial resources on the other side of that fault”).
724 PLP acknowledges that its most-recent project proposal remains larger than the EPA 0.25 mine scenario. Statement of Ron Thiessen, NDM CEO (Dec. 20, 2017), interview available at: https://www.frankcurzio.com/archives/ (episode 579).
conducive to large-scale operations. The bigger you build it – you know, because almost you make the same amount of money for every unit that goes through it, so the more units that go through the plant, the more money you make – but scale has impacts and people want to say ‘can you manage impacts before we let you build the monster?’ Something really, really large. And so the idea was, okay, let’s show them that we can build something that’s reasonable, it’s not optimized from a volume standpoint, but … let’s go forward with something like that.”

As noted above, the revised 20-year, 1.5 billion-ton mine plan serves as the basis for the Draft EIS. Although the project is larger than EPA’s 0.25 billion-ton scenario, it is considerably smaller than the 6.5 billion-mine plan and the 10 billion-ton ore deposit. The plan thus appears to reflect EPA’s warning that “unacceptable adverse effects” would result even from a 0.25 billion-ton mine scenario and a much larger mine plan would be extremely challenging to permit. In light of the long history of NDM and PLP proposals for mines much larger than the proposed action, it is clear that PLP intends to start with a mine at this scale for purposes of initial permitting and then expand. Expert analysis of hardrock mines throughout Alaska and the United States shows that this type of development and expansion is the normal course of business. In addition, the Draft EIS admits this is the case, explaining that the expansion at Pebble “could use and expand on the project mine site and transportation infrastructure that would be in place, similar to what has happened with other Alaskan mines where adjacent reserves are commonly owned.” Project details reinforce this understanding. For instance, in a response to EPA comments, the Corps noted that, although the project description refers to the pyritic TSF being able to store “up to 50 million tons” of PAG waste, it has the capacity to store additional waste, if required.

Moreover, PLP’s investment to build a 20-year mine would be enormous, and the project would not be economically viable without expansion. As noted by then-EPA Administrator Gina McCarthy, NDM’s February 2011 SEC filings “suggest that a mine plan with such a short [18 to 20 years] time horizon might not be economically viable and that a 45-year to 78-year horizon is the most likely development scenario.” And according to PLP itself, a project alternative of 50,000 tons per day (larger than the 31,000 tons per day associated with EPA’s 0.25 billion-ton scenario), would “not produce a positive financial return.”


726 See BBNC Scoping Letter to the Army Corps (June 29, 2018), section III.C.2.


729 Pebble Project Comment Response Matrix, EPA Comments on Preliminary Draft EIS, Ch. 2, at 3, available at https://pebbleprojecteis.com/files/3482e979-5119-415a-8cb-01c1b34a880.

730 See Letter from Gina McCarthy, EPA Administrator, to John Shively, PLP CEO (Sept. 30, 2013).

731 Technical Note on Project Options and Screening Criteria, from James Fueg, PLP, to Shane McCoy, USACE (March 20, 2018), p. 6.
Conversely, given that the Pebble site is in a remote, undeveloped, roadless region, the anticipated 78-year mine is dependent on the infrastructure associated with the proposed 20-year mine and would not be economically viable without it. Indeed, the roads, ports, utilities, and other infrastructure described in the Draft EIS are intended to support future phases of development. For instance, the Draft EIS admits that future phases of development could be facilitated by access to the Pebble project’s transportation infrastructure, and it acknowledges that future expansion could “use and expand on the project mine site and transportation infrastructure that would be in place, similar to what has happened with other Alaskan mines where adjacent reserves are commonly owned.” Thiessen has also stated that, even if PLP does not expand the mining beyond a 20-year, 1.5 billion ton development, it’s likely that copper and gold will be left in the ground, so “someone will probably come along and want to do a second phase of the project at another time.”

Finally, in contrast to the 20-year, 1.5 billion-ton mine under consideration in the Draft EIS, NDM and PLP are continuing to describe the Pebble project to investors as a long-term mine developing the full ore deposit. NDM’s website describes the Pebble deposit as “one of the greatest stores of mineral wealth ever discovered, and the world’s largest undeveloped copper and gold resource” with the “potential to support a modern, long-life mine.” And, in documentation accompanying its most recent audited yearly financial statement, NDM states “[t]he project proposed as envisaged in the Project Description uses a portion of the currently estimated Pebble mineral resources” and “does not preclude development of additional resources in other phases of the project in the future.” Similarly, PLP’s website when it submitted its 404 permit application stated “[w]e know that the Deposit is large enough, and rich enough, to sustain production for 20-25 years, and quite possibly operate for generations.” PLP reiterated that, while its “initial approach is for a 20-25-year mine,”

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732 See Draft EIS, p. 4.1-11, Table 4.1-1 (stating that “[b]ecause claims are currently owned by NDM Ltd., if future drilling and resource delineation indicate that it is feasible to develop the project, it is possible that construction and operations could access and use the Pebble Project transportation system”).


737 See also, archived PLP website as of February 2018, available at https://web.archive.org/web/20180206055318/https://www.pebblepartnership.com/plan.html (“Construction is expected to take 4–5 years, whatever form the project design ultimately takes. We know that the Deposit is large enough, and rich enough, to sustain production for 20 years, and quite possibly operate for generations.” and “Our current plan is for a 20-year mine. We believe it’s possible that the Deposit may hold a century’s worth of minerals”).

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the project “could extend for decades—the Deposit may hold a century’s worth of minerals.”

2. **The 78-Year Mine Is a Connected Action That Must Be Fully Evaluated as Part of the Proposed Action in a Revised Draft EIS.** To comply with NEPA, the Corps must consider the 78-year mine plan proposed by PLP. NEPA requires that “[s]ignificance cannot be avoided by ... breaking [an action] down into small component parts.” In light of the project history described above, the expanded 78-year, 6.5 billion-ton mine plan (which the Draft EIS fails to review) is the actual proposal before the Corps. The Corps acknowledges in the Draft EIS that the expanded 78-year mining scenario is a “reasonably foreseeable” future action, but it contends this action does not need to be fully analyzed as a component of the proposed action because it is not “described as reasonably foreseeable in a government planning document.” The Corps’ rationale is preposterous and has nothing to do with the legal standards determining when connected actions must be considered together in a single EIS.

A number of courts have found that an environmental analysis is flawed for failing to consider “connected actions” in a single EIS. Courts generally apply an “independent utility” test to determine “whether multiple actions are so connected as to mandate consideration in a single EIS.” “The crux of the test is whether each of the two projects would have taken place with or without the other and thus had independent utility.” One example is *Hammond v. Norton*, where the project’s history supported a connected actions

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738 *Id.* (emphasis added).
739 40 C.F.R. §1508.27(b)(7).
740 *See, e.g.*, Draft EIS at 4.1-8 (admitting that an expanded mine will include “additional tailings storage, additional water storage, new waste rock storage facilities, additional processing facilities, a concentrate pipeline and a deepwater loading facility.”). Yet that infrastructure is not described beyond this passing reference, nor are its substantially expanded impacts on the environment disclosed.
741 Draft EIS at page 4.1-8.
742 *National Wildlife Fed’n v. National Marine Fisheries Serv.*, 184 F.Supp.3d 861, 938-948 (D. Or. 2016) (holding that Corps and Bureau of Reclamation should have prepared a single EIS on their adoption of 73 reasonable and prudent alternatives (RPA) recommended in a NMFS biological opinion on operation of the Federal Columbia River Dam System, because they were part of a single plan, they were connected actions, and they were cumulative actions); *see also Earth Island Inst. v. U.S. Forest Serv.*, 351 F.3d 1291, 1304-05 (9th Cir. 2003) (noting that a single EIS is required where there is one plan governing the projects or the projects are connected, cumulative, or similar). *National Wildlife Fed’n*, 184 F.Supp.3d at 940 (“Even if the 2014 BiOp RPA did not constitute one plan or proposal requiring a single EIS, under the facts of this case, the RPA actions are sufficiently ‘connected’ as to require a single EIS.”);
743 *Sierra Club v. Bureau of Land Mgmt.*, 786 F.3d 1219, 1226 (9th Cir. 2015). *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 969 (9th Cir. 2006) (Ninth Circuit applies the “independent utility” test to determine whether two actions are sufficiently connected to require a single EIS). *Thomas v. Peterson*, 753 F. 2d 754, 758-60 (9th Cir. 1985) (If one project cannot proceed “but for” the other project, or if the first project is not “independent” of the second project, the two projects are considered connected actions and must be reviewed in the same EIS).
744 *Great Basin Mine Watch*, 456 F.3d at 969 (9th Cir. 2006) (emphasis added).
Two companies had entered into a joint venture to build a pipeline in order to connect the Salt Lake City area to the national petroleum products grid in Texas for the first time. BLM told the companies that it would consider the entire pipeline a single project for purposes of environmental review. The companies then terminated the joint venture and applied separately for two separate pipeline projects, one from Texas to New Mexico, and the other from New Mexico to Salt Lake City. BLM prepared separate EISs evaluating the two applications. When the New Mexico-Salt Lake City segment was challenged, the court readily held that BLM had acted arbitrarily in deciding that the two pipelines were not connected actions because “the history of the ... project as a single connected pipeline, and the proponents’ manifest intention to circumvent the NEPA review process by segmenting the project, should have given BLM cause to question whether the dissolution of the ... partnership was of real or only formal significance.”

Like the pipeline in Hammond, the Pebble project has a long history of having been publicly viewed as a single project, and the 78-year mine plan has been delineated in detail in permit applications, submissions to the Corps, and statements to investors. Also, much like the project in Hammond, PLP segmented its permit application after EPA’s Proposed Determination indicated impacts from the longer-term development plan would be more difficult to permit than if the project was segmented into phases. Moreover, as with the interdependent two-segment pipeline in Hammond, the 20-year mine is not economically viable without the 78-year mine, and the 78-year mine would be reliant on the infrastructure built for the proposed 20-year mine. Indeed, the Draft EIS admits that “[i]f the Pebble Project was permitted, Pebble expansion could use and expand on the project mine site and transportation infrastructure that would be in place....” The 20-year mine is thus “inextricably intertwined” with the 78-year mine. The effect of PLP’s artificially segmented proposal, as in Hammond, is that the Draft EIS analysis is improperly limited to only one segment of the overall mine plan.

An important consideration in Hammond was that BLM’s finding of independent utility was

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746 Id. at 233.
747 Id. at 234.
748 Id.
749 Id. at 235.
750 Id. at 252 (emphasis added).
751 See also Thomas v. Peterson, 753 F.2d 754, 758 (9th Cir. 1985).
752 Draft EIS, at. 4.1-8 (Table 4.1-1).
753 Nw. Res. Info. Ctr., Inc. v. Nat’l Marine Fisheries Serv., 56 F.3d 1060, 1068 (9th Cir. 1995) (describing “connected actions” as actions that are akin to “links in the same bit of chain,” contrasted with those that are “separate segments of chain,” and thus not “connected actions” under NEPA regulations (citing Sylvester v. U.S. Army Corps of Eng’rs, 884 F.2d 394, 400 (9th Cir. 1989)).
not supported by the administrative record.\(^\text{754}\) An agency finding of independent utility cannot be based on representations made by the project proponent alone. Instead, an “independent evaluation by the agency based on record evidence” is required.\(^\text{755}\) The record for the Pebble project overwhelmingly supports a determination that the 78-year “build out”\(^\text{756}\) is a connected action requiring a single EIS and that PLP artificially segmented the mine to expedite permit review.\(^\text{757}\) Indeed, record documents show that NDM and PLP officers are being paid bonuses based solely on expedited deliverable dates related to the NEPA and 404 processes.\(^\text{758}\) Therefore, the Corps must not blindly accept PLP’s statements that the 20-year mine is an economically viable plan as currently proposed. Instead, the Corps must independently review the proposed 20-year project’s economic viability and analyze the extent of its economic dependence on the development of the expanded 78-year mine.

Evidence of intent in the administrative record also informs the connected action analysis. *Florida Wildlife Federation v. U.S. Army Corps*, for example, involved a 404 permit application for a 535-acre research facility that had been carved out of a larger, 1,919-acre research park development.\(^\text{759}\) Even though the smaller research facility could potentially

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\(^{754}\) *Hammond*, at 253. The court cited the D.C. Circuit version of the independent utility test, which is “whether one project will serve a significant purpose even if a second related project is not built.” *Id.*

\(^{755}\) *Id.* at 251–52 (“Moreover, while under normal circumstances an agency may rely on information provided by a project proponent, when the agency has good cause to believe that information is inaccurate or exaggerated, it has a duty to substantiate it. *Van Abbema v. Fornell*, 807 F.2d 633, 642 (7th Cir.1986) (“The Corps may rely on reports prepared by outsiders or applicants, but as we have noted, when such information is specifically and credibly challenged as inaccurate, the Corps has an independent duty to investigate.’”)). *Florida Wildlife Fed’n v. U.S. Army Corps of Engineers*, 401 F. Supp.2d 1298, 1321, 1323 (S.D. Fla. 2005).

\(^{756}\) Draft EIS, p. 4.2-13.

\(^{757}\) See, e.g., statement of NDM CEO Ron Thiesen on Smith Weekly Research Discussion with Ron Thiessen pt 2 (January 23, 2019) (“[PLP CEO] Tom said, ‘If we could build a mine that was amenable to everybody, so that we can build it and operate it and establish our credentials, or if you like the term, earn our social license. Have people working, have the communities collecting taxes, and everybody's getting a benefit, so that they know what's in it for me.’ […] And if at that point in time you want to extend its mine life, you want to change its parameters, that's when you could consider doing things like that. […] But the key, is to look at it, and try and build something that people are comfortable [with]. So we went back to the drawing boards, and we said, ‘How do we make this mine have a smaller footprint, for the first reasonable economic life?’ And so we came up with this 180,000 ton a day concentrator that has a footprint of about five and a half, five point eight square miles. […] it's been optimized for permitting and people's comfort and level of operation.’”).


\(^{759}\) *Florida Wildlife*, 401 F. Supp.2d at 1305.
stand alone, the project’s history showed that it “was never intended to stand alone;” instead, the research park “was developed as an integrated whole” with the research facility “as its centerpiece.”

Accordingly, the court rejected the Corps’ segmented approach based on the applicant’s assertions of independent utility and concluded that the “inescapable conclusion from this record is that the ‘independent utility’ concept” was “developed post-hoc as an avenue to limit and expedite permit review.”

Similarly, in Bragg v. Robertson, when the mining company had “readily acknowledge[d]” that the permit at issue was “merely the ‘first phase’ of its plans,” there was “no question about whether future phases amounted to a ‘proposal’ for connected actions purposes.”

Like the smaller research facility in Florida Wildlife Federation, the proposed 20-year mine lies at the heart of a larger program to develop NDM’s and PLP’s actual mining claims. The Draft EIS notes that PLP’s existing permits are for resource exploration only. Notably, on the same page, the Draft EIS states that the 78-year mine expansion is reasonably foreseeable for “continued exploration and development.” Further, the Draft EIS itself notes that project expansion could expand and make use of the project mine site and infrastructure “similar to what has happened with other Alaskan mines where adjacent reserves are commonly owned.”

PLP’s existing mining claims are evidence that the 78-year build out plan is not only reasonably foreseeable but a future phase of a connected action whose plans have already progressed to the “proposal” stage. Regardless of the Corps’ analysis of the 78-year mine plan as a “reasonably foreseeable future action” in the Draft EIS, its review of PLP’s proposed project is still subject to improper segmentation.

Also, like the research facility, even if a 20-year mine were economically feasible and could stand alone, the record supports the conclusion that it was never intended to stand alone. On the contrary, the 20-year mine concept is a post-hoc idea designed to limit and expedite permit review. Moreover, as in Bragg, over many years and continuing to the present day, PLP has readily acknowledged to investors, regulators, and the mining community that the 20-year mine is only the first phase of its overall plans to explore and develop the Pebble...
deposit for 78 years.

Courts will also require a single EIS where a project would have been “irrational” or “unwise” without the development of subsequent phases. In *Cady v. Morton*, for example, a mining company had leased coal rights in over 30,000 acres from the Crow Tribe for a term of 10 years and as long thereafter as coal is produced in paying quantities, and the company entered into contracts with four utility companies to supply 77 million tons of coal over a 20-year period. The company then applied to the U.S. Geological Survey for approval of a much smaller mining plan covering a 5-year operation on about 770 acres of land that it owned outright. The company’s massive capital investment and extended contractual commitments, however, presented a situation in which it would have been “irrational, or at least unwise, to undertake the first phase if subsequent phases were not also undertaken.”

Although each mining plan would have had some independent utility, the court nonetheless found that the “breadth and scope” of the projects made possible by the lease required “the type of comprehensive study that NEPA mandates” to inform the agency about the environmental consequences of its decision. The court therefore held that a single EIS must be prepared for the entire project contemplated by the lease, as well as for each specific mining plan, such as the 770-acre plan. Like the 5-year mining plan on 770 of the more than 30,000 acres to which the company in *Cady* held mining rights, PLP’s proposal for a 20-year, 1.5 billion-ton mine is just one part of a much larger plan to develop the resources to which PLP and NDM hold mining rights. Moreover, even assuming for the sake of argument that PLP could demonstrate that a 20-year mine has some independent utility, the project would, like the 5-year plan in *Cady*, amount to a situation in which it would be “irrational” and “unwise” to undertake the first phase if subsequent phases were not also undertaken. Indeed, based on PLP’s own statements and figures, the 20-year mine project would involve a massive $9 billion investment for initial construction and sustaining capital costs in order to develop just 12.5%

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768 *Cady v. Morton*, 527 F.2d 786, 789 (9th Cir. 1975) (considering whether NEPA required a programmatic and site-specific EIS for a small segment of a larger mining project).
769 *Id.*
770 *Id.* at 795 (quoting *Trout Unlimited v. Morton*, 509 F.2d 1276, 1285 (9th Cir. 1974)).
771 *Id.*
772 *Cady v. Morton*, 527 F.2d 786, 795 (9th Cir. 1975).
of the ore resource. It would be irrational and not in the best interest of investors to make such an investment when the top development case is reportedly 55%.\footnote{NDM Press Release, Northern Dynasty Receives Positive Preliminary Assessment Technical Report for Globally Significant Pebble Copper-Gold-Molybdenum Project in Southwest Alaska (February, 23 2011), pages 10-12 available at: https://www.sec.gov/Archives/edgar/data/1164771/000106299311000722/exhibit99-1.htm (showing initial capital cost of $6,009,800,000 and sustaining capital requirement for 25-year mine of $3,204,000,000). \textit{See also}, NDM Press Release, Northern Dynasty Refutes Short Seller Claims (Feb. 17, 2017), p. 8, available at https://www.sec.gov/Archives/edgar/data/1164771/000106299317001035/exhibit99-1.htm ("a review of a preliminary draft US$13 billion mine planning scenario by an independent engineering firm commissioned by Northern Dynasty identified issues with that study and identified savings that reduced the preliminary capital estimate by US$4 billion.").}

Another important factor is whether the proposed action will render a subsequent project a “\textit{fait accompli}” or otherwise tie the agency’s hands.\footnote{\textit{Bragg v. Robertson}, 54 F. Supp.2d 635, 649 (S.D. W.V. 1999) (permitting the first phase of a mine to be authorized under NWP 21, which does not require NEPA review); \textit{see also Ohio Valley Environmental Coalition v. Bulen}, 315 F. Supp.2d 821 (S.D. W.V. 2004) (rejecting as illegal segmentation coal mining company’s attempt to receive authorization under NWP 21 to fill a small segment of larger stream while waiting for review of its 404 permit application to fill that stream, and emphasizing that operations under the first phase would “directly and substantially” influence the Corps’ decision on the second phase); \textit{Maryland Conservation Council, Inc. v. Gilchrist}, 808 F.2d 1039, 1042 (4th Cir.1986) (“Because it is inevitable that the construction of the highway will involve a major federal action, it follows that compliance with NEPA is required before any portion of the road is built.... The decision of the Secretary of the Interior to approve the project, and the decision of any other Secretary whose authority may extend to the project, would inevitably be influenced if the County were allowed to construct major segments of the highway before issuance of a final EIS. The completed segments would ‘stand like gun barrels pointing into the heartland of the park.’ ... It is precisely this sort of influence on federal decision-making that NEPA is designed to prevent.”); \textit{Pamlico-Tar River Foundation v. U.S. Army Corps of Engineers}, 329 F. Supp.2d 600, 616 (E.D. N.C. 2004) (relying in part on the fact that the Corps had taken “reasonable steps” to ensure that issuing the requested permit would not “influence future mining permits”).} The 20-year mine plan under consideration in the Draft EIS involves such an enormous dedication of resources and commitment of infrastructure that it virtually forces the Corps to later approve a 78-year mine. Indeed, in a subsequent permitting process for the 78-year mine, PLP would assert the economic importance of allowing continued operations and development, as well as the reliance by the local and state economy on existing mining operations. Moreover, PLP’s 2011 Preliminary Economic Assessment notes the economics of building one project on to another, where it shows that all three development scenarios (2.0 billion ton Investment Decision Case, 3.8 billion ton Reference Case, and 6.5 billion ton Resource Case) would have the exact same initial capital cost of US$6,009,800.\footnote{\textit{Id.} (showing initial capital cost for all plans = US$6,009,800,000; sustaining capital cost requirements for 2.0 billion ton = US$3,204,000,000; and operating costs of $11.6/ton). Since the Project Description projects a milling rate of 66 million tons per year (Draft EIS Appendix N, at page 1), then that’s $736,560,000 in operation costs per year (x 20 years = $14,731,200,000 for the life of the mine).} So with the same initial capital cost for each plan, and the total costs for the entire project running to approximately US$23.0 billion by the end of 20 years,\footnote{\textit{Id.} (showing initial capital cost for all plans = US$6,009,800,000; sustaining capital cost requirements for 2.0 billion ton = US$3,204,000,000; and operating costs of $11.6/ton). Since the Project Description projects a milling rate of 66 million tons per year (Draft EIS Appendix N, at page 1), then that’s $736,560,000 in operation costs per year (x 20 years = $14,731,200,000 for the life of the mine).} with more than 88% of the resource still in the ground, and
with previous economic feasibility plans to mine at least 6.5 billion tons, it is not reasonable for the Corps to segment and only consider a mine of 1.44 billion tons.

For all these reasons, the Corps must prepare a single revised Draft EIS evaluating the true extent of the overall mining plan, including alternatives to the combined 20-year and 78-year mines. The revised Draft EIS must analyze alternatives to the connected actions, such as alternatives based on previously described 45-year and 78-year scenarios, mining the entire known deposit, mining additional ore that PLP and NDM intend to discover to the east and north of the main deposit, and mining the 12 additional mineral targets identified by PLP and NDM within their 2,402 mining claims.\textsuperscript{777} The revised Draft EIS must also analyze the environmental consequences associated with the connected actions, including cumulative impacts, such as those resulting from the mining of additional claims surrounding the entire Pebble deposit owned by companies other than NDM and PLP.\textsuperscript{778} Mitigation must be revisited as well. For example, revenues would be higher for the overall combined mining plan, and thus proposed mitigation currently described as too expensive\textsuperscript{779} may become more reasonable and feasible.

E. \textbf{Failure to Include a Reasonable Range of Alternatives}

The Corps improperly screened out a myriad of feasible and reasoned alternatives that should have been analyzed in the Draft EIS. As it stands, the Corps is merely analyzing the project applicant’s proposal with a few slight variants and has wholly failed to take a hard look at other feasible alternatives and provide those alternatives for public review. The alternatives are substantially similar, such that the mine site does not change among them, and none of the alternatives analyze the full build out of the mine, which is inconsistent with the stated purpose and need.\textsuperscript{780} The substantial similarity between the alternatives effectively skews the analysis in favor of a prejudiced end result. The Corps has incorrectly constrained and biased the alternatives analysis in favor of PLP’s preferred alternative, in violation of NEPA.

Moreover, material changes to the proposal after the Draft EIS was released, and the proponent’s plans to conduct field work after the Draft EIS deadline that is critical to informing the public about the extent of environmental harm, virtually assure that the range of alternatives considered are not adequately factoring in changes to the project’s nature and

\textsuperscript{777} See supra discussion at section III.C.2; Ghafarri et al. (2011).

\textsuperscript{778} For a detailed discussion of the reasonably foreseeable cumulative impacts associated with mining the Pebble deposit, see EPA Watershed Assessment, Chapter 13. For a current depiction of the state mining claims staked in the Pebble deposit area, see DNR Mine Claims Mapper, available at http://akmining.info/ and associated GIS layers available for download at: http://asgdc.alaska.gov/#137. There are currently approximately 3,200 mining claims active in the Bristol Bay region owned by at least five other mining companies. In addition, there are more than 4,000 abandoned state mining claims in the same area that may be re-staked by new mining companies at any time, as they are located on state lands open to mineral entry. Id. See also https://pebblewatch.com/wp-content/uploads/2017/10/Footprint_20171006.jpg.

\textsuperscript{779} See, e.g., Draft EIS, p. B-74 (noting that although the EPA recommended that the bulk tailings facility be lined, the Corps concluded not to line the facility in part because the liner “would increase costs”).

\textsuperscript{780} See supra, Section V.C.
scope. The Corps thus has wholly failed to take a hard look at other feasible alternatives and provide those alternatives for public review.

As detailed below, dismissal of these alternatives is inadequate. The record before the agency doesn’t support it, and indeed many NEPA cooperating agencies expressed concerns that these alternatives were improperly dismissed without sufficient analysis or explanation. The Corps must revise the Draft EIS to take into account the following alternatives, as they are supported in the record and should be subject to public review and comment.

1. Legal Background

NEPA requires the agency to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources.”

The EIS must also provide a description of the underlying need and purpose to which the agency is responding in proposing the alternatives and the proposed action. The EIS must “[r]igorously explore and objectively evaluate all reasonable alternatives.” This alternatives requirement is “the heart” of the EIS. Descriptions must be given for any alternatives eliminated from detailed study. The purpose of the alternatives requirement is to analyze a variety of impacts and present a range of choices to the decision maker. The “touchstone” of the alternatives inquiry is “whether an EIS’s selection and discussion of alternatives fosters informed decision-making and informed public participation.”

To satisfy the alternatives requirement, the EIS must consider all reasonable alternatives to a given project, and it must rigorously explore and objectively evaluate those alternatives. The alternatives analysis should present the environmental impacts in comparative form, thus sharply defining important issues and providing the public and the decisionmaker with a clear basis for choice. Consistent with NEPA’s basic policy objective to protect the environment, this includes more environmentally protective alternatives. It also includes

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781 42 U.S.C. § 4332(E); 40 C.F.R. § 1508.9(b).
782 40 C.F.R. § 1502.13.
783 Id. § 1502.14.
784 Id. § 1502.14.
785 Id. § 1502.14(a).
786 40 C.F.R §§ 1502.14, 1505.1(e).
787 State of Cal. v. Block, 690 F.2d 753 (9th Cir. 1982) (citation omitted).
788 Id. § 1502.14(a).
790 40 C.F.R. § 1500.2(e) (agencies must “[u]se the NEPA process to identify and assess reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment”).
reasonable alternatives submitted by the public at scoping.\(^{791}\) “The existence of a viable but unexamined alternative renders an [EIS] inadequate.”\(^{792}\)

“Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.”\(^{793}\) In defining what is a “reasonable” range of alternatives, NEPA requires consideration of alternatives “that are practical or feasible” and not just “whether the proponent or applicant likes or is itself capable of carrying out a particular alternative”; in fact, “[a]n alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable.”\(^{794}\) Agencies are prohibited from taking actions during the NEPA process that would limit the range of reasonable alternatives.\(^{795}\)

Courts have held that NEPA’s twin aims of facilitating informed government decision making and ensuring public transparency are undermined and a violation of NEPA has occurred where an agency “pre-determines” the outcome of the analysis by “irreversibly and irretrievably commit[ting] itself to a plan of action” before completing the necessary analysis.\(^{796}\)

The EIS must also include a discussion of the environmental consequences of the proposed action and alternatives, including the environmental impacts of each alternative, any adverse environmental effects that cannot be avoided if the proposal is implemented, and any irreversible and irretrievable commitments of resources.\(^{797}\) As such, in BBNC’s scoping comments, we identified that “the EIS must include a discussion of alternatives for each project component, including, but not limited to alternatives for: mine pit location, mine tailings location, use of various water treatment methods and management pond designs, use of different tailings storage and design methods, tailings dam construction location and composition, milling rates and project lifespan, mine to waste strip ratios, gold recovery methods (including the potential for future cyanide use on tailings containing gold remnants), water discharge locations, energy sources (including use of power transmission lines in lieu of a pipeline and powerplant at the site), transportation methods (including use of a slurry pipeline instead of trucking and barging), alignments of all linear project components, port location, ferry crossing locations, best available mining technologies, alternative sources of


\(^{792}\) Mont. Wilderness Ass’n v. Connell, 725 F.3d 988, 1004 (9th Cir. 2013) (quotations and citation omitted).


\(^{795}\) See 40 C.F.R. § 1506.1; see also, e.g. W. Watersheds Project v. Zinke, 336 F. Supp. 3d 1204, 1239 (D. Idaho 2018) (“decision by BLM to commit to a particular outcome before completing a full NEPA analysis may foreclose or diminish the prospect for an open-minded examination of alternatives down the road.”).

\(^{796}\) Forest Guardians v. U.S. Fish & Wildlife Serv., 611 F.3d 692, 714 (10th Cir. 2010).

\(^{797}\) Id. § 1502.16.
gold/copper/molybdenum on mineral properties owned by PLP/NDM parent company Hunter Dickinson, and compensatory mitigation options.” In addition, BBNC’s scoping comments noted that as to the transportation corridor and natural gas pipeline facilities and operations, “the Draft EIS should fully explore the different route alternatives, different tidewater port options, rail options, slurry pipeline options, air options, and water transport options.” The Draft EIS should also consider alternatives to the fully developed 78-year mine scenario.

Agencies need not consider every single alternative possible. A rule of reason binds agencies’ choice and discussion of alternatives to those that are “feasible,’ or that “permit a reasoned choice.” Courts will make “a pragmatic judgment whether the [Environmental Impact Statement's] form, content and preparation foster both informed decision-making and informed public participation.” How an agency defines the purpose and need of its project or action determines the range of alternatives it should consider. Project alternatives derive from an EIS’s “Purpose and Need” section, which specifies “the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” “The stated goal of a project necessarily dictates the range of ‘reasonable’ alternatives and an agency cannot define its objectives in unreasonably narrow terms.”

Although agencies need not consider every available alternative, “the existence of reasonable but unexamined alternatives renders an EIS inadequate.” NEPA regulations further provide that “[a]gencies shall not commit resources prejudicing selection of alternatives before making a final decision.” An EIS “shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made.” Courts have held that an agency must not skew its alternatives in favor of a certain end result, such as in instances where action alternatives are nearly identical. Courts will also hold that the range of alternatives considered is inadequate if the nature and scope of the proposed action changes between the draft and final impact statement, and if the agency does

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798 See supra, Section V.C. (Improper Segmentation).
799 See City of Sausalito v. O'Neill, 386 F.3d 1186, 1207 (9th Cir.2004) (alteration and internal punctuation omitted) (“The rule of reason guides both the choice of alternatives as well as the extent to which the EIS must discuss each alternative.”).
800 California v. Block, 690 F.2d 753, 761 (9th Cir.1982).
801 See, e.g., W. Watersheds Project v. Abbey, 719 F.3d 1035 (9th Cir. 2013) (citing Westlands Water Dist. v. U.S. Dep't Interior, 376 F.3d 853, 868 (9th Cir. 2004)).
802 40 C.F.R. § 1502.13.
803 City of Carmel–by–the–Sea v. U.S. Dep't of Transp., 123 F.3d 1142, 1155 (9th Cir.1997).
805 40 C.F.R. § 1502.2(f); see also id. § 1506.1.
806 Id. § 1502.2(g).
807 See, e.g., Muckleshoot Indian Tribe v. U.S. Forest Service, 177 F.3d 800 (9th Cir. 1999).
not update the list of alternatives considered to reflect these changes.\textsuperscript{808} Furthermore, courts will apply greater scrutiny to the range of alternatives presented to projects whose purpose is to harm, rather than conserve or protect, the environment.\textsuperscript{809}

2. Larger and Smaller Mine Sizes

The Draft EIS fails to include a reasonable range of alternative mine sizes, especially in light of past PLP proposals and permit applications, comments from cooperating agencies, past findings related to economic viability made by EPA, and the failure of PLP to prove that its proposal is economically viable. As discussed in Sections III.C. and V.D. of this comment letter, PLP’s proposed mine size has varied over the years, and even within the 404 permit process (from 1.2 billion tons in the original permit application, to 1.5 billion tons in May 2018 revisions, to 1.44 billion tons in December 2018 revisions). However, none of PLP’s proposals analyzed in the 404 permitting context have been proven economically viable. Indeed, as PLP continues to state to investors: “A final development design has not yet been selected.”\textsuperscript{810}

Moreover, as discussed in Section V.C., the project as proposed cannot meet the stated Purpose and Need as its impacts on global metals markets is miniscule. In light of the background described throughout this letter, the Corps should conduct an independent evaluation of PLP’s project economics and develop alternative mine sizes (based on throughput or total amount mined) that meet the stated Purpose and Need and better align with PLP’s actual plans to mine at least 6.5 billion tons of the delineated deposit. As currently drafted, the Draft EIS forecloses the agency’s options solely to the project proposal, in violation of NEPA. In developing these alternatives for public review and comment, the Corps should also include expanded infrastructure scenarios required to support a 6.5 billion ton mine. Alternatives must be developed and analyzed that on the one hand reduce the project footprint and impacts to salmon and waters, and on the other hand portray an accurate depiction of project economics and PLP’s actual plans.

To be brief, in line with cooperating agency comment on this issue, we request that the Corps analyze the following mine sizes as proposed alternatives and issue a revised Draft EIS with these alternatives for public review and comment:

- **EPA 0.25 Scenario (0.23 million metric tons with a throughput of 31,100 metric tons per day).** As noted by the Corps, consideration of this option was evaluated “as a potential means to reduce project footprint, as well as surface, water, and other

\textsuperscript{808} See, e.g., Natural Resources Defense Council v. U.S. Forest Service, 421 F.3d 797 (9th Cir. 2005) (land management plan; incorrect market demand discussion affects alternatives).

\textsuperscript{809} See, e.g., Earth Island Institute v. U.S. Forest Service, 697 F.3d 1010 (9th Cir. 2012) (environmental assessment); Sierra Club v. Espy, 38 F.3d 792 (5th Cir. 1994) (same).

\textsuperscript{810} NDM, Management’s Discussion and Analysis Three months ended March 31, 2019, at page 9, available at https://www.sec.gov/Archives/edgar/data/1164771/000149315219008038/ex99-2.htm.
environmental impacts.”

However, the Corps dismissed this option as “not economically practicable because it would have a negative NPV [net present value]” “due to the fixed infrastructure component of the costs.”

EPA responded that the Corps did not have adequate information to dismiss this option, as PLP has failed to provide detailed economics of its proposal, noting “more information is needed describing what is considered a reasonable rate of return and how it compares with the rate of return of the proposed action. Otherwise the basis for dismissing these options is not substantiated.”

- **Throughput 50,000 tons per day.** As noted by EPA, “Only one option smaller than the proposed throughout of 180,000 tpd was considered, and it was dismissed as not reasonable because it would not provide a reasonable return on investment. We recommend that mine sizes between 50,000 tpd and 180,000 tpd be assessed to determine if there are other smaller mine throughputs that could result in reduced impacts and still be practicable.”

  The Corps dismissed this alternative as “not economically practicable because it would cause the overall project to have a negative NPV.” However, PLP has refused to provide the Corps with an economic feasibility study to support screening out this alternative as not economic. Therefore, it is arbitrary for the Corps to reject such an alternative on economic grounds.

- **Throughput 160,000 tons per day.** As noted by the Corps, this was PLP’s original 404 permit application submitted in December 2017. The Corps claims that it would “increase the overall adverse impacts because of the increased footprint for the LGO stockpile,” but this rationale ignores the large water management pond that was added to the project design once PLP amended its original permit application. This addition of the water management pond increased the overall project footprint significantly and undercuts the Corps’ rationale for dismissing analysis of this alternative.

- **Throughput 320,000 tons per day.** As noted by Nondalton Tribal Council “a throughput that’s 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 should 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

812 Id.
alternative in the EIS.”

The Draft EIS contemplates only those alternatives that would achieve a pre-determined outcome of mining 1.44 billion tons of the Pebble deposit. Each of the alternatives would result in the exact same amount of production and nearly completely identical infrastructure and layout at the mine site. The Draft EIS fails to analyze mining less of the deposit as a means of avoiding impacts, failing to even include an alternative for 1.2 billion tons originally in Pebble’s permit application and the plan put forth for the NEPA scoping process. The Corps has failed to require PLP to show that mining at a smaller amount or with different alignments and placements of facilities and waste would be economic, feasible, and less environmentally damaging. Instead, the Corps has pre-determined the outcome will be a mine of 1.44 billion tons in size and with no real waste disposal options other than the proposal itself. To avoid improper pre-determination, the Corps must develop and meaningfully analyze the alternatives discussed here.

In addition, when developing alternative mine sizes for public review, the Corps must consider a variety of siting and layout options for each size, in order to minimize impacts to wetlands and aquatic resources. Indeed, the Corps’ current assumptions of size and placement of specific mine site components – for example that they pyritic TSF must be placed close to the pit – may not hold true under larger or smaller mining scenarios. The Corps should consider siting and layout options that anticipate PLP’s eventual expansion of its mine proposal in order for its net present value to remain positive and in keeping with standards mining practices across Alaska where expansion is the norm, not the exception.

3. Drystack Tailings Option

The use of drystack tailings involves removing most of the water from tailings allows them to be stored in piles, rather than as a mud slurry. The resulting “dry cake” can be piled on the ground like ordinary dirt, known as dry stack storage. Dry stack tailings are “more structurally stable than wet tailings, and the risk of catastrophic flowage or escape is reduced.” Under a drystack tailings scenario, “the tailings impoundments themselves are more versatile in structure and location, total facility size is slightly reduced, and rehabilitation is easier.” The drystacking method is currently being used at Alaska’s Pogo and Greens Creeks Mines and was an alternative under consideration in the Donlin NEPA.

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818 Memorandum from Ridofli Environmental to Matthew Newman and Wesley Furlong, Proposed Pebble Project – EIS Alternatives Analysis Screening Comments on Preliminary List of Project Options Being Considered (Aug. 31, 2018), submitted on behalf of Nondalton Tribal Council.

819 Draft EIS at page 4.1-8 to 4.1-9 (“similar to what has happened with other Alaskan mines where adjacent reserves are commonly owned.”)


821 Id.

822 Id.

823 Id.
As such, cooperating agencies such as the State of Alaska Department of Natural Resources, EPA, and Nondalton Tribal Council strongly recommended the Corps include a dry-stack tailings option or other paste dewatering method in the Pebble Draft EIS for public review and comment:

- **Alaska DNR:** “The Draft EIS should include an alternative to whole tailings, such as a dry stack or paste dewatering method.”

- **EPA:** “The EPA has reviewed the AECOM Technical Memorandum ‘Pebble Project – RFI 054 Technical Report Review’ (September 24, 2018). The memo concludes that dry stack tailings is not practicable, both technically and economically. We believe that further information and analysis is needed to support this conclusion and offer specific comments below. Additionally, we recommend that this further analysis occur by evaluating filtered tailings as an alternative in the EIS.”

- **Nondalton Tribal Council:** “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.”

Specifically related to the dry stack tailings alternative, the EPA referred the Corps to a sister agency that developed this alternative for a mine of similar size and characteristics as Pebble – the Resolution Copper Mine EIS by U.S. Forest Service. As noted by EPA, “Resolution Copper Project EIS website and is informative in how dry stack alternatives and TSF locational and layout alternatives are assessed and the alternatives development process in general.” EPA directed the Corps to “include this option as an alternative for detailed analysis in the EIS for the bulk tailings.” The Corps has failed to do so, claiming at first that the option is not economic, and then revised its justification to being not practicable because it would “greatly

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825 Letter from Kyle Moselle, Alaska DNR Associate Director, to Shane McCoy, USACE Program Mgr. (June 29, 2018), at page 5.

826 As noted elsewhere in these comments, there is no economic feasibly study of the proposed mine. Consequently, an alternative cannot be ruled out as uneconomic, as PLP’s contractor does here with the dry stack tailings option.

827 EPA Comments, Pebble Project Dry Stack Tailings Option (Oct. 24, 2018).

828 Pebble Project Preliminary Draft EIS Comment Response Matrix, Nondalton Tribal Council Comments on Chapter 2 – Alternatives, comment no. 17, pages 12-16.


complicate the logistics of the milling operation." But neither justification should be used to screen out this alternative prior to public review. Once again, PLP provided no data on project economics and NEPA documents for large and similar mine designs across the country have included drystack as an alternative for public review.

Drystack tailings has the potential to greatly reduce the risk from tailings failures and thus should be considered as a project alternative in the EIS. Indeed, the Mount Polley Independent Expert Review Panel (IERP) identified dry stack tailings as the Best Available Technology (BAT) for new tailings impoundments. The Corps should revise the Draft EIS to include this alternative and re-issue it for public comment.

4. **Bulk TSF Liner Alternative**

The Corps has improperly screened out an alternative where the bottom of the bulk TSF would be “fully lined so that the bulk tailings would not be in contact with the ground surface.” In dismissing this alternative, the Corps claims, without detailed justification or citation, that the environmental impacts would be increased under this option. Because of the potential for a liner to reduce the impacts to groundwater, this alternative requires more analysis and public scrutiny. As EPA stated in its comments as a cooperating agency, “we have significant concerns regarding the rationale for the range of alternatives and lack of inclusion of a tailings dry stack alternative and bulk TSF liner alternative.” Notably, EPA identifies this as a standard mining practice and one considered in other Corps EISs: “A liner and a downstream constructed dam were components of the Donlin TSF that was recently permitted by the Corps; it is not clear why these techniques would not at least be carried forward for detailed analysis in the Pebble EIS.” The Corps should include a bulk TSF liner alternative in a revised Draft EIS for public review and comment.

5. **Pyritic Tailings Facility Designed in Perpetuity**

The Draft EIS omits any discussion of a pyritic tailings facility remaining in perpetuity. This is contrary to PLP’s original permit application submitted to the Corps in 2017 where the pyritic tailings facility would have remained in the Koktuli watershed (with embankments on the north and south tributaries) post-operations. Despite more recent changes in the 404 permit application, this proposal is still likely the more reasonable and final plan at closure, as placing pyritic tailings back into the pit at closure is contrary to standard mining practices and would foreclose future mining of 88% of the remaining deposit. It is unreasonable for the Corps to rely on the assertion that a mine developer and permit applicant would forever

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833 Pebble EIS Preliminary Draft Chapter 1 and 2, EPA Comments (Nov. 21, 2018).
seal off access to 88% of the gold, copper, and other minerals in the ground by placing water and pyritic tailings above the remaining deposit.

Indeed, at the cooperating agency meeting to discuss alternatives development, DNR suggested that this alternative be analyzed, stating “it may be reasonable to evaluate environmental effects of leaving pyritic tailings in temporary storage and not returned to pit.”

Because PLP’s plan to place pyritic tailings back into the pit at the close of mining is not supported by an economic feasibility study, because it was PLP’s original intention to maintain a pyritic tailings facility in perpetuity, and because it is not standard mining practice to place pyritic tailings back into a pit when 88% of the resource is still in the ground, the Corps cannot rely on PLP’s proposal to avoid its responsibilities to analyze this alternative. The Corps must analyze an alternative where PLP does not place the pyritic tailings back into the pit, and re-release the Draft EIS for public review and comment.

6. Use of Cyanide and other Secondary Gold Recovery

The Draft EIS states that there is “[n]o secondary gold recovery plant, eliminating the need to use cyanide on the project.” PLP has publicly stated that by forgoing secondary gold recovery, they will be leaving behind 12 percent of the potentially recoverable gold in the pyritic tailings. PLP has stated that forgoing cyanide was done with the intent to “enhance the probability of us getting a permit.” This statement does not form a sufficiently rational basis for the Corps to ignore this issue. Among other things, PLP has failed to provide an economic feasibility study of its proposal, and it is not possible for the Corps to adequately determine the veracity of PLP’s claims that they will forever forgo secondary gold recovery and leave substantial profits in the ground. The Corps should treat with skepticism PLP’s claims that it will leave behind profits had from secondary gold recovery.

Contrary to the assertion about not using cyanide in the Draft EIS, statements from PLP over the past six months and simple economics, support the view that PLP will in fact use secondary gold recovery in its project. And, according to PLP, this might even occur soon after obtaining a 404 permit from the Corps, should one be granted. Since PLP has made statements to the public and to the Corps in response to RFI 62a that it will indeed use secondary gold recovery soon after obtaining a permit to mine, the Corps must require PLP to submit these project plans and must assess these project plans as a project alternative in revisions to the Draft EIS. The public must then be afforded the opportunity to review and comment on a secondary gold recovery alternative and its direct, indirect, and cumulative impacts.

838 Draft EIS, page 5-16.
840 Id.
In January 2019, in media appearances and at investor conferences, the president and vice president of PLP’s parent company, Northern Dynasty Minerals (NDM), both stated that while use of cyanide was removed from the current proposed project to assist in expediting the permitting process, at a later date cyanide or another type of toxic secondary gold recovery would be used to obtain 12 percent of the gold left behind in the pyritic tailings under the current plan:

- **NDM President and CEO Ron Thiessen**: The Pebble Project proposal has “been optimized for permitting and people’s comfort and level of operation. It does not ... I mean, some of our gold is contained in pyrite, and typically you would need a cyanide circuit for that. And many mines have cyanide circuits, in fact. Kinross’s mine in Alaska is a 100% cyanide circuit as would Donlin be a cyanide circuit. But Tom [Collier] said, ‘Listen, let’s—’ Again, people have a mental image, a mental thing about cyanide. Let’s not use it. Let’s just say, ‘Okay. We’ll take cyanide circuit out. We’ll leave it aside.’ And in future if people want us to recover more gold, because that enhances the value for taxation. It enhances the royalties for the state of Alaska, and it will enhance the returns that will come. We’ll look at it then. And maybe by then, the lixiviant that you use for recovering gold out of pyrite will no longer be cyanide. It’ll be something else. I mean, there’s lots of work going on there now, and I could see in the next three to five years, us having a different completely different chemical for recovering gold other than cyanide.”

- **NDM President and CEO Ron Thiessen**: Processing the pyrite ore using cyanide was off the table for now, Thiessen said, because it was a psychologically sensitive issue for some people. “We said we’ll take it out for now, but if the state says to us they want more revenue, we can always reconsider that optionality in the future,” he said. But Thiessen was optimistic on the role new technologies could play in unlocking Pebble’s latent value. “Who knows, in three to five years there might be a new lixiviant that could enable the pyritic gold to be recovered without using cyanide. There is some work being done on benign salts that looks promising.”

- **NDM VP Corporate Communications Doug Allen**: “In an effort to be responsive to the feedback we’ve received, we’ve taken cyanide out of the process flow in this permit. So, although cyanide is used safely throughout the mining industry, and indeed the Donlin project which just got its Record of Decision last August, is based entirely on cyanide, because it is such a bad word in the environmental community, in an effort to show responsiveness and to enhance the probability of us getting a

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841 Smith Weekly Research Discussion with Ron Thiessen pt 2 (January 23, 2019), audio available at: https://www.smithweeklyinternational.com/online/Wq36PU9b5ir8D901JhsdF90cgA1/files/2IAwii82yp2_SWRDISCUSSIONSRTHIessenNAK1.mp3

permit, we have taken the secondary gold recovery circuit out of this. So about 12 percent of our gold would be affected by that and we hope at a later date to get permission to potentially add a secondary circuit but not at this time.”

Less than one month before the close of the Draft EIS comment period, the Corps uploaded a response from PLP to a request for information regarding the potential use of cyanide or other secondary gold recovery methods. In this response, PLP admitted that it is “indeed likely that any future expanded development could include some form of secondary gold recovery. Cyanide is one of the few chemicals that has the ability to put gold into solution and thus has been the traditional means used in the mining industry for the recovery of microscopic-sized gold that cannot be separated from gangue minerals by purely physical processes.”

If PLP is indeed leaving behind 12 percent of the gold in its current proposal, and its current proposal states that the company will mine 12.1 million ounces of gold, then at current gold prices of $1,300 an ounce, simple math shows this amounts to PLP leaving approximately US$2.145 billion gross profits in the ground:

\[
\frac{12.1 \text{ million ounces Au mined}}{88\%} = \frac{x}{100\%}
\]

\[x = \frac{12.1 \text{ million ounces Au}}{1.65 \text{ million ounces Au left behind without secondary recovery}} \times \frac{100\%}{\text{US$ 1,300 per ounce of Au}} \times \text{US$ 2,145,000,000 gross profits left behind without secondary recovery}\]

Because the Corps has failed to require PLP to produce an economic feasibility study of the proposed mine, the Corps cannot reasonably conclude that PLP will leave US$2.145 billion in the ground by forgoing secondary gold recovery. Indeed, PLP has publicly stated that the capital expenditures to build the mine might be at least US$9 billion.

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844 Response to RFI 62a (posted to Pebble EIS website June 5, 2019).
845 Draft EIS, Appendix N, Project Description (December 2018), at page 12.
846 Moreover, as noted in the 2011 Preliminary Economic Assessment, a secondary gold recovery plant would cost approximately $160.5 million in initial capital (in 2011 dollars), thus reducing the net profits of this venture to a little less than US$2 billion. See attached Appendix F, Wardrop report, page 71.
of an additional $2 billion once the infrastructure is already available an attractive option for a mine operator.

The Corps has a responsibility to independently verify project plans that rely on economic assumptions. But, since the Corps has failed to require an economic feasibility study that might illuminate project costs and the economic viability of leaving $2.145 billion in the ground, the Corps must err on the side of reasonableness and objectively evaluate a secondary gold recovery alternative in the Draft EIS. The Corps must then analyze the impacts of a secondary gold recovery option on the human environment. Based on statements from PLP and its parent company, this analysis must include the use of cyanide for gold recovery and might also include the use of other toxic materials such as salts and other lixiviants. Also based on statements from PLP and its parent company, the Corps must conduct this analysis for the current proposed 20-year mine plan, as PLP stated its intention of using cyanide or other lixiviants soon after obtaining its 404 permit.

7. Alternative Pipeline Alignments that Avoid Use of BBNC Subsurface

The Draft EIS correctly notes that PLP’s plans to “cross subsurface lands owned by Cook Inlet Region, Inc. and Bristol Bay Native Corporation” with a natural gas pipeline is “subject to approval of the landowners.” As has been clear for some time, BBNC objects to PLP’s proposal to place a natural gas pipeline on its subsurface lands and will never approve or give permission to PLP for its natural gas pipeline.

The Corps is not limited to the routes considered and eliminated by PLP, and is legally obligated to explore and evaluate reasonable alternatives in its EIS. As the Corps heard in scoping public hearings, it should consider pipeline alternatives that avoid BBNC’s subsurface estate, with one option being to connect into the proposed Donlin natural gas pipeline and running south to Pebble, completely avoiding BBNC’s lands. The Corps acknowledged this comment in its scoping report but then inappropriately dismissed this alternative for purposes of the Draft EIS. As it now stands, the Draft EIS contains no pipeline route alternative that avoids BBNC’s lands. All three alternative routes involve BBNC lands and BBNC adamantly opposes use of its lands for PLP’s natural gas pipeline.

848 Draft EIS, p. 4.2-4.
849 See attached Appendix A.
850 Statement of Kimberly Williams, BBNC Board Director, Pebble Project Scoping Meeting Newhalen, Alaska (April 12, 2018) Transcript, p. 43 lines 21-24 (“I would ask the Corps to look at, as an alternative, the use of the Donlin gas pipeline and bringing that gas pipeline down to the Pebble site where they need natural gas for the project.”). See also BBNC Scoping Comment letter at p. 31 (“The Corps should consult with local communities and surface and subsurface landowners to determine a route which will have the least impact on subsistence and other resources in the region.”). This consultation never took place.
851 Draft EIS, Appendix A—Scoping Report (Aug. 31, 2018) p. 31 (“Include an alternative pipeline route that goes north to connect with the planned natural gas pipeline to support the development and operation of the Donlin Mine.”).
The Corps rejected the northern pipeline route alternative prior to the Draft EIS, noting that the option was eliminated because “[t]he Donlin Gold pipeline does not exist, is not fully permitted or under construction, and is therefore not practicable.” However, the State of Alaska in its cooperating agency capacity objected to dismissing this alternative prior to the Draft EIS, noting that the Corps “[d]ismisses [an] otherwise viable option,” and that “[r]ather than dismissing the alternative based on the capabilities of an, as yet, unbuilt pipeline; it would be better to retain the option and evaluate it under a coordinated joint pipeline scenario … potentially reducing the cumulative impacts of both projects.” Likewise, after the Corps dismissed this option, EPA requested “that more explanation be provided regarding why utilization of the Donlin Gold gas pipeline is not practicable.”

As it now stands, the Draft EIS contains no pipeline route alternative that avoids BBNC’s lands. All three alternative routes involve BBNC lands and BBNC will not allow use or trespass of its lands for PLP’s natural gas pipeline.

8. Alternative WTP Outfall Locations to Address Water Balance and Flows Appropriate to Maintain Fish Habitat

PLP is proposing to mitigate its impacts to stream flow by controlling effluent flows from wastewater treatment plants into three separate outfall locations located in the North Fork Koktuli, South Fork Koktuli, and Upper Talarik Creek. As noted in the Draft EIS, an analysis of the effectiveness of this measure is “ongoing” at the time of the Draft EIS. The Draft EIS also notes that the likelihood of implementation of this mitigation measure is “probable” and notes that the analysis of the effectiveness should consider “alternatives to the effluent outfall locations identified in the proposed action that could reduce impacts (e.g., further reduce dewatering impacts).”

EPA requested that alternative outfall locations be disclosed and discussed under project alternatives, noting “we recommend that the Corps and AECOM consider whether there are alternatives to the effluent outfall locations identified in the proposed action that could have reduced impacts (e.g., further reduce dewatering impacts). We recommend that Appendix B consider the outfall locations as a component and discuss whether alternate locations could reduce impacts.”

Mitigation measures must be evaluated in NEPA documents as part of the proposed project. Therefore, if PLP and the Corps are evaluating alternative design measures to effluent outfall locations, these alternative outfall locations and flow rates must be disclosed in the Draft EIS as project alternatives for the public to review and comment. One of the most important impacts to salmon habitat from PLP’s proposal is the destruction of downstream salmon habitat from

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852 Draft EIS, Appendix B—Alternatives Development, p. 32.
853 State of Alaska, comments on POW-09 (Sept. 27, 2018).
856 Id.
dewatering. Downstream flow rates impact salmon habitat when they exceed or are below natural rates. These downstream flow impacts can have cascading impacts to aquatic resources, water balance, temperature, dissolved oxygen, sediment, suspended solids, aquatic vegetation, bank erosion and stability, all of which in turn impact habitat for salmon and resident fish.

9. **Underground Mine and Block Caving at Higher Grade Pebble East Deposit in Lieu of Open Pit Lower Grade Pebble West Deposit**

It is well-established through PLP and NDM disclosures that the richer ore deposit at the Pebble is found in the deeper Pebble East delineated resource. Mining this part of the deposit would require block caving and could potentially utilize underground methods that present less impacts to wetlands and aquatic resources. Underground mining in lieu of open pit mining offers significant environmental advantages including reduction in overall mine footprint, reduction in waste rock and overburden removal, and increased efficiency due to high-grade nature of the deposit.

EPA also requested this alternative be described and assessed in the Draft EIS, stating “if the Corps is going to assess alternate mine locations, then we recommend consideration of an alternate mine location at the Pebble deposit itself, which would entail underground mining Pebble East.” The Corps dismissal of this option because it is “not practicable using existing technology for the portion of the deposit that is proposed to be mined” is inaccurate compared to mine designs worldwide. Indeed, recent statements from NDM suggest that this alternative is not being fully assessed not because it is not technologically feasible, but because NDM does not want to pay for an economic feasibility study to assess its potential. The Draft EIS should be revised to include an alternative to open pit mining at Pebble West, namely, an underground mine at Pebble East.

10. **Removing Pyritic Tailings Out of Bristol Bay Altogether**

One of the most pressing concerns with mining the Pebble deposit is the pyritic tailings that must be stored and managed on site in perpetuity. Given the risks to the region’s pristine waters and aquatic ecosystem from these pyritic tailings, the Draft EIS should analyze an alternative where PLP must remove the hazardous pyritic tailings from the Bristol Bay watershed and export the tailings via ore ship or disposal elsewhere.

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860 Statement of Ron Thiessen, NDM President and CEO at Northern Dynasty Minerals Ltd. Presentation at John Tumazos Very Independent Research Metals and Natural Resources Conference 2019, Holmdel, NJ (June 19, 2019 5:25 p.m.), @ 41:40-44:12, available at [http://wsw.com/webcast/vir18/nak/?lobby=true&day=1](http://wsw.com/webcast/vir18/nak/?lobby=true&day=1) (“we have on the eastern part of the deposit […] Is that more amenable to some form of underground mining? Or should we open pit it? […] today I can’t tell you. We don’t have a plan for that. I can tell you that, you know, if we wanted to sink a shaft into Pebble East to do a feasibility study on some sort of bulk underground mining […] to complete a feasibility study, sink a shaft, complete a feasibility study probably going to be $4-500 million. So it just makes sense to go after the low-hanging fruit, which is 1.3 billion tons.”).
11. Alternative Facility and TSF Locations to Avoid Waters/Wetlands

The Draft EIS fails to provide any alternative facility locations that might further avoid impacts to waters and wetlands, instead all mine site facilities are given only one proposed location – PLP’s proposed location. The Draft EIS provides acreage figures for each component of the overall project, but the wetlands and aquatic impacts of each component—while necessary to assess impacts of the project—are not provided.\(^{861}\) The Draft EIS should describe why these project features cannot be resized, relocated, or reconfigured to reduce wetland and aquatic areas impacts.\(^{862}\)

EPA also requested the Draft EIS contain this information, stating “we recommend additional discussion of the basis for the design of the layouts, and why mine site components are placed in certain locations…. We recommend that the EIS assess whether there are other locations that may be farther away (but within the distance that tailings could be pumped) that could result in a more compact footprint or lesser impacts.”\(^{863}\) As EPA noted, this information is important to disclose to the public “if the configuration is utilizing the topographic limitations to the maximum extent practicable to reduce the overall mine site and footprint of each component thereby reducing aquatic resource impacts.”\(^{864}\)

Related to alternative TSF locations to avoid wetlands and waters, EPA “request[ed] that the Corps evaluate the TSF locations previously considered by PLP against the smaller mine plan – we recommend listing these locations in Appendix B (and showing them on maps) and assessing whether and which of the 35 alternative locations are reasonable and could result in reduced impacts. This information would better support the Corps’ hard look at alternative TSF locations as required by NEPA.”\(^{865}\)

The Corps must include an analysis of alternative facility and TSF locations and configurations that would avoid impacts to waters and wetlands for public review and comment. The comparison of these alternatives and an analysis of their comparative impacts to wetlands, waters, and salmon habitat should also be provided for public review.

12. Alternative Transportation Corridor Options and Variants that Utilize Only Landowner-Approved Options

The Draft EIS describes three transportation corridor Action Alternatives, with one variant consisting of a ferry terminal and road to the east of Kokhanok. As described in Section II of this comment letter, Action Alternatives 2 and 3 would cross lands to which BBNC is the

\(^{861}\) See Draft EIS, Appendix K, Table K2-1.

\(^{862}\) See attached Appx. E, at page 71, Yocom, Thomas G., Determining the least damaging practicable alternative for the proposed Pebble Project: Potentially less damaging practicable alternatives are improperly dismissed in the DEIS (June 6, 2019).


\(^{865}\) Comment Response Matrix, EPA Comments on Pebble Project Preliminary Draft EIS, Ch. 2, comment no. 71 at page 32.
unrestricted fee title owner. As expressed to the Corps and PLP in writing and in public testimony to the Corps, BBNC opposes use of its lands for Alternatives 2 and 3 and therefore these options never should have been included as alternatives in a NEPA document.°866

Further indicating the arbitrariness of the Corps’ decision to develop Action Alternatives 2 and 3 as currently proposed, while in the process of developing alternative transportation corridor alternatives for consideration in the Draft EIS, PLP explicitly informed the Corps that Action Alternatives 2 and 3 would not be practicable due to landowner objections:

- Statement of PLP to the Army Corps (May 25, 2018): “It should be noted that all access corridors are subject to PLP’s ability to negotiate a mutually acceptable access agreement with the associated landowners. The Proposed Project and Eagle Bay option will both require rights of way (ROWs) from Iliamna Natives Limited (INL) and Alaska Peninsula Corporation (APC). The Northern Access option will require ROWs from INL, Pedro Bay Corporation (PBC), Bristol Bay Native Corporation (BBNC) to cross a private parcel owned by BBNC, Cook Inlet Region Incorporated (CIRI), Tyonek Native Association (Tyonek), Salamatof Native Association (Salamatof), and Seldovia Native Association (Seldovia). The Southwestern Access option will require ROWs from Igiugig Native Corporation (Igiugig) and APC. All access routes also cross State of Alaska lands.”°867

- Statement of PLP to the Army Corps (Aug. 3, 2018): “PLP does not currently have access to private lands in the Diamond Point to Eagle Bay area that would be required for this alternative to be practicable.”°868

And yet, despite the fact that Alternatives 2 and 3 would not be practicable, and indeed PLP’s own admission of that fact, the Corps went ahead to include these not practicable alternatives as the only other transportation corridor alternatives in its Draft EIS. Agencies are prohibited from taking actions during the NEPA process that would limit the range of reasonable alternatives.°869 By ignoring BBNC’s right to determine the best use of its land, and by ignoring PLP’s own determination that Alternatives 2 and 3 were not practicable, the Corps violated its duties under NEPA. It is patently arbitrary for the Corps to predetermine

°866 See attached Appx A. See also, Pebble Project Draft EIS Public Hearing—Transcript of Public Testimony, Igiugig, Alaska, Volume I (taken March 28, 2019), pages 67-68 (“All of the action alternatives cross BBNC’s land, and BBNC has not given permission to anyone for that access, nor has it given anyone access to use its gravel or rock resources, and we do not intend to do so.”).

°867 Memo from James Fueg, PLP, to Shane McCoy, USACE (May 25, 2018) re Response to RFI-032 Project Options, at p. 7.

°868 Memo from James Fueg, PLP, to Shane McCoy, USACE (Aug. 3, 2018) re Additional Lake Access Options Studied by PLP (attached to response to RFI-032).

°869 See 40 C.F.R. § 1506.1; see also, e.g. W. Watersheds Project v. Zinke, 336 F. Supp. 3d 1204, 1239 (D. Idaho 2018) (“decision by BLM to commit to a particular outcome before completing a full NEPA analysis may foreclose or diminish the prospect for an open-minded examination of alternatives down the road.”).
the outcome of the transportation alternatives analysis to a sole option – which in this case also happens to be PLP’s own proposal.

As noted above, with respect to PLP’s proposed Action Alternative 1, the natural gas pipeline and eight materials sites would be located in and use BBNC’s subsurface rock, gravel, and sand. BBNC opposes the use of its subsurface estate for Alternative 1 and therefore this option never should have been included as an alternative in a NEPA document.870

In addition, for Alternative 1, a mere two weeks before the close of this comment period, the Corps removed from consideration major components of this option: the spur road to Iliamna and the ferry terminal and road to the east of Kokhanok. This was done due to landowner objections.871

Thus, because of private landowner objections, all three Action Alternatives are either not practicable as a whole or have major components or variants that are not practicable. This means not a single viable transportation and natural gas pipeline alternative is presented in this NEPA document. This requires the Corps to go back to the drawing board to develop new transportation corridor alternatives for public review and comment. Moreover, when the Corps re-designs transportation corridor alternatives for public review, it must make every effort to design options that avoid landowner conflicts, as well as significant fish and wildlife habitat.872 Failure to include a broad range of transportation corridor alternatives means the NEPA analysis is improperly constrained to consider only PLP’s proposal.

13. Alternative Power Generation

The Draft EIS fails to include a reasonable range of alternatives to PLP’s proposal to use a 270MW powerplant, located at the mine site, to generate power for its operations.

These recommendations were made to the Corps in scoping comments and by cooperating agencies and the Corps dismissed it without conducting the proper analysis of how it might lessen project impacts. The Corps noted that the alternative power generation “would potentially decrease the consumption of natural gas and associated emissions,” but concluded without providing any reasoning or analysis that “it would not replace the need for the natural gas power plant and pipeline.”873

Alternative power sources are necessary to evaluate the ability of the project to lessen impacts to air quality, private landowners (through placement of a pipeline), climate change,
environmental justice and safety, spill risk, fuel use, water quality, and fish and aquatic resources. Alternatives to natural gas should be considered that would mitigate climate emissions, remove the need for pipeline construction destructive to water quality and fish and aquatic resources, remove safety concerns with leaking and explosions, and mitigate air pollution. Alternative options that should be considered include using powerlines in lieu of a pipeline and using alternative and renewable power generation.

F. **THE DRAFT EIS RELIES ON FAULTY DATA AND FAILS TO INCLUDE KEY INFORMATION AND DATA, BASELINE SURVEYS, ADVANCED PROJECT DESIGNS, AND ANALYSIS ESSENTIAL FOR PUBLIC REVIEW**

NEPA requires the Corps to “[u]tilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man’s environment.”

“Accurate scientific analysis, expert agency comments, and public scrutiny” are essential to implementing NEPA. An EIS must clearly present information and analysis of the environmental consequences that form the scientific and analytic basis for consideration of reasonable alternatives. In preparing an EIS, agencies must “insure the professional … [and] scientific integrity, of the discussions and analyses in environmental impact statements.” The information included in an EIS “must be of a high quality,” and must allow for “[a]ccurate scientific analysis, expert agency comments, and public scrutiny.”

The agency must also discuss responsible opposing views.

Importantly for Bristol Bay and the proposed Pebble Mine Project, NEPA requires that impacts are discussed in proportion to their significance and “[d]ata and analysis in a [EIS] shall be commensurate with the importance of the impact” of the proposed action or its alternatives.

The NEPA process employed here by the Corps when analyzing the largest hardrock mine ever proposed for Alaska located within habitat of the world’s most prolific wild salmon population, ignores these requirements in violation of NEPA, as shown by the incomplete and faulty data relied upon in the Draft EIS. The Corps has allowed this NEPA process to proceed to a public comment period on the Draft EIS with major data gaps in all key areas of

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877 40 C.F.R. § 1502.24; see also Save the Peaks Coal. v. U.S. Forest Serv., 669 F.3d 1025, 1037-38 (9th Cir. 2015) (agencies have a “duty to ensure the scientific integrity of the [EISs] discussion and analysis”); League of Wilderness Defenders-Blue Mountains Biodiversity Project v. U.S. Forest Serv., 689 F.3d 1060, 1073-75 (9th Cir. 2012) (an agency must “ensure the ‘scientific integrity’ of the discussions and analyses in an EIS” (quoting 40 C.F.R. § 1502.24)).
878 40 C.F.R.§ 1500.1(b)
879 40 C.F.R. § 1502.9(b).
880 40 C.F.R. §§ 1502.15, 1502.2.
The Draft EIS affected environment description and analysis of impacts largely depends on baseline data and reports developed by PLP between 2004 and 2008. This outdated information is insufficient to form the basis of NEPA review and a 404 permit application. First, record documents from the Army Corps themselves from this time period suggest that this information was too incomplete, methodologies were outdated or insufficient, and the data stale to make a 404 permit decision. Second, as described in reports from O’Neal, Woody, Yocom, and other experts included in Appendix E to this comment letter, this baseline data was collected without using the best scientific methodologies. And third, the Corps has failed to remedy its own earlier concerns and concerns raised by cooperating agencies and other experts in the scoping comment period before release of the Draft EIS, instead leaving collection of required baseline information, key information, advanced project designs, and essential information missing until after the close of the Draft EIS comment period.

1. The Corps Admits to Faulty Data Collection Methods; The Corps and Cooperating Agencies Express Concerns with Methods, Completeness, and Staleness

Reliance on stale data and faulty data collection methods can render an agency’s analysis insufficient and an agency’s reliance on such stale and faulty data can be arbitrary and capricious. The Pebble Draft EIS relies for the most part on data collected by PLP between 2004 and 2008 and described in its Environmental Baseline Documents. There is a long history of agency concerns with the adequacy of PLP’s data collection methods, expressed by the Corps, EPA, and ADF&G, among other agencies.

By way of one specific example, as explained in Sections IV.H.2 and 4 of this comment letter, the Corps expressed numerous concerns in preapplication meetings regarding PLP’s proposed data collection and methodologies for wetlands delineation and functional assessment of stream and wetlands. Data collection issues related to wetlands delineation and functional assessment remain in this Draft EIS. The Corps notes that the Draft EIS fails to include adequate description of wetlands for all project components, noting it as one of the most important data gaps acknowledged in the Draft EIS and indicating that “[a]dditional field review of this area would occur in field season 2019 and updated data would be included in the FEIS.” Moreover, because of its issues with developing an appropriate methodology to assess stream and wetlands functions, PLP has decided not to conduct a

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881 PD at page 2-4.
882 See discussion infra Section IV.H.2 (“404 Permit Application Wetlands Delineation Insufficient”).
883 Northern Plains Resource Council Inc. v. Surface Transportation Board, 668 F.3d 1067, 1085-87 (9th Cir. 2011) (the Ninth Circuit held that the Board violated NEPA because it relied on stale data and “failed to properly update the data with additional studies and surveys.”).
884 See, e.g., attached Appendix F (Pebble Project Technical Working Group Meeting Minutes 2007-2010).
885 See, infra discussion at Sections IV.H.2 and 4.
886 Draft EIS, at pages 3.1-10 and 4.22-22.
functional assessment at all for this project. The Corps has so far allowed PLP not to conduct a functional assessment, but, as described in Section IV.H.4 above, both the Corps and EPA question how PLP can comply with the CWA without one.

These are just a few of the more obvious data collection, stale data, and methodology concerns for this project. As described in Appendix D to this comment letter, cooperating agencies noted 45 separate issues with PLP’s data collection sufficiency, staleness, and methodologies. And as described in Appendix E of this comment letter, expert review of PLP’s Environmental Baseline Documents over the years has yielded many concerns with PLP’s data collection efforts. These expert concerns remain today, as the Environmental Baseline Documents have changed very little since they were first made public in 2012. The Corps’ failure to require PLP to supplement its data collections prior to issuance of the Draft EIS renders the document inadequate. And in light of expert and cooperating agency concerns with the adequacy of this baseline data, the Corps decision not to require PLP to supplement and its reliance on this outdated and insufficient data is thus arbitrary and capricious. The Corps should require PLP to collect the missing data noted in Appendix D to this comment letter and revise the Draft EIS and re-issue it for public review and comment accordingly.

2. Experts Express Concerns with Baseline Data Sufficiency; The Corps Fails to Remedy Problems

In evaluating reasonably foreseeable significant adverse effects, agencies must address incomplete or insufficient information. An agency’s review of existing information on possible environmental effects of a proposed action may not be sufficient under NEPA where additional information is necessary to make a reasoned choice among alternatives. An agency also violates NEPA when it fails to provide a reasoned explanation to support its decision regard the adequacy of its data.

Prior to issuance of the Draft EIS, a number of cooperating agencies, public commenters, and the Corps’ third party EIS contractor noted the lack of adequate baseline data to support analysis in the Draft EIS. Missing information, noted by cooperating agencies and AECOM, includes information essential to analysis and discussion of

- Mine Plan and Design
- Mine Reclamation and Closure

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887 40 C.F.R. § 1502.22.
888 See, e.g., Pub. Emps. for Envtl. Responsibility v. Hopper, 827 F.3d 1077, 1083 (D.C. Cir. 2016) (remanding EIS to the agency for preparation of geological surveys because it may be appropriate for the agency to conduct additional monitoring to gather more data going forward, but it “does not excuse the [agency] from its NEPA obligation to gather data about the [environmental consequences of its action]”)
• Transportation Corridor and Natural Gas Pipeline
• Port Site Design and Baseline Data
• Water Treatment and Management Plans and Designs
• Baseline Water Flow Surveys and Water Modeling
• Wetlands Data, Mitigation Plan, and Clean Water Act Compliance
• Subsistence, Cultural Resources, Historic Properties, and Human Health
• Fish and Wildlife Baseline Data and Plans
• Transportation Corridor Design, Baseline Data, Mitigation, and Reclamation

The specific concerns from cooperating agencies and AECOM is detailed in Appendix D to this comment letter. Despite this lacking baseline data and data sufficiency concerns noted by cooperating agencies, the Corps released the Draft EIS. In doing so, the Corps violated its duties under NEPA to adequately describe the affected environment and evaluate reasonably foreseeable significant adverse effects.

3. The Corps Improperly Excludes Key Information, New Baseline Surveys, Advanced Project Designs, and Analysis Essential for Public Review

If there is incomplete or missing information relevant to reasonably foreseeable significant adverse impacts and the information is “essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant,” the information must be gathered and included in the EIS. This requirement helps “insure the professional integrity, including scientific integrity, of the discussions and analyses” in a NEPA document. Indeed, “the very purpose of NEPA’s requirement that an EIS be prepared for all actions that may significantly affect the environment is to obviate the need for speculation by insuring that available data is gathered and analyzed prior to the implementation of the proposed action.”

“Under NEPA, “[t]he hallmarks of a ‘hard look’ are thorough investigation into environmental impacts and forthright acknowledgment of potential environmental harms.” This includes both an assessment of the current baseline conditions and analysis of the proposed project’s impacts. Moreover, an agency cannot provide and analyze site-specific data (such as that missing for Pebble in the case of wetlands, water hydrology, cultural resources, and geotechnical information) after completing the NEPA public process. NEPA mandates that the missing information described here must be available for public review and

890 40 C.F.R. § 1502.22(a); see also 43 C.F.R. § 46.125.
891 40 C.F.R. § 1502.24.
892 Found. for N. Am. Wild Sheep v. U.S. Dep’t of Agric., 681 F.2d 1172, 1179 (9th Cir. 1982).
893 National Audubon Society v. Dep’t of Navy, 422 F.3d 174, 185 (4th Cir. 2005); see also Sierra Club v. United States Army Corps of Eng’rs, 701 F.2d 1011, 1030 (2d Cir. 1983) (If an EA does not reasonably compile adequate information and sets forth statements that are materially false or inaccurate the Court may find that the document does not satisfy the requirements of NEPA, in that it cannot provide the basis for an informed evaluation or a reasoned decision.).
894 Friends of Back Bay v. U.S. Army Corps of Eng'rs, 681 F.3d 581, 588 (4th Cir. 2012) (“A material misapprehension of the baseline conditions existing in advance of an agency action can lay the groundwork for an arbitrary and capricious decision.”).
comment\textsuperscript{895} and here the Corps and the third party EIS consultant have identified myriad of these information gaps required for analysis under NEPA. Thus, the Corps must collect the missing information, use it to inform its analysis of the project impacts, disclose the impacts as to each alternative, revise the Draft EIS, and re-issue it for public review and comment.

As an initial matter, the Draft EIS is scientifically deficient as it fails to fully include the largest body of scientific work directly relevant to mining the Pebble Deposit – the EPA BBWA. While the DEIS sporadically and infrequently references the BBWA, the Draft EIS does not discuss its assessment in whole or make a clear statement regarding the findings in the assessment and whether the Draft EIS incorporates or takes issue with any of the BBWA findings. The final BBWA listed approximately 747 reference documents. Comparing it to the Draft EIS, BBNC found 42 references in common.\textsuperscript{896} This means that under 6% of the referenced items in the Bristol Bay Watershed Assessment ended up in the Draft EIS. This is woefully inadequate treatment of key information and the requirement that the Corps take a hard look at project impacts.

Related to the Corps’ failure to include key information, baseline surveys, advanced project designs, and analysis essential for public review, from the outset, the Corps has utilized a rushed and inadequate NEPA process that has undermined public input and trust. For example, BBNC and others have consistently expressed the following concerns with this ongoing NEPA process:

- Inadequate permit application and supporting baseline information and studies
- Inadequate scoping timeline, inadequate Draft EIS comment period, inadequate number of public hearings spaced quickly together, and without translation services
- Outdated baseline studies lacking for many new project components
- Significant changes to preferred project design mid-scoping process and the failure of the Corps to require an amended 404 permit application until less than one month prior to release of the Draft EIS, and then with little to no public outreach on the 404 permit application itself and a 404 public notice lacking required details
- The Corps’ failure to conduct Alaska Native Corporation consultation
- Failure of PLP to submit State permit applications containing the supporting details necessary to inform public review of the proposed project during the scoping period
- Pushing forward with publication of a Draft EIS in February 2019 before the essential baseline data and studies and State permit applications have been submitted and available to the public

\textsuperscript{895} Great Basin Resource Watch v. BLM, 844 F.3d 1095 (2016) (“The BLM argues that it corrected any error in its baseline estimates by conducting a ‘double check’ analysis following the issuance of the FEIS. BLM claims that those measurements confirm that the pollution from the Project would not violate air quality standards. Although that statement may end up being true, a post-EIS analysis—conducted without any input from the public—cannot cure deficiencies in an EIS. Ctr. for Biological Diversity v. U.S. Forest Serv., 349 F.3d 1157, 1169 (9th Cir. 2003). The public never had an opportunity to comment on the ‘double check’ analysis, frustrating NEPA’s goal of allowing the public the opportunity to ‘play a role in ... the decisionmaking process.’ Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349, 109 S.Ct. 1835, 104 L.Ed.2d 351 (1989).”).

\textsuperscript{896} https://pebblewatch.com/source-documents/
The Corps is following an expedited schedule for the preparation of draft and final versions of the EIS, releasing a Draft EIS in February 2019, only eight months after scoping was completed.\footnote{https://pebbleprojecteis.com/schedule} The Corps has provided an equally short period to take comments on the Draft EIS, review the comments, incorporate changes, respond to comments and complete a final EIS — all proposed to be completed in less than a year.\footnote{Id.} This expedited NEPA review is counter to the purpose of NEPA. This is occurring while the Corps has posted more than 400,000 pages of scientific and technical information relied upon by the Draft EIS for the public to sort through and review in order to fully understand the project proposal and impacts. To add to the complexity, nowhere does the Corps cite to the substantial work done on Pebble by the EPA, with which BBNC, and indeed the public, gained familiarity through EPA’s far-more-robust process. The Corps’ approach and schedule will not result in an informed decision and will not allow for meaningful public participation. In addition, as BBNC stated in our scoping comments to the Corps:

sticking to this timeline will preclude PLP from gathering the requisite data and information needed for its various permit application and needed to inform the NEPA analysis. PLP is currently proposing to conduct many multi-year surveys and studies to assess, among other things, impacts to fish and wildlife populations and habitat, water quality, geotechnical design parameters, cultural resources, and project economics. The Corps EIS timeline guarantees that the final EIS will be issued before many of these essential studies are completed.\footnote{See attached Appx. F, BBNC Scoping Letter (June 29, 2018).}

BBNC’s concern has now become a reality, with the release of a Draft EIS that admits gaps in more than 45 topic areas such as:

- **Mine Plan and Design** – missing information includes a mine operations plan with advanced engineering; bulk tailings facility advanced design; embankments advanced design; information on materials used to construct embankments; geotechnical data and drain engineering for the tailings dam; a fugitive dust control plan; geotechnical boring data; mitigation measures; and economic feasibility
- **Mine Reclamation and Closure** – missing information includes a reclamation and closure plan and a description of financial assurances or bonding
- **Transportation Corridor and Natural Gas Pipeline** – missing information includes pipeline surveys for all alternatives on land and in the Cook Inlet and Iliamna Lake; plans for horizontal directional drilling and trenching; and landowner agreements necessary to cross and use private surface and subsurface
- **Port Site Design and Baseline Data** – missing information includes port site final engineering and design; metocean baseline data for all port alternatives; and water flow baseline data at the port alternative
- **Water Treatment and Management Plans and Designs** – missing information includes
a detailed water treatment plan; a detailed water management plan; design and placement of water management pond embankment and pump wells; and bench or pilot testing of the water treatment system

- **Baseline Water Flow Surveys and Water Modeling** – missing information includes surface water hydrology baseline information; a completed groundwater model; and groundwater model validation and sensitivity analysis
- **Wetlands Data, Mitigation Plan, and Clean Water Act Compliance** – missing information includes a final compensatory mitigation plan; wetlands and vegetation mapping; field verification of wetlands mapping; a CWA 404(b)(1) guidelines analysis; a public interest review under the Corps’ CWA regulations; and a wetlands functional assessment
- **Subsistence, Cultural Resources, Historic Properties, and Human Health** – missing information such as subsistence baseline data; cultural resources and historic properties baseline information; cultural resources and historic properties field verification data; historic properties evaluation; offshore cultural resources information for the port sites; and a health impact assessment
- **Fish and Wildlife Baseline Data and Plans** – missing information includes fish and wildlife baseline data especially along proposed transportation corridors; a wildlife management plan; and an aquatic resource monitoring plan
- **Transportation Corridor Design, Baseline Data, Mitigation, and Reclamation** – missing information includes final road design; designs and numbers of culverts and waterbody crossings; culvert and bridge designs for fish passage; a transportation corridor reclamation plan; water flow baseline data at the transportation corridor; mitigation measures and engineering of road design; and best management practices for road construction

Again, these are permit application and Draft EIS deficiencies that *the Corps itself has admitted*. And, as also outlined in detail in **Appendix D**, cooperating agencies, the EIS third party contractor, and Corps itself express concerns with this missing information.

In addition, subsequent to release of the Draft EIS, the Pebble EIS contractor AECOM wrote a memo to the Army Corps identifying additional information gaps and missing baseline data required for analysis under NEPA. None of this data was factored into the Draft EIS and, as noted in this memo (dated March 1, 2019), nearly all of these data gaps are not scheduled to be filled until after the close of the comment period on the Draft EIS. Without a revised and re-published Draft EIS, the public will *never* have the opportunity to comment on this new information. Especially notable are the completely missing project components such as the detailed reclamation plan, detailed proposed mitigation measures, a detailed compensatory mitigation plan, completed wetlands survey work, and completed cultural resources survey work. This missing information relies heavily on field work that Pebble must complete in summer 2019 and reports and plans that Pebble has yet to make public. The data gaps identified by the EIS contractor will be filled after the close of the comment period on the Draft EIS via the following “Requests for Information,” or RFIs:
<table>
<thead>
<tr>
<th>RFI Topic and Number</th>
<th>Rationale for Request – Required for NEPA Review</th>
<th>Date Response Requested by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geotechnical Boring Program Report</td>
<td>“The report, along with the data, would help inform the impact analysis for the Preliminary Final EIS.”</td>
<td>March 15, 2019</td>
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<tr>
<td>(RFI 14a)</td>
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<tr>
<td>2019 Offshore Cultural Resources Survey</td>
<td>“required engineering and archaeology reports to BSEE for the proposed pipeline ROW”</td>
<td>July 15, 2019</td>
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<tr>
<td>Data (RFI 25a)</td>
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<tr>
<td>Metocean Buoy Measurement Program Data</td>
<td>“site-specific metocean data for the detailed design phase of the port. Results of this program are needed to update the affected environment description in Section 3.16 (Surface Water Hydrology) of the Final EIS.”</td>
<td>July 1, 2019</td>
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<tr>
<td>(RFI 39a)</td>
<td></td>
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<tr>
<td>Final Compensatory Mitigation Plan</td>
<td>“A compensatory mitigation plan (CMP) will be used in our determination whether the proposal is in compliance with the 404(b)(1) guidelines and the public interest review, and to inform the NEPA analysis.”</td>
<td>August 1, 2019</td>
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<tr>
<td>Plan (RFI 56a)</td>
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<tr>
<td>Update of Applicant’s Proposed Mitigation</td>
<td>“Mitigation measures included in the project design are integral components of the proposed action, are implemented with the proposed action, and therefore should be clearly described as part of the proposed action.”</td>
<td>August 1, 2019</td>
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<td>for Analysis in the EIS (RFI 71b)</td>
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<tr>
<td>Groundwater model validation and sensitivity</td>
<td>“The requested information is necessary to help inform the impact analysis for the Preliminary Final EIS.”</td>
<td>March 15, 2019</td>
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<tr>
<td>analysis (RFI 109d)</td>
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<tr>
<td>Cultural Data Refinement</td>
<td>“In order to make plans for the upcoming 2019 field season, as well as move forward with potential National Register of Historic Places eligibility determinations, these data must be reviewed and refined to consolidate potential duplicate sites.”</td>
<td>March 15, 2019</td>
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<tr>
<td>(RFI 113)</td>
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<tr>
<td>Detailed Reclamation Plan</td>
<td>“help inform the impact analysis for the Preliminary Final EIS.”</td>
<td>June 1, 2019</td>
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<tr>
<td>Plan (RFI 115)</td>
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<tr>
<td>Wetlands 2019 Field Verified Data</td>
<td>“The final EIS will need to precisely disclose the amount and type of wetlands and other waters and vegetation that would be impacted by the project and how those impacts vary among the alternatives and variants. Field-verified wetlands and other waters data is requested for locations where data were not available for inclusion in the Draft EIS.”</td>
<td>Field data in GIS form July 15, 2019; full report by August 15, 2019</td>
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<tr>
<td>(RFI 116)</td>
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<tr>
<td>Cultural Resources Field Data</td>
<td>“Portions of the direct permit area (project footprint) have had no archeological surveys conducted, and there has been no field verification for the interview-identified cultural resources collected by Stephen R. Braund and Associates. Per input provided by the State Historic Preservation Office and other consulting parties, and in accordance with both NEPA and NHPA, expanding the identification and evaluation of cultural resources in the project footprint is required to better compare alternatives and discuss impacts on cultural resources associated with each.”</td>
<td>March 31, 2019</td>
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<tr>
<td>(RFI 117)</td>
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<tr>
<td>Surface Water Hydrology</td>
<td>“There is limited information on surface water hydrology in project component areas outside the mine site.”</td>
<td>August 1, 2019</td>
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<td>(RFI 118)</td>
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<tr>
<td>Eligibility Determinations Effort</td>
<td>“Evaluations are needed to complete the assessment of impacts on historic properties under NEPA for the EIS…”</td>
<td>May 1, 2019</td>
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<td>(RFI 119)</td>
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Of these 12 outstanding RFIs, Pebble has responded to five of them and the Corps has posted responses on their website – RFI numbers 109d, 113, 117, 119, and 14a. For RFI 14a, PLP blatantly states that it will not be fulfilling the request before the Final EIS is issued: “PLP is not proposing to complete the final field report for the geotechnical boring program this year. The report will be updated following collection of additional data from the instrumentation installed in the borings and is not anticipated to be available prior to completion of the FEIS.” For responses in RFIs 113, 117, and 119, all related to identifying cultural resources and historic properties through survey work, the RFI responses simply note that survey work will happen in summer 2019, that PLP will incorporate recommendations on where to survey “into PLP’s 2019 field program if possible,” and “PLP notes that field survey completion may be affected by consultant availability, weather conditions, and land access agreements.” These responses are not substantive and fail to contain any quantifiable data and analysis for the public to review on the issue of cultural resources and historic properties. Complete and substantive responses to these requests will not be available and disclosed until after the close of the Draft EIS comment period.

On May 13, 2019 PLP informed the Corps of its 2019 field work plans and schedule to begin remedying some these data gaps. The 2019 field schedule ignores the full range of fish, hydrology, wetlands, and geotechnical data requested by the Corps and AECOM. The 2019 field schedule also notes that surveys are ongoing and will not be completed until after the close of the Draft EIS comment period.

<table>
<thead>
<tr>
<th>Missing Survey/Data</th>
<th>PLP 2019 Field Work Plans</th>
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</thead>
<tbody>
<tr>
<td>Geophysical surveys-Cook Inlet pipeline route</td>
<td>“final fieldwork early June”</td>
</tr>
<tr>
<td>Geophysical surveys-Iliamna Lake pipeline route</td>
<td>“Not started, anticipated to be conducted in July/August”</td>
</tr>
<tr>
<td>Geotechnical investigation-Cook Inlet pipeline</td>
<td>“Planned for early June”</td>
</tr>
<tr>
<td>Marine mammal surveys Cook Inlet</td>
<td>“March (complete)/May/late fall surveys”</td>
</tr>
<tr>
<td>Wetlands field verification work</td>
<td>“Planned for July. Field work is limited to those areas where PLP can obtain access permission”</td>
</tr>
<tr>
<td>Cultural surveys</td>
<td>“site (June), ferry terminals (July)”</td>
</tr>
<tr>
<td>Hydrology drilling and pump tests</td>
<td>“Tentatively planned for September/October”</td>
</tr>
</tbody>
</table>

There is a substantial amount of baseline data and project details and plans missing from

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900 RFI 119.
901 RFI 117.
902 See attached Appx. F, email from James Fueg, PLP, to Shane McCoy, Project Mgr., U.S. Army Corps of Eng’rs, Subject: 2019 Field Work Plans (May 13, 2019, 3:00PM).
PLP’s application that must be gathered before the Corps can meaningfully evaluate, and the public can fully understand or provide feedback on, the potential impacts from the project. The baseline data submitted by PLP is out of date, having been gathered between 2004 and 2008 for the most part, and is based on an old and revised project area. The south transportation corridor, Iliamna Lake, and Amakdedori port areas have not been thoroughly studied by PLP and many gaps in these areas remain, as noted by cooperating agencies. 903 Finally, the permit application itself lacks sufficient details on many project components and design, proposed mitigation measures, and water management plan, among other things as described in Section V(H) below.

**G. UNLAWFUL TIERING TO FUTURE AND NON-NEPA ANALYSES**

1. **Legal Framework**

As discussed above, the fundamental purpose of NEPA is to inform both agency decisionmakers and the public about environmental concerns before decisions are made. An EIS may incorporate by reference—or “tier” to—another NEPA document in order to “eliminate repetitive discussions of the same issues.” 904 Tiering, however, is subject to strict limitations. Tiering can only be conducted in a retrospective manner, with a “subsequent” analysis incorporating and relying on one or more previous analyses. 905 In other words, tiering is authorized when the sequence of analysis is either (1) from an EIS for a broad agency “program, plan, or policy” to one of “lesser scope or to a site-specific [NEPA] statement or analysis,” or (2) from an EIS concerning a specific project at an “early stage” to a “[NEPA] statement or analysis at a later stage (such as environmental mitigation).” 906

When an agency preparing a site-specific NEPA review has tiered back to a broader programmatic NEPA review, reviewing courts are mindful that agencies sometimes “play a ‘shell game’ of when and where deferred issues will be addressed, undermining agency credibility and trust,” and they exercise judicial review to ensure that an agency does not “improperly evade its responsibility to perform an environmental analysis when such an analysis is ‘reasonable possible.’” 907

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903 See Appendix D.
904 40 C.F.R. § 1502.20.
905 See 40 C.F.R. § 1502.20 (“Whenever a broad environmental impact statement has been prepared ... and a subsequent statement or environmental assessment is then prepared on an action included within the entire program or policy ... the subsequent statement or environmental assessment need only summarize the issues discussed in the broader statement ... and shall concentrate on the issues specific to the subsequent action. The subsequent document shall state where the earlier document is available.”) (emphasis added); 40 C.F.R. § 1508.28 (defining “tiering” as the coverage of general matters in broader EISs “with subsequent narrower statements or environmental analyses ... incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared”) (emphasis added). See also Western Watersheds Project v. Abbey, 719 F.3d 1035, 1049 (9th Cir. 2013) (indicating that an EIS cannot “effectively tier to an environmental analysis not yet performed”).
906 40 C.F.R. § 1508.28.
907 Pac. Rivers Council v. U.S. Forest Serv., 689 F.3d 1012, 1029-30 (9th Cir. 2012). See Ilioulaokalani Coal’n v. Rumsfeld, 464 F.3d 1083, 1095-97, 1101-02 (9th Cir. 2006).
Furthermore, an EIS may only tier to prior documents that have been subject to NEPA review. The Ninth Circuit explained in *Kern v. BLM* that “tiering to a document that has not itself been subject to NEPA review is not permitted, for it circumvents the purpose of NEPA.” 908 Since BLM’s attempt to tier to non-NEPA guidelines was impermissible, the adequacy of the EIS “depend[ed] on the analysis contained in the EIS itself.” 909 In another case involving a proposal for a major gold mining project in Nevada, the Ninth Circuit rejected BLM’s argument that off-site air quality impacts arising from a separate processing facility need not be evaluated because the facility operated pursuant to a state-issued Clean Air Act permit, explaining that “[a] non-NEPA document—let alone one prepared and adopted by a state government—cannot satisfy a federal agency’s obligations under NEPA.” 910 Similarly, governmental attempts to tier to non-NEPA watershed analyses in connection with proposed timber sales have been deemed unlawful. 911

Tiering is also prohibited if the prior NEPA documents are inadequate or outdated. The Ninth Circuit has emphasized that tiering is only permissible where the prior NEPA document actually discusses the “specific environmental impacts at issue.” 912 In *Muckleshoot Indian Tribe v. U.S. Forest Service*, for instance, the Ninth Circuit rejected the government’s attempt to tier to a prior EIS relating to a Forest Plan because that EIS failed to “account for the specific impacts” of the land exchange at issue and thus did not “remedy the Forest Service’s failure to account for the impacts” of the land exchange in the present EIS. 913 An agency also “errs when it relies on old data without showing that the data remain accurate,” 914 and that includes reliance on excessively old NEPA analyses. 915

2. **The Draft EIS Unlawfully Tiers to Future Analyses and Non-NEPA Analyses**

In numerous instances throughout the Draft EIS, the Corps acknowledges that it does not have sufficient information to analyze key issues and instead points the reader to future

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908 Kern v. BLM, 284 F.3d 1062, 1073 (9th Cir. 2002). See Northcoast Envt’l Center v. Glickman, 136 F.3d 660, 670 (9th Cir. 1998) (explaining that, “[a]lthough CEQ procedures allow agencies to incorporate by reference certain materials to cut down on the bulk of an EIS, they cannot ‘tier’ their site-specific EISs to the broader POC program where the program itself has not been subject to NEPA procedures”).

909 Kern, 284 F.3d at 1073-74.

910 South Fork Band Council Western Shoshone v. U.S. Dept. Interior, 588 F.3d 718, 726 (9th Cir. 2009) (citing Klamath-Siskiyou Wildlands Center v. BLM, 387 F.3d 989, 998 (9th Cir.2004)).

911 See Klamath-Siskiyou, 287 F.3d at 998; League Wilderness Defs. v. U.S. Forest Serv., 549 F.3d 1211, 1219 (2008); Oregon Nat. Res. Council v. BLM, 470 F.3d 818, 823 (9th Cir. 2006).

912 South Fork, 588 F.3d at 726.

913 Muckleshoot Indian Tribe v. U.S. Forest Serv., 177 F.3d 800, 811 (9th Cir. 1999). See Klamath-Siskiyou, 287 F.3d at 997 (similarly rejecting the government’s attempt to tier to a prior planning-level EIS because it was lacking “any specific information” about cumulative effects and failed to evaluate the “incremental impact that can be expected ... as a result of each of these four successive timber sales”) (emphasis in original).

914 Western Watersheds, 719 F.3d at 1052 (citing N. Plains Res. Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1086-87 (9th Cir. 2011)).

915 See id.
studies and permitting processes that will not be subject to NEPA review. This approach constitutes improper tiering in violation of NEPA. The Corps cannot tier to, or otherwise rely on, deferred future non-NEPA analyses as a substitute for fulfilling its NEPA obligations. On the contrary, before any decision is finalized, the Corps’ environmental review under NEPA and associated permitting process must be conducted with the benefit of relevant studies and data in hand, and the public must have an opportunity to comment on the adequacy of these materials as well as the merits of the project in light of the environmental impacts that they illuminate. The following are some examples of the Corps’ pervasive and improper reliance on deferred future and non-NEPA environmental analyses throughout the Draft EIS.

**Spill Risk Assessment - Mine Tailings Storage Facilities & Dams.** The Corps has acknowledged that even the most basic information regarding the design, construction, and operation of the mine tailings storage facilities and associated dams is not available for purposes of NEPA review. Instead, the Corps indicates that this information will be developed in the future as part of the “state permitting phase.” For instance, the Draft EIS describes the current dam design as being “at a very early phase, considered a conceptual phase,” with “[s]ite investigation and engineering plans ... still ongoing,” and it relies on future investigations, engineering designs, plans, and risk assessment that will be developed through DNR’s dam safety permitting process to fully analyze the risk of a mine tailings spill. The Corps has duty under NEPA, however, to take a “hard look” at spill risks and to make its analysis available for public comment in a Draft EIS. The future DNR risk assessments and certificates of approval for the dams will not be subject to NEPA review, and they are not prior analyses that can be tiered to in the Draft EIS. The Corps’ reliance on them thus constitutes unlawful tiering.

**Geotechnical Boring Program Report.** The Corps’ consultant, AECOM, has asked PLP to provide a Geotechnical Boring Program Report, indicating that it is needed for the NEPA analysis of environmental impacts associated with the mine. In response, PLP has not disputed the report’s relevance, but states that “additional data” must be collected and thus the report “is not anticipated to be available prior to completion” of the Final EIS. To the extent the Corps relies on this deferred geotechnical report in an attempt to satisfy its NEPA obligations after-the-fact, this would be improper tiering. The report will not be subject to NEPA review, and it is not a prior analysis that can be tiered to in the Draft EIS. The belated availability of the report would deprive both the agency and the public of information essential for informed decisionmaking.

916 Draft EIS, at page 5-5.
917 Draft EIS, at page 4.27-71. Id. at 2-22. 5-5. 4.13-1, 4.15-14, 4.15-19, 4.17-18, 4.18-8. 3.1-8 to 3.1-14 Appendix E, pages 15-20.
918 See AECOM RFI 14a (Mar. 1, 2019).
919 See PLP Response to RFI 14a (May 14, 2019).
**Detailed Reclamation Plan.** The Corps, through AECOM, has also asked PLP to provide a Detailed Reclamation Plan to facilitate its NEPA analysis of long-term environmental impacts.920 PLP has already missed its June 1 deadline for doing so. Instead of compelling disclosure of this information and then conducting the necessary NEPA review, however, the Corps has included language in the Draft EIS pointing the reader to future DNR permitting, reclamation plan, closure, and bonding requirements.921 The Corps cannot rely on future non-NEPA analyses like these to fulfill its duty to take a “hard look” at PLP’s closure and reclamation plans and their efficacy in addressing long-term environmental impacts, or its duty to make such information available for public comment in a Draft EIS. The Corps’ reliance on future DNR closure and reclamation permitting processes thus constitutes unlawful tiering.

**Fish & Fish Habitat Impacts.** Both the USFWS and ADFG have pointed out the need for fundamental baseline data regarding fish and fish habitat.922 However, instead of going through the appropriate sequence—gathering data, analyzing it in a Draft EIS, and making the analysis available for public comment—the Corps has already issued the Draft EIS and intends to gather this information after-the-fact through “2019 field work for inclusion in the Final EIS,” which will not be subject to public comment.923 In addition, the 2019 field surveys requested by USFWS and ADFG are not occurring. PLP will not be conducting fish and wildlife surveys along the southern transportation corridor in 2019.924 In the absence of key baseline data, the Draft EIS relies heavily on future ADFG permitting as a substitute for fully analyzing fish and fish habitat impacts arising from numerous aspects of the proposed Pebble mine project and related infrastructure.925 Similarly, the Draft EIS relies on unspecified future ADFG permit stipulations to mitigate adverse fish and fish habitat impacts,926 rather than actually evaluating the effectiveness of potential mitigation measures.

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920 RFI 115 – Detailed Reclamation Plan (date requested by: June 1, 2019). See Draft EIS, pages 3.1-8 to 3.1-14 for description of the data gaps.

921 See Draft EIS, Appendix E, at 15-20. Draft EIS, at 2-18, 2-41 (“Prior to commencing construction, the project Reclamation and Closure Plan approval and associated financial assurance mechanisms would need to be in place.”)

922 Letter from Mary Colligan, USFWS, to Shane McCoy, Army Corps, at 2 (Dec. 21, 2018), ADFG, Pebble Project EIS Consolidated Comments Table, at 14, 16, 17.


924 See, e.g., NDM, Management’s Discussion and Analysis Three months ended March 31, 2019, available at https://www.sec.gov/Archives/edgar/data/1164771/000149315219008038/ex99-2.htm (describing 2019 field season plans and omitting fish surveys of any kind). See also, email from James Fueg, PLP, to Shane McCoy, Project Mgr., U.S. Army Corps of Eng’rs, Subject: 2019 Field Work Plans (May 13, 2019, 3:00PM) (showing plans for the 2019 field season included geophysical surveys for the Cook Inlet pipeline route finalized in early June; geophysical surveys for the Iliamna Lake pipeline route anticipated to be conducted in July/August; geotechnical investigation for the Cook Inlet pipeline route planned for early June; marine mammal surveys for the Cook Inlet planned for March, May, and late fall; wetlands field verification work planned for July and limited to the areas where PLP can obtain access; cultural surveys at the mine site in June and at ferry terminals in July; and hydrology drilling and pump tests tentatively planned for September/October).


as required under NEPA. Furthermore, the Corps has admitted that the Aquatic Resource Monitoring Plan is not yet available and “would be developed for the project … as part of the plans of operation during state permitting.” The Corps’ reliance on future field studies and future ADFG analysis and permit stipulations constitutes unlawful tiering in violation of NEPA.

**Transportation Corridor (Roads, Bridges & Culverts).** Much like the subject areas discussed above, instead of setting forth adequate NEPA analyses concerning the environmental impacts associated with the proposed transportation corridor, the Draft EIS relies on future ADFG fish habitat permitting, ADOTPF right-of-way leasing, DEC stormwater permitting, and other State of Alaska permitting processes. For instance, the Draft EIS states vaguely that the “exact number and design of waterbody crossings would be determined during final design and permitting” by ADFG and that “[i]nlet/outlet protection may be installed at some streams, as necessary, to protect the soil surface.” Similarly, instead of analyzing reclamation plans relating to the transportation corridor, the Draft EIS merely anticipates that a “detailed reclamation plan would be prepared in compliance with State requirements” as part of ADFG and ADOTPF “permitting and right-of-way (ROW) lease processes prior to construction.”

Moreover, the Draft EIS admits that the “magnitude and extent of stream sedimentation” that could result from transportation-related disturbances is unknown and “would depend on the effectiveness” of the best management practices (BMPs) required by ADEC through its stormwater permitting program. The Corps’ reliance on future non-NEPA analyses to be conducted by ADFG, ADOTPF, ADEC, and other Alaska agencies as part of their permitting and authorization processes constitutes unlawful tiering in violation of NEPA.

**Wetlands & Compensatory Mitigation.** Wetlands and compensatory mitigation lie at the heart of the Corps’ 404 permitting decision, and yet the Corps is engaging in unlawful tiering in this context as well. The Corps published the Draft EIS and the public comment period proceeded without the benefit of key wetlands baseline data, a final Compensatory Mitigation Plan (CMP), a 404(b)(1) Guidelines analysis, or a Public Interest Review.

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927 Draft EIS, at 5-9.
928 *See generally* Draft EIS, at 4.24-20, 22 and 4.16-26, 27, 29, 30
929 Draft EIS, at 4.16-25. *see id. at 2-42.
930 Draft EIS, Executive Summary, at 10.
931 Draft EIS, at 4.24-20
932 Draft EIS, at 3.22-5 (“portions of the EIS analysis areas [are] lacking field-verified mapping”); Draft EIS, at 3.22-5 (“Remaining wetland data gaps would be addressed during the 2019 field season for reporting in the Final EIS (FEIS));”
933 Draft EIS, at 3.1-9 (“A draft conceptual Compensatory Mitigation Plan (CMP) has been prepared by PLP … Detailed information about each compensatory mitigation opportunity proposed would be included in an attachment to a future version of a CMP.”).
934 Draft EIS, at 2-8 (“USACE’s 404(b)(1) evaluation … will be completed after the Final EIS (FEIS).”). See 40 C.F.R. Part 230.
AECOM recently asked PLP to provide its final Compensatory Mitigation Plan and Wetlands 2019 Field Verified Data. In doing so, AECOM indicated that the final CMP is needed to determine “compliance with the 404(b)(1) guidelines,” to conduct the “public interest review,” and to “inform the NEPA analysis.” AECOM also explained that the NEPA review must “precisely disclose the amount and type of wetlands and other waters and vegetation that would be impacted by the project and how those impacts vary among the alternatives and variants,” but that this information was “not available for inclusion in the Draft EIS.” Despite the critical importance of this information for any meaningful public participation, the deadlines associated with AECOM’s information requests call for delivery of such information well after the close of the public comment period on the Draft EIS. To the extent the Army Corps’ relies on these future materials without subjecting them to full NEPA review and public comment, its approach constitutes unlawful tiering in violation of NEPA.

The same pattern of the Corps addressing major gaps in the Draft EIS through heavy reliance on data, plans, reports, analyses, permits, and mitigation measures to be developed in the future and thus not subject to proper NEPA review with meaningful public participation, can be seen in numerous other subject areas, including but not limited to: water management and water quality, cultural resources and historic properties, marine mammals and other

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935 Draft EIS at 2-8 (“USACE’s ... Public Interest Review will be completed after the Final EIS (FEIS).”) See 33 C.F.R. § 320.4(a)
936 See RFI 56a and RFI 116.
937 RFI 56a.
938 RFI 116. In light of these major missing elements, the Draft EIS admits the obvious—that the information contained therein “may not be precise enough” to make a 404 permit decision. Draft EIS, at page 3.1-10. See also Draft EIS, at page 4.17-10 (discussing uncertainty re wetlands).
939 See RFI 56a (calling for final Compensatory Mitigation Plan to be provided by August 1, 2019); RFI 116 (calling for Wetlands 2019 Field Verified Data report to be provided by August 15, 2019).
940 See Draft EIS, at 4.24-25 (APDES permit); RFI 109d (Groundwater model); RFI 118 (Surface Water Hydrology); Draft EIS, Appendix E, at 15-20 (APDES Permitting); Draft EIS, at 3.1-8 to 3.1-14 (water treatment system); Draft EIS, at 4.27-71, 5-5, 4.13-1, 4.15-14, 4.15-19, 4.17-18, 4.18-8, 2-22 (acknowledging lack of info); Draft EIS, at 4.18-8 (water management); Draft EIS, at 2-37 (water treatment); Draft EIS, at 2-31 (water management).
941 RFI 25a (2019 Offshore Cultural Resources Survey Data); RFI 113 (Cultural Data Refinement); RFI 117 (Cultural Resources Field Data, archeological surveys, field verification); RFI 119 (Eligibility Determinations); Army Corps (future field surveys “to be incorporated into the FEIS”); ADFG (cultural resource assessments not yet completed “will occur in 2019 with the information included in the Final EIS”); Draft EIS, at 3.1-12 and 3.7.1 (Missing Baseline Data); Draft EIS, at 3.1-12 (field surveys not completed and “additional field surveys may occur while the EIS is being completed”); Letter from Jaime Loichinger, Adv. Council Historic Pres., to Sheila Newman, Army Corps, at 1 (Dec. 21, 2018) (“Overall, the chapters on cultural resources and on historic properties demonstrate the incomplete nature of the effort to identify cultural resources and historic properties that may be affected by the referenced undertaking.”).
wildlife, natural gas pipeline, ports, economic feasibility, health impacts, air quality, solid waste, subsistence, and mitigation measures.

H. THE CORPS FAILED TO ADEQUATELY DESCRIBE THE AFFECTED ENVIRONMENT AND TAKE A HARD LOOK ON A WIDE RANGE OF DIRECT, INDIRECT AND CUMULATIVE IMPACTS

The Corps must consider direct, indirect, and cumulative impacts in the Draft EIS. These topics include the direct, indirect, and cumulative impacts on: the aquatic ecosystem, wetlands, water quality and quantity and hydrological impacts, fish and fish habitat, wildlife and habitat, geophysical impacts, air quality and emissions, power plant energy impacts, climate, subsistence, cultural resources, public health, environmental justice, economic impacts, tailings failure scenarios, tailings leaks, water management plan, acid rock mine

942 Pebble’s 2019 field program will be focusing on Marine mammal surveys Cook Inlet - March (complete)/May/late fall surveys; Draft EIS, at 4.23-3 (“PLP’s proposed mitigation incorporated into the project includes development of a Wildlife Management Plan. The plan would be developed for the project prior to commencement of construction.”); Letter from Mary Colligan, USFWS, to Shane McCoy, Army Corps, at 2 (Dec. 21, 2018) (“Many of the chapter sections contained notations that 2018 and 2019 field data are pending, and an analysis of those data will be added to the EIS when available. Due to a lack of current data for the affected environment, the Service is not able to provide comprehensive analysis of the environmental consequences of the proposed project on fish and wildlife resources.”).

943 See Draft EIS, Appendix E, at 15-20 (ADOTPF applications not yet submitted; Army Corps (“Additional details [regarding Cook Inlet and Iliamna Lake] pipeline crossings will be available ... following the completion of marine surveys in 2019”); Army Corps (further field work in 2019 will determine whether the port shore approach uses HDD or trenching); ADNR, State of Alaska, Cooperating Agency Comments Table, Pebble Project Preliminary Draft EIS, at (Dec. 21, 2018) (“only a small amount of the on-land natural gas pipeline corridor ... has been surveyed.”)

944 Metocean Buoy Measurement Program Data (RFI 39a) (deadline July 1, 2019) (“site-specific metocean data for the detailed design phase of the port. Results of this program are needed to update the affected environment description in Section 3.16 (Surface Water Hydrology) of the Final EIS.”); Draft EIS, at 4.15-14 (“As with the sheet-pile dock, detailed engineering analysis has not been completed in support of initial design” of the port site); Draft EIS, at 3.17-25 (“Groundwater/surface water interactions have not been studied ... at port sites.”).

945 Economic feasibility study wholly missing

946 Draft EIS, at 3.10-3 Health Impact Assessment (HIA) Wholly missing

947 See Draft EIS, Appendix E, at 15-20. Clean Air Act Permit Applications – Needed to help to inform the NEPA analysis. Fugitive Dust Control Plan Wholly missing Draft EIS, page 4.18-11 (“PLP is developing a fugitive dust control plan for mitigation and control of fugitive dust and wind erosion related to project activities.”)

948 See Draft EIS, Appendix E, at 15-20. Solid Waste Management Permit – Needed to help inform the NEPA analysis

949 Draft EIS, at 3.1-10. Missing Baseline Data - pertaining to subsistence activities in Bristol Bay drainages, some information is “unavailable, older, or limited” and in Cook Inlet drainages, “the extent of subsistence harvest activity, particularly fishing, in the project area on the western side of Cook Inlet has not been documented and limited information is available.” Draft EIS, at 3.1-11 (“Updated information would provide a more current picture of subsistence use in the immediate vicinity of the mine site, transportation corridor, port, and natural gas pipeline facilities.”)

950 RFI 71b (Update of Applicant’s Proposed Mitigation for Analysis in the EIS, deadline August 1, 2019) (“Mitigation measures included in the project design are integral components of the proposed action, are implemented with the proposed action, and therefore should be clearly described as part of the proposed action.”)
drainage, mine processing, chemical/toxic materials, financial assurances for reclamation and long-term monitoring and management, the natural gas pipeline, dredging activities, Iliamna Lake ferry, Amakdedori port, barge use, transportation corridor invasive species, endangered species, visual resources, noise pollution, human health, recreation, and socioeconomics. In addition to NEPA requirements, analysis of these issues and the direct and secondary impacts of the proposed Pebble Mine Project on these resources is essential for compliance with the 404(b)(1) Guidelines as well as the Corps’ public interest review. Therefore, we ask that the Corps consider these issues in the context of the 404 Permit Application as well.

**Best Available Data and Data Sufficiency Required for the Corps to Take a Hard Look.**

The environmental information made available to the public “must be of high quality.”\(^{951}\) NEPA therefore requires “[a]ccurate scientific analysis,” which is “essential to implementing NEPA.”\(^{952}\) Analyses contained in an EIS must ensure “scientific integrity.”\(^{953}\) NEPA finds relevant “both short- and long-term effects.”\(^{954}\) For the purpose of evaluating significant impacts in the EIS, if there is incomplete information relevant to reasonably foreseeable significant adverse impacts and the information is “essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant,” the information must be included in the EIS.\(^{955}\) NEPA requires that agencies take a “hard look” at all foreseeable environmental consequences.\(^{956}\) General statements such as those in the Draft EIS about “possible” effects and “some risk” do not constitute a “hard look” absent a justification regarding why more definitive information could not be provided.\(^{957}\) The Corps cannot “shunt[] aside significant questions with merely conclusory statements” and fail to provide an adequate foundation for their conclusions that impacts will be insignificant.\(^{958}\) Moreover, “vague and conclusory statements” without “supporting data” are inadequate under NEPA.\(^{959}\)

As noted under each of these categories and in Appendix D to this comment letter, a wide range of essential and current baseline data is missing from PLP’s application for many of its project components. This missing information makes the Corps’ job evaluating the direct, indirect, and cumulative impacts impossible. Many of these project components are located in pristine and largely unstudied areas of the region. As BBNC noted in its scoping letter to the Corps, “[p]rior to drafting an EIS for the proposed project, the Corps should require

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\(^{951}\) 40 C.F.R. § 1500.1(b).

\(^{952}\) Id.

\(^{953}\) 40 C.F.R. § 1502.24.

\(^{954}\) 40 C.F.R. § 1508.27(a).

\(^{955}\) 40 C.F.R. § 1502.22(a).


\(^{957}\) See *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1213 (9th Cir. 1998).

\(^{958}\) *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1223 (9th Cir. 2008) (internal quotations omitted).

\(^{959}\) Id. at 1223–24 (internal quotations omitted) (the agency thus failed to “articulate a satisfactory explanation for [their] action,” rendering it arbitrary and capricious). See *Motor Vehicle Mfrs. Ass’n.*, 463 U.S. at 43; see also *Blue Mountains Biodiversity Project*, 161 F.3d at 1213–14.
credible baseline data on the variety of issues that must be addressed in the EIS, irrespective of the time it may take to gather such data; Bristol Bay is no place to cut corners.”960 The Corps has failed to require the necessary surveys, as admitted to in the Draft EIS, and as such fails to adequately describe an accurate baseline of environmental, economic, and social factors. There is “no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA” without “establishing the baseline conditions.”961 The environmental baseline is the heart of the agency’s NEPA analysis, because it is against this information that environmental impacts are measured and evaluated; therefore, it is critical that the baseline be accurate and complete.962 The establishment of accurate baseline conditions is “a practical requirement in environmental analysis often employed to identify the environmental consequences of a proposed agency action.”963 And where an agency relies on inaccurate data for project area site conditions its assumptions concerning the environmental consequences of its proposed actions are arbitrary and capricious.964

Overall, the Draft EIS fails to use the best available science and take a hard look at the direct, indirect, and cumulative impacts. In particular, the Draft EIS fails to utilize the vast collection of scientific documents and risk assessment analysis specific to Bristol Bay contained in the EPA’s recent BBWA. The BBWA is a compilation of nearly 4 years of study by the EPA, undergoing two peer reviews by twelve experts, as well as two public comment periods and more than a dozen public hearings throughout Bristol Bay.965 While the DEIS sporadically and infrequently references the BBWA, the Draft EIS does not discuss its assessment in whole or make a clear statement regarding the findings in the assessment and whether the Draft EIS incorporates or takes issue with any of the BBWA findings. The final BBWA listed approximately 747 reference documents. Comparing it to the Draft EIS, BBNC found 42 references in common.966 This means that under 6% of the referenced items in the Bristol Bay Watershed Assessment ended up in the Draft EIS. To date, neither PLP nor the Corps have made a supportable scientifically-defensible argument that the BBWA findings are either not relevant or inaccurate. Despite the EPA 404(c) Proposed Determination’s scientifically relevant and credible findings and concerns, the Draft EIS does not even acknowledge its existence, let alone discuss why it is or is not incorporating its findings.

960 See attached Appx. F, BBNC Scoping Letter, App. B.
961 Half Moon Bay Fishermen’s Mktg. Ass’n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988).
962 Ctr. for Biol. Diversity v. BLM, 422 F.Supp.2d 1115, 1163 (N.D. Cal. 2006); 40 C.F.R. § 1500.1(b) (“Accurate scientific analysis” and “public scrutiny are essential to implementing NEPA.”).
963 Or. Natural Desert Ass’n v. Jewell, 840 F.3d 562, 569-70 (9th Cir. 2016).
964 Or. Natural Desert Ass’n v. Jewell, 840 F.3d 562, 569-70 (9th Cir. 2016).
966 https://pebblewatch.com/source-documents/
**Direct, Indirect, and Cumulative Impacts.** The EIS must assess the direct, indirect, and cumulative effects of the proposed project on the human environment, as well as means to mitigate adverse environmental impacts. The Corps must take a “hard look” at all direct, indirect, and cumulative effects and impacts to be analyzed, including ecological, aesthetic, historical, cultural, economic, social, and health impacts. These effects are defined as:

- **Direct Effects** – effects caused by the project that occur in the same time and place. This includes effects caused by the proposed Pebble mine project itself and all of its related components.

- **Indirect Effects** – effects that are somewhat removed in time or distance from the project, but nonetheless are reasonably foreseeable. This includes effects caused by the proposed Pebble mine project, and that are later in time and farther removed in distance but are still reasonably foreseeable. The indirect effects analysis “may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.” This includes effects such as changes in land use patterns, population density or growth, impacts of transporting ore, impacts of the power plant, and all of the related effects on air and water and the environment from these effects. While NEPA does not require agencies to engage in speculation, “[t]he EIS must identify all of the indirect effects that are known, and make a good faith effort to explain the effects that are not known but are reasonably foreseeable.”

- **Connected Actions, Cumulative Impacts, Reasonably Foreseeable** – connected actions are defined as actions that: automatically trigger other actions which may require environmental impact statements; cannot or will not proceed unless other actions are taken previously or simultaneously; or are interdependent parts of a larger action and depend on the larger action for their justification. “Cumulative impact” is defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” Reasonably foreseeable future actions need to be considered even if they are not specific proposals. This includes impacts on the environment resulting from the incremental impacts of the proposed Pebble mine when added to other past, present, and reasonably foreseeable future actions (i.e., other potential projects such

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967 40 C.F.R. §§ 1502.16, 1508.25(c).
968 40 C.F.R. § 1508.8.
969 40 C.F.R. § 1508.8(a).
970 40 C.F.R. § 1508.8(b).
971 Id.
973 40 C.F.R. § 1508.25(a)(1).
974 40 C.F.R. § 1508.25(a)(2).
as expanding the Pebble mine size or mining other deposits in Bristol Bay). In a cumulative impact analysis, the Corps must take a “hard look” at all actions and provide adequate analysis about how these projects impact the environment. The effects and impacts to be analyzed include ecological, aesthetic, historical, cultural, economic, social, and health impacts. The EIS must also consider actions that are connected with, or closely related to, the project in question. The Corps must also fully review the impacts from all “past, present, and reasonably foreseeable future actions” under cumulative impacts. A cumulative impact analysis must provide a “useful analysis” that includes a detailed and quantified evaluation of cumulative impacts to allow for informed decision-making and public disclosure. The NEPA requirement to analyze cumulative impacts prevents agencies from undertaking a piecemeal review of environmental impacts. The NEPA obligation to consider cumulative impacts extends to all “past,” “present,” and “reasonably foreseeable” future projects.

The Pebble Project Draft EIS fails to conduct the required “hard look” at the project’s impacts, for both the 20-year mine plan and in the 78-year mine plan and all associated infrastructure. The Draft EIS’s analysis of is cumulative effects failed to take a ‘hard look’ at all actions. “[A]nalysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment. … Without such information, neither the courts nor the public … can be assured that the [agency] provided the hard look that it is required to provide.” Furthermore, a cumulative impact analysis must provide a “useful analysis” that includes a detailed and quantified evaluation of cumulative impacts to allow for informed decision-making and public disclosure.

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975 40 CFR § 1508.7.
976 Te-Moak Tribe of Western Shoshone v. U.S. Dept. of Interior, 608 F.3d 592, 603 (9th Cir. 2010) (rejecting BLM-issued EA for mineral exploration that had failed to include detailed analysis of impacts from nearby proposed mining operations).
977 Id. § 1508.8.
978 40 C.F.R. § 1508.25(a)(1).
979 40 CFR § 1508.7.
980 Kern v. U.S. Bureau of Land Management, 284 F.3d 1062, 1066 (9th Cir. 2002); Ocean Advocates v. U.S. Army Corps of Engineers, 361 F.3d 1108 1118 (9th Cir. 2004).
981 Earth Island Institute v. U.S. Forest Service, 351 F.3d 1291, 1306-07 (9th Cir. 2003).
982 Hall v. Norton, 266 F.3d 969, 978 (9th Cir. 2001) (finding cumulative analysis on land exchange for one development failed to consider impacts from other developments potentially subject to land exchanges); Great Basin Mine Watch v. Hankins, 456 F.3d 955, 971-974 (9th Cir. 2006)(requiring “mine-specific … cumulative data,” a “quantified assessment of their [other projects] combined environmental impacts,” and “objective quantification of the impacts” from other existing and proposed mining operations in the region).
983 40 C.F.R. § 1508.7. See also Te–Moak Tribe of W. Shoshone of Nev. v. U.S. Dep’t of Interior, 608 F.3d 592, 605 (9th Cir. 2010).
984 Te-Moak Tribe of Western Shoshone v. Dept. of Interior, 608 F.3d 592, 603 (9th Cir. 2010).
disclosure. The NEPA requirement to analyze cumulative impacts prevents agencies from undertaking a piecemeal review of environmental impacts.

None of the “cumulative effects/impacts” discussions in the Draft EIS for the various resources and impacts contain this required quantification and other detailed reviews required by NEPA. In the cumulative impacts sections of the Draft EIS, there is little mention, let alone the required quantitative analysis, of the other past, present, and reasonably foreseeable future actions in the area. The Draft EIS cumulative impacts analysis merely contains a cursory discussion of the 78-year mine plan in a qualitative manner – i.e., that the impacts would be “more” – rather than describing the impacts in a quantitative way, as required by NEPA. There is also no real discussion of cumulative impacts beyond the 78-year mine plan, which has been itself inappropriately characterized as a reasonably foreseeable future action and analyzed in cumulative impacts. There is no quantitative discussion, analysis, and disclosure of the impacts associated with mining the 12 other mineral deposits identified by the applicant as future ore targets, nor of the six other potential mines that would be developed if mining infrastructure is developed as a result of this project. The Draft EIS merely briefly describes the impacts of the 20-year mine itself, without analyzing the impacts from other nearby activities. That violates NEPA. Indeed, “Inaccurate economic information may defeat the purpose of an EIS by ‘impairing the agency’s consideration of the adverse environmental effects’ and by ‘skewing the public’s evaluation’ of the proposed agency action.”

The Draft EIS acknowledges that the “Pebble Mine Expanded Development Scenario” to mine 55% of the delineated resource would need additional tailings storage, additional water storage, new waste rock storage facilities, a concentrate pipeline, and a deep-water loading facility and is reasonably foreseeable. It is reasonably foreseeable that the Pebble Mine Expanded Development Scenario would begin within the timeframe of the proposed 20-year mine, as is standard for mine expansions around the country. The DEIS relegates the expansion to “possible future action” status rather than considering it a practicable alternative. As a consequence, this more likely profitable scenario with its much larger mining footprint is not evaluated for direct or indirect effects but more narrowly for cumulative effects only, thus underestimating the impacts on fish, fish habitat, and humans.

985 Kern v. U.S. Bureau of Land Management, 284 F.3d 1062, 1066 (9th Cir. 2002); Ocean Advocates v. U.S. Army Corps of Engineers, 361 F.3d 1108 1118 (9th Cir. 2004).
986 Earth Island Institute v. U.S. Forest Service, 351 F.3d 1291, 1306-07 (9th Cir. 2003).
987 NRDC v. U.S. Forest Serv., 421 F.3d 797, 811 (9th Cir. 2005) (agency misread market demand report before opening area to timber sales) (quoting Hughes River Watershed Conservancy v. Glickman, 81 F.3d 437, 446-48 (4th Cir. 1996)). See also Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv., 235 F.Supp.2d 1143, 1157 (D. Wash. 2002) (“An EIS that relies upon misleading economic information may violate NEPA if the errors subvert NEPA’s purpose of providing decisionmakers and the public an accurate assessment upon which to evaluate the proposed project.”).
988 Draft EIS, at page 4.1-9, Table 4.1-1.
989 See, e.g., Draft EIS at page 4.1-8 to 4.1-9 (“similar to what has happened with other Alaskan mines where adjacent reserves are commonly owned.”).
Since the Pebble Project Expansion would be 1) dependent on the approval of this initial permit, 2) could not proceed unless this permit is approved previously, and 3) is classified as an “expansion” or an interdependent part of the larger Pebble Mine action and thus depends on the larger action for its justification; it should be evaluated as a potential connected action in the indirect impacts analysis (40 CFR 1508.25 (a)(1)(i-iii)).

ADF&G recommended that the Draft EIS “[e]xpand the narrow definition of RFFAs [Reasonably Foreseeable Future Actions]. At the least, RFFAs should include mining claims held by and stated by Northern Dynasty as part of the overall strategy for development.”\(^\text{990}\) Consequently, ADF&G commented that the alternatives analysis was too limited, noting the “Cumulative Effects section of Chapter 4, Section 2 is brief and incomplete. While the section identifies a number of reasonably-foreseeable future actions it does not present any information on the actual cumulative effects of the proposed action in relation to these RFFA’s.”\(^\text{991}\) ADF&G recommended that the Corps “[r]evise cumulative effects sections to include analysis of cumulative nature of project impacts impacts.”\(^\text{992}\)

ADF&G also found that the Cumulative Effects section failed to provide a “useful,” “quantified and detailed” analysis of the impacts of the 78-year mine, commenting that overall, “[t]he Cumulative Effects section is incomplete and cursory and requires additional analysis and detail regarding the cumulative effects of the other RFFA’s in relation to the proposed project,” and that the Corps should “[r]evise and update section to completely describe the reasonably foreseeable cumulative effects.”\(^\text{993}\) Pertinent to BBNC’s interests, the RFFA’s cumulative impacts on commercial and recreational fisheries, for example, is telling in the assumptions it makes. ADF&G commented that “it is suggested that fishermen and all the businesses that support them, can just move to other areas. If the Pebble development forces them to move to another area, and then the other exploration and development projects that are listed in the RFFAs do the same, the options for fishing get more and more reduced and the ‘takeings’ becomes much larger.”\(^\text{994}\)

ADF&G recommended that the Draft EIS quantify the reduction in fisheries from the RFFAs. “Maps needs [sic] to be included for all potential exploration and developments identified in the RFFA. This analysis should include survey data from fishermen, lodges, and outfitters, to obtain a realistic estimate of the river miles of alternative fishing areas and what percentage the loss of river miles makes up of the total. The survey should include the proposed Pebble project area and all applicable RFFAs.”\(^\text{995}\) However, despite revising and expanding the Cumulative Effects discussion, the Draft EIS fails to completely address these and other ADF&G concerns, that bear directly on the livelihoods of people in the region, and

\(^{990}\) ADF&G, Pebble Project EIS, Consolidated Comments Table, p. 7.

\(^{991}\) Id., at p. 29.

\(^{992}\) Id.

\(^{993}\) Id., at p. 33.

\(^{994}\) Id., at p. 11.

\(^{995}\) Id., at p. 2.
includes no locally informed discussion of the drastic implications of these potential changes on some of the most important economies tied to the region.

In sum, by merely listing RFFA’s, the Draft EIS’s cumulative impacts analysis failed to take a “hard look” at all actions, is thus inadequate, and should be completely revised to provide “useful analysis.”

Even if the Corps’ limited NEPA review of the 20-year mine plan is proper, which it is not, the Draft EIS is inadequate for even that smaller mine plan. As described below, for each type of impact analyzed, the Draft EIS is missing essential baseline information and fails to disclose and analyze impacts of the project. And for the actual proposed mine at the Pebble deposit, the 78-year mine plan as described by the applicant themselves in SEC and state permitting documents, the Draft EIS completely fails to contain any description of direct and indirect impacts in any quantifiable way.

1. Geology

As BBNC stated in our scoping letter, the Corps “must address impacts to bedrock, surface geology, gravel resources, paleontological resources, and landforms from all proposed Pebble project components.” Potential impacts from mining activities include changes in landforms and reduction in mineral, soil, fossil-bearing bedrock and aggregate resources; changes to the mechanical and thermal properties of the soil during construction and operations; and modifications to permafrost distribution as a result of surface and subsurface intrusions during construction and operations. The Draft EIS should quantify and analyze these impacts and evaluate their effects. By failing to do so, the Draft EIS fails to take a hard look at direct, indirect, and cumulative impacts of mining activities on geology.

The Corps must also go beyond addressing the impacts of mining activities on geology and address how underlying geology may impact other important NEPA analyses, such as water quality. Mining can contaminate water through multiple pathways depending on the surface and subsurface geology and the dynamic interaction between ground water and surface water. The geology section must go beyond a mere textbook characterization of geology in isolation and discuss the dynamic interchange between water quality, hydrology, and geology, especially considering the potential for tailings facility leakage (which is

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996 The cumulative impacts analysis must do more than simply list reasonably foreseeable future actions; rather, it must include some “quantified or detailed information” on the future projects. See, e.g., Te–Moak Tribe of W. Shoshone of Nev. v. U.S. Dep’t of Interior, 608 F.3d 592, 605 (9th Cir. 2010) (“In a cumulative impact analysis, an agency must take a ‘hard look’ at all actions. An EA’s analysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment.”) (internal quotations omitted).

997 See attached Appx. F, BBNC Scoping Letter, App. B.

expected)\textsuperscript{999} or catastrophic failure. Geologic and hydrogeologic characteristics should be mapped and analyzed for all proposed Pebble project components, and facilities and infrastructure should be analyzed to determine whether they are designed with these characteristics in mind.

Although PLP’s own baseline studies found high hydraulic conductivities in the Pebble deposit area,\textsuperscript{1000} the interaction between the geology underlying the mine site and water quality issues is not mentioned in the Geology section. Nor are the implications. At the Pebble Mine site, the highly fractured geology makes it highly unlikely that seepage from the bulk tailings storage facility, the pyritic tailings storage facilities, and the mine pit will be completely captured. The Draft EIS describes that the geology underlying the mine site largely consists of unconsolidated sediments, or overburden. “These sediments consist of glacial till, outwash, alluvium, alluvial fan and deltaic deposits, and glaciolacustrine (glacial lake) deposits (reference omitted). Sediment grain sizes vary from silt, sands, and gravels to boulders. Overburden ranges in thickness from a few feet to about 165 feet (citation omitted).”

One expert suggested the implications of this description:

these descriptions suggest that soil conditions in the area of the proposed mine are highly permeable and highly saturated. This indicates that numerous pathways may exist for leachate to reach the groundwater table in the vicinity of tailings and waste rock storage facilities. As a result, this has a strong potential to result in contamination to surface waters in the vicinity of and downstream from the proposed mine.\textsuperscript{1001}

Review of the baseline geology “strongly suggests that it will be impossible capture sufficient leachate to avoid significant water quality impacts to surface waters downstream of the mine.”\textsuperscript{1002} As such, this information deserves careful consideration in the geology section of the Draft EIS, or a cross-reference to the water quality and hydrology sections at a minimum. The Corps should also require baseline geological studies of groundwater and

\textsuperscript{999} Draft EIS, p. 4.17-15 (“[i]mpacts to groundwater from the pyritic TSF facility would occur if the project is permitted and constructed, and would be long term, lasting until the facilities are removed during closure. The magnitude and extent of effects could slightly exceed historic seasonal variation, but would not extend beyond project component areas.”).


\textsuperscript{1001} See attached Appx. E, at pages 176 to 177, Yocom, Thomas G., Recommendations on the scope of analysis pursuant to the National Environmental Policy Act and Section 404 of the Clean Water Act (June 17, 2018), at pages 18-19.

\textsuperscript{1002} Id. at 19. Yocom also notes that “[i]t also suggests that efforts to isolate surface waters from groundwater flow, assuming it could be done, would materially impair the habitat values of the affected streams. Id. This is due to the strong connection between groundwater and surface waters that helps to moderate water temperatures and streamflows. Id. at 18.
surface water interactions of project areas other than the mine site, such as the transportation corridor and port sites, and include this data in a revised Draft EIS for public comment.

Furthermore, information on the surficial geology of these areas should also be included so that the Draft EIS can properly assess other geologic impacts and interchanges. The Draft EIS should include maps of surficial soils and geology at the materials site and quarry locations, for example, and describe how their geologic properties could affect the material breakdown of road surface material and the generation of road-borne dust.1003

Finally, PLP has not provided the Corps with geotechnical information related to any of the proposed road construction materials sites. Instead, the Draft EIS notes that “[f]inal volumes of these gravel materials, and specific location of material sites and development plans for those sites, would be part of the final project design.” 1004 Moreover, PLP has not provided the Corps with adequate geotechnical of geochemical data related to the mine site, materials to be quarried and used for construction, and the geology beneath proposed embankments. According the Draft EIS PLP has only conducted “[p]reliminary testing of quarried rock material [and] [f]urther detail would need to be developed in support of state permitting and the Reclamation Plan Approval requirements, and Closure Cost Estimate and bonding requirements.” 1005

As the Draft EIS and RFIs released subsequent to the Draft EIS admit, this information is essential to review under NEPA, and yet it will not be available until after the Final EIS.1006 This missing data is particularly concerning to BBNC, as PLP has proposed—without our permission—to use up to 4 million cubic yards of our rock, gravel, and sand for its materials sites and road construction.1007 The Draft EIS presents no discussion of alternative materials sites other than the proposed sites, many of which propose to use and encumber BBNC’s subsurface. The Corps should provide feasible alternatives to the proposed materials sites and should require PLP to assess the comparative geology between these sites. Indeed, an array of impacts can flow from the geology of a chosen materials sites, including the use of undesirable road materials containing PAG rock and mercury, commonly and randomly distributed throughout the proposed road corridor regions.1008 If the geology of these proposed materials sites is not first tested, the Corps cannot possibly analyze the potential impacts to wetlands, waters, and aquatic life from using this material as road fill.

1003 Id.
1004 Draft EIS, at page 2-58.
1005 Draft EIS, at page 2-18.
1006 PLP response to RFI 0014a, Geotechnical Boring Program Report (sent to PLP on March 1, 2019, response requested by March 15, 2019) (“PLP is not proposing to complete the final field report for the geotechnical boring program this year. The report will be updated following collection of additional data from the instrumentation installed in the borings and is not anticipated to be available prior to completion of the FEIS.”).
1007 See, supra II.B.
1008 See Draft EIS, page 4.27-59 (“Mercury is naturally present at low levels in some rock formations within the project area.”).
If the Corps fails to include geologic baseline data essential for project design and analysis of impacts in the Final EIS, it will be in violation of NEPA. In addition, this information is essential to the public review mandates of NEPA and thus the Corps should revise the Draft EIS once it obtains this missing information and reissue the Draft EIS for public comment.

2. Soils

As BBNC stated in our scoping letter, the Corps “must address impacts to soil, permafrost, and erosion, including soil quality and contamination and removal and destruction of soil resources from all proposed Pebble project components.”

The Draft EIS contains no field baseline data on soils whatsoever. The Draft EIS relies heavily on the Exploratory Soil Survey of Alaska (ESS) for soils data and is lacking in field-verified data. For the mine site itself, the Draft EIS notes the reliance on this ESS data is lacking field verifications. However, the Draft EIS admits that its own reliance on ESS “is not sufficient for site-specific interpretations” and its “evaluation is based on generalized soil descriptions provided in the Exploratory Soil Survey of Alaska (ESS), and does not account for local variations in soil conditions.”

The ESS is not intended to be used in lieu of a detailed onsite investigation of soils and is not the best science to analyze the impacts of the proposed Pebble Mine Project. As an initial issue, it is extremely outdated, having been published in 1979 with data collections informing the report occurring between 1967 and 1973 when soil taxonomy was not fully developed. Second, the application of the ESS soil interpretations to land use planning is limited to the following activities and uses: common crops, range for cattle and sheep, range for reindeer, commercial forestry, road location, low buildings, recreation, and off-road trafficability. The ESS is not a planning document suitable for baseline information and analysis regarding the construction of a mining operation and impoundment structures. Third, the ESS itself notes that it may be used in “preliminary planning for routes for highways or similar projects and in identifying some of the general problems likely to be encountered.” The ESS is not valid for specific sites and where detailed soil surveys are required for planning specific sites “in which the soils are more precisely defined.”

\[1009\] See attached Appx. F, BBNC Scoping Letter, App. B.
\[1010\] Draft EIS, at page 3.14-1.
\[1012\] Draft EIS, at page 3.14-2.
\[1013\] Draft EIS, at page 4.14-12.
\[1015\] Id. at pages 175 to 207.
\[1016\] Id. at page 175.
\[1017\] Id.
While the Draft EIS mentions that the soils at the mine site are “formed from volcanic source rocks,” it fails to include any description of the influence, amount, location, and depth of volcanic ash in the soils. This is extremely problematic given the Pebble deposit’s close proximity to volcanic activity and because volcanic ash component in soils has a significant influence on the chemical and engineering properties of the soil, such as bearing capacity, shear strength, permeability, and erodibility.

Third, the ESS does not include information related to permafrost, and PLP has not surveyed the area for permafrost. The Draft EIS states that “[t]here is no known permafrost in the project area, including the areas of all alternatives and variants,” but then a few pages later states that “[s]mall patches of permafrost may occur in the project area” and “permafrost has been observed in the general area” of the transportation corridor. These statements are inconsistent and are due to the PLP collecting zero baseline data related to permafrost and relying on literature not intended to account for permafrost. The Draft EIS admits that permafrost conditions “can cause problems during development,” including “melting and erosion,” and yet fails to adequately describe the environmental baseline and impacts of the project on permafrost. The Draft EIS also fails to adequately analyze the potential for permafrost to impact the safe construction and operation of project components.

The Draft EIS acknowledges several times that additional field and lab analyses are required to provide accurate classification of the soils. The Draft EIS contains no field data from PLP related to soils. Indeed, PLP’s Environmental Baseline Documents also contain no field data related to soils. Given the magnitude of the proposed project in this environmentally sensitive area and the importance of soil to the engineering of this project, a comprehensive detailed soil survey determining the suitability and limitations of the soil, should be considered prior to issuing a permit to develop the site. The Corps should require that PLP conduct extensive field surveys and lab analyses of soils—including for the presence and absence of permafrost—at the mine site and all other project component areas. Specific data on local soil conditions is necessary to inform review of the project under NEPA and 404 (for informing the type of fill) and an analysis of impacts. Mitigation measures should be re-evaluated as well once sufficient baseline soils data has been obtained. For example, the Draft EIS indicates that a fugitive dust control plan “would” be developed for air quality, water quality, and human health, but the plan must address all affected resources other than the three resources named, which includes soils among others. Once the Corps has this information from PLP, it should revise and re-issue the Draft EIS for public review and comment.

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1018 Id.
1019 Draft EIS at page 3.13-1; 3.14-1; 3.16-22.
1020 Draft EIS at page 3.14-1.
1021 See Pebble EBD 2004 through 2008 Chapters 5 (Bristol Bay soils) and 29 (Cook Inlet soils).
1022 Draft EIS at page 5-8.
3. Geohazards and Seismic Conditions

As BBNC stated in our scoping comment letter, the Corps “must address impacts from earthquakes, slope instability, dam construction, and horizontal directional drilling.”1023 The location of the proposed Pebble Mine Project provides a “very high innate geotechnical risk” that must be evaluated in the EIS.1024 The Draft EIS fails to adequately describe the various geotechnical risks posed by the project, in particular the Draft EIS (1) fails to adequately describe the seismic setting, wet climate, and sensitive receiving environment giving rise to an innate geotechnical risk; (2) fails to adequately describe and model earthquake risk and study possible fault lines; (3) fails to adequately describe the risks associated with catastrophic containment failures of TSF facilities and the Water Storage Facility and the cascading impacts of failures; (4) fails to adequate describe and assess the risk of a catastrophic pit wall failure and cascading impacts of this failure; and (5) fails to adequately describe and analyze the risks associated with tsunamis and seiches. Overall, the Draft EIS fails to adequately describe the seismic setting, wet climate, and sensitive receiving environment giving rise to an innate geotechnical risk associated with the proposed project. The Draft EIS must disclose and analyze the full range of risks associated with this unique seismic setting.

Reviews of the Draft EIS for gaps and deficiencies by Bretwood Higman, PhD, Nicholas Riordan, PhD, and Richard Borden, found in attached Appendix E pages 2124 to 2339 describe some of the seismic setting issues missing from the Draft EIS. The Draft EIS must be revised to address these concern, in particular, these experts note that to fully describe the overall seismic setting, the Corps must (1) complete paleoseismic studies and site-specific modeling of earthquake shaking to quantify topographic and other factors leading to seismic focusing; (2) complete a seismic geotechnical analysis (pseudo-static) on the current embankment designs and for the fully flooded open pit; (3) perform seiche wave predictions for various pit lake flooding scenarios, tailings storage facilities, and Iliamna Lake; (4) use high-reliability methods for mapping and assessing the seismic potential of the Lake Clark Fault, or otherwise conservatively assume that it passes along the faults mapped within the prospect itself and is capable of producing large earthquakes; (5) conduct site-specific modeling for tsunamis at all proposed port sites (Amakdedori, Iniskin, and Williamsport) and in Iliamna Lake; and (6) once these modelings and studies are completed to better assess and describe risks, the EIS must then analyze and disclose mitigation measures necessary to reduce risk.

4. Climate and Meteorology

As BBNC stated in our scoping comment letter, the “proposed Pebble mine project would contribute to global climate change, primarily through the release of greenhouse gases from the burning of fossil fuels during production and shipping. Climate change will in turn

1023 See attached Appx. F, BBNC Scoping Letter, App. B.
impact many aspects of the physical, biological, and social environment, including precipitation patterns, permafrost distribution, vegetation, wildlife, fire regimes, and subsistence.”

**Best Available Science on Climate and Climate Change.** Climate change is likely already to have begun, and will likely continue to, have significant impacts on the Bristol Bay region over the next several decades. Climate change will exert alterations in the pattern of weather events and extremes, climatic trend, vegetation change, hydrologic alterations, and ecosystem biological and trophic changes.

Despite widespread evidence of the impacts of climate change on Bristol Bay, the Draft EIS assumes that climate change is not happening. By attributing climate-driven changes to natural variability, the Draft EIS ignores best available science. As stated by experts with decades of experience with research into climate, meteorology, water balance, and fisheries in Bristol Bay:

> [T]he DEIS goes to great lengths to dismiss the well-accepted science regarding climate change in Alaska. The National Climate Assessment (NCA4) – the definitive source of information regarding past and future climate variability – unequivocally states that increasing temperature trends in Alaska over the past few decades are significantly larger than what would be expected due to natural variability (citation omitted). But the DEIS and supporting documentation spend a great deal of time trying to demonstrate that the observed trends in the mine site records are due solely to natural variability, and dismiss the deep body of scientific literature that projects substantial changes in climate, particularly at high latitudes (citations omitted).

Best available science indicates that:

> Over the last 50 years Alaska has experienced increasingly warmer climates and associated effects on ecosystems such as shifts in ice break-up dates, less snow and more rain during the winter, and melting permafrost in northern regions of the state. Plausible scenarios for the next 100 years all include further warming, intensifying precipitation, and increasingly less winter snow

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1025 See attached Appx. F, BBNC Scoping Letter, App. B.


and ice. These changes in climate pose distinct risks to aquatic ecosystems and to infrastructure.\textsuperscript{1029}

Climate change, especially changes in precipitation patterns, are of particular relevance to the Pebble Mine EIS description of the affected environment and analysis of impacts, as:

\textsl{[C]hanges in precipitation patterns, particularly during the winter when rain-on snow events will become more common, pose additional risks to flooding and erosion. Thus, risks of infrastructure fails must include the expected disturbance frequencies and intensities that will occur with changing climate. The DEIS assumes that these will be no different than the historical disturbance patterns observed in Alaska. This assumption is in distinct contrast to the science documenting ongoing climate change effects on Alaska’s ecosystems, and leads to reduced estimates of risk of the Pebble project.}\textsuperscript{1030}

Other impacts of precipitation changes on the region that must be disclosed and analyzed in the Draft EIS may include:

- Increased frequency of freeze-thaw processes and loss of permafrost with climate change could result in greater propensity for mobilization of mercury from soils into surface waters and their biota.
- Increased rain-on snow runoff and more precipitation as rain rather than snow is likely to increase aqueous runoff and sediment transport from polluted road surfaces into surface waters.
- Increased duration and frequency of dry weather in summer and winter seasons is certain to increase the incidence and magnitude of dust generation and dispersal from the mine site and roads.
- Increased freeze-thaw episodes and more rainfall as precipitation is certain to increase the need for grading, recontouring, culvert and bridge maintenance and reconstruction work on roads; each such event raises the risk that mercury and other accumulated mining-related pollutants are mobilized from roads and soils adjacent to wetlands and streams.\textsuperscript{1031}

Despite the significant risks posed by changing precipitation patterns due to climate change, especially extreme precipitation events, the Corps relies on an outdated water modeling approach that ignores these trends. The EPA and other cooperating agencies specifically

\textsuperscript{1029} See attached Appx. E, pages 431 to 438, Dr. Daniel E. Schindler, Scientific Concerns About the Draft EIS for the Proposed Pebble Mine, June 17, 2019, at 5–6.

\textsuperscript{1030} See attached Appx. E, pages 431 to 438, Dr. Daniel E. Schindler, Scientific Concerns About the Draft EIS for the Proposed Pebble Mine, June 17, 2019, at 5–6.

\textsuperscript{1031} See attached Appx. E, pages 544 to 572, Frissell, Christopher, A., Failure to address Cumulative and Long-Term Effects of Bioaccumulation and Biomagnification of Contaminants, including Trace Metals and Hydrocarbons, in the Pebble Project DEIS (May 31, 2019), at 15.
requested that the Corps clarify its rationale for relying on a water balance approach incapable of addressing extreme precipitation events:

[The EPA] recommend[s] that the DEIS explain the rationale for using the month-to-month approach instead of a daily or event-based approach. [The EPA] also notes that extreme precipitation events can have significant impacts on the affected environment, which cannot be addressed by the water balance model using a month-to-month approach.1032

The Corps responded that it used a month-to-month approach to evaluate surface water and groundwater interaction.1033 The Draft EIS did not explain the Corps’ rationale for choosing an approach incapable of considering extreme precipitation, or for relying on historic data to project future trends, nor did it discuss the limitations of the Corps’ conclusions given these approaches.1034

The approach the Corps used also failed to consider the interaction between groundwater and extreme precipitation, which is a critical dynamic for determining how contamination of the groundwater will be avoided and the effectiveness of the mitigation measures proposed when some contamination does indeed occur, which the Draft EIS admits will happen.1035 Instead, the Corps did not update its approach to water balance and relied on a PLP-funded review of limited scientific sources that inexplicitly attributed no trends to precipitation changes in Alaska:

With regard to the possibility that climate change will lead to an increase in extreme precipitation events, Knight Piésold (2018g) evaluated the 1943 to 2016 annual maximum daily precipitation record for Iliamna. Based on their analysis, there are no trends in the record as a whole. The National Weather Service (NWS) also evaluated whether there is a trend in the extreme precipitation dataset for Alaska…. Based on review of Figure A.2.1 (NWS 2012), the three closest stations to the mine site indicated no significant trend at the 5 percent significance level…. Knight Piésold (2018g) also evaluated


1033 See Draft EIS, p. K3.16-4. “To evaluate surface water and groundwater interaction, a month-to-month water balance approach was selected, which included a semi-distributed spreadsheet method (Schlumberger 2011a). The selected method allowed for adjacent sub-catchments (smaller watersheds or basis) to be chained together, including the interaction of surface water and groundwater components.”

1034 See, e.g., Knight Piesold, 2018g, p. A-5 (“...the NCA4 Report presents results that represent projected future climate conditions over large areas, which indicate expectations of increasing temperatures and precipitation in the Pebble Project area. The historical climate datasets for Iliamna generally do not support these results, particularly when the PDO [Pacific Decadal Oscillation] effect is considered.”).

1035 See attached Appx. E, pages 431 to 438, Dr. Daniel E. Schindler, Scientific Concerns About the Draft EIS for the Proposed Pebble Mine, June 17, 2019, at pp. 5–6. “What is also missing from the DEIS is any acknowledgement of the uncertainties associated with understanding how these groundwater connections work under different precipitation regimes and under different mining excavation scenarios.” Id.
The Corps based its conclusion that climate change will have no or negligible impact on precipitation trends in Alaska on insufficient studies that fail to comport with best available science. The U.S. Global Change Research Program released the “Fourth National Climate Assessment” (NCA18) on November 23, 2018, prior to the publication of the Draft EIS. In addition to extensive detail on the observed and projected changes to our climate, driven primarily by fossil fuel use, the NCA18 describes in detail the consequences for Alaska’s terrestrial and marine wildlife and ecosystems; people, communities and infrastructure; and activities, culture and public health. The Draft EIS captures none of this recent research, and instead relies almost entirely on outdated approach and information.

Further, the Corps relies upon studies that, despite finding no trends, admit to significant data gaps. These studies limited their analysis to a subset of historic data from single weather stations rather than analyzing trends across the region as a whole, and assumed that climate change is not happening, a conclusion vastly at odds with scientific consensus. The Draft EIS should reconcile its findings with best available science, discuss and analyze the increase in extreme precipitation patterns expected for Alaska and for Bristol Bay, and explain the rationale for the basis of its reliance on outdated methods and data and the limitations of its conclusions given the overwhelming evidence to the contrary. Furthermore, the Draft EIS should consider the dynamic interaction between groundwater exchange and changing extreme precipitation projections due to climate change (see also Climate Change, infra Section V(H)(25)). Otherwise, its predictions of impact, and its proposed mitigation measures, are unreliable.

Indeed, much of the existing baseline information on precipitation, temperature, and other parameters relied upon in the Draft EIS is likely out of date; the environment and resources of the Pebble Project EIS analysis area are not the same as they were 40, 20, or even 10 years ago because of climate change, and will not be the same in 5 or 10 years, or the timespan of


1038 See attached Appx. E, pages 445 to 543, O’Neal, Sarah, Technical comments regarding fish and aquatic habitat in the Pebble Project Draft Environmental Impact Statement, at p. 5 (isolating potential impacts to each weather station, or in other instances, to each stream, the Draft EIS “vastly underestimate[s] overall project impacts.”).

the proposed project, which in some aspects will remain in perpetuity. As such, the Corps’ reliance on existing information of limited utility to assess long-term impacts to mining operations is risky and fails to comply with NEPA’s “hard look” and best available science standards. This problem is further exacerbated given that much of PLP’s baseline data is stale, having been collected for the most part between 2004 to 2008, and needs updating for the Corps to adequately assess the environmental baseline.

By accepting out of hand PLP’s arguments that a short period of historic observation is sufficient context for assessing future climate trends, the timescale of the Corps’ impacts analysis is also wholly incommensurate with the projected life of the mine. Impact assessments of mining on the environment, including the amount and timing of water requiring treatment, and the magnitude of extreme precipitation events, that do not incorporate long-term trends are meaningless given the projected mine life. For example:

The DEIS relies on a significant body of environmental baseline data that has been collected over the past 15 years. However, these baseline data reflect only recent historical hydrologic variability at the mine site. Because water management and mine infrastructure must be designed to be resilient to future temperature and precipitation variations decades into the future, these data need to be placed into the context of the expected range of variability that could occur over those coming decades. This means that PLP needs to consider long-term trends in precipitation, temperature, and other parameters that might influence operations over the long term.¹⁰⁴⁰

The Draft EIS’s impacts analysis ignores best available science, relies on outdated approaches and information, vastly underestimates climate impacts, and as such, is wholly unreliable. Absent relevant baseline data and integration of consensus-driven science on climate change, including additional missing information and data gaps that the Corps or the public identifies, and a full explanation of the approaches used to assess impacts, their relevance to the timescale of mining operations, and their limitations, the Corps cannot meaningfully evaluate the impacts of the proposed project, formulate or evaluate alternatives, or take necessary measures to protect important resources and values in the EIS Analysis Area. The need for further data and analysis is evident and the Draft EIS should thus be revised to include the additional information needed to fully address the impacts of climate change. The Corps must also use NCA18 as the information basis for the assessment of climate change and its impacts on Alaska.

**Synergistic Effects.** In addition to analyzing the direct, indirect, and cumulative impacts of the greenhouse gas emissions that will result from developing the proposed mine, the Corps must also analyze the ongoing and increasing effects from climate change into the baseline against which the alternatives will be evaluated and how existing and increasing climate

change impacts will act cumulatively and synergistically with effects from mining the proposed site. The EIS must analyze the proposed mining activities in the context of these and other ongoing climate impacts. The Corps’ analysis of these cumulative effects must be in-depth and must incorporate the best available science. The harmful effects of climate change will act cumulatively and synergistically with the effects of mining in the project area, leading to a significant increase in threats to the region’s incredibly important salmon species, biological resources, and ecosystems. Moreover, the Corps must grapple with the fact that these threats will grow over time, as the impacts from climate change become more severe, and the survival of many of the region’s species becomes more and more precarious.

Examples of synergistic and cumulative impacts of climate change and mining development are multiple and complex. As discussed in the “Climate and Meteorology” section above, the Draft EIS should discuss surface and groundwater interaction in the context of reasonably foreseeable future changes in precipitation and temperature patterns in the Bristol Bay area due to climate change, and assess their combined risk for groundwater contamination by mining activities. The Draft EIS fails to account for and disclose the possible effects of hydrologic and other stressors on the project that could be greatly elevated by climate change.

Another issue the Draft EIS should address involves the risk of catastrophic failure of the tailings storage facilities, and the potential for climate change to exacerbate the risk. The tailings disposal facilities need to be carefully designed to avoid the risk of catastrophic failure both during mining operations and following closure. Existing environmental conditions in and near the site, such as rainfall patterns, must be assessed alongside future projected environmental conditions, such as changes in extreme precipitation events, and the Draft EIS should discuss how these conditions inform the design of the tailings storage facilities and their closure plans. Since the tailings facilities will remain a long-term threat, the Draft EIS needs to assess the long-term risk of failure at these facilities in light of reasonably foreseeable changes to site conditions, including, but not necessarily limited to climate change.

In addition, climate change will impact precipitation patterns in Bristol Bay and this will in turn change the water treatment requirements for the mine over time, either during operations or post-closure. There is a real risk that increased precipitation will increase the influent to the proposed water treatment plants to unmanageable levels and subsequently overwhelm

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1041 See Klamath-Siskiyou Wildlands Ctr., 387 F.3d at 993.
1042 Kern, 284 F.3d at 1075.
1043 See Appx. E, at page 559, Frissell, Christopher, A., Failure to address Cumulative and Long-Term Effects of Bioaccumulation and Biomagnification of Contaminants, including Trace Metals and Hydrocarbons, in the Pebble Project DEIS (May 31, 2019), at 15.
1044 See, Appx. E, at page 184, Yocom, Thomas G., Recommendations on the scope of analysis pursuant to the National Environmental Policy Act and Section 404 of the Clean Water Act (June 17, 2018), at 26.
treatment capacities, causing the release of untreated water with elevated metals, toxics, low pH, high water temperature, and low oxygen. This risk and the impacts flowing from it on the human environment (including to fish and water quality) must be analyzed in the Draft EIS.

The hydrology of the area is also changing rapidly, as the climate changes. Increased hydrologic variability will increase the likelihood of overwhelming the design criteria applied in stream crossings, resulting in washouts, possible accidents, spills, and pipeline ruptures, and the need for ongoing reconstruction work. Despite these significant risks, baseline hydrological data needed to assess such risk competently is missing for several project locations outside the mine site, including for drainages south of Iliamna Lake. The Draft EIS does not discuss the extent to which this missing information affects the characterization of the affected environment and its analysis of impacts, and no additional field data collection is planned to mend these data gaps. In fact, the Surface Water Hydrology RFI (RFI 118) is one of the outstanding RFIs to which PLP has yet to respond. The Draft EIS simply indicates that “[w]here sufficient streamflow data are not available, it is standard practice in Alaska to design the drainage structures using regional regression equations to predict the design. Regional regression equations that might be used for this project are the USGS regression equations published in 2016 (citation omitted).” It is unclear from the Draft EIS whether these flooding regression equations consider potential long-term changes in weather and climate. The Corps must collect baseline information and undertake studies of how climate change will act cumulatively and synergistically with surface water hydrology in the proposed project area throughout the entire period of potential mining activities, address climate change in its modeling, and include this information in a revised Draft EIS.

The Draft EIS also must factor climate change into long-term monitoring plans. The BBWA concludes that, “[m]aintenance of mine discharges in terms of water quality, quantity, and timing to avoid adverse impacts would require long-term commitments for monitoring and facility maintenance.” Potential cumulative risks include, but are not limited to, catastrophic failure of the tailings storage facilities, breakdowns in the leachate collection system (including failure to detect new leachate sources), and failure to maintain wastewater treatment facilities. Climate change may exacerbate these risks. As the EPA notes, “[a]dditionally, climate change and the predicted increases in water surplus for the region (reference omitted) will result in potential changes in streamflow magnitude and seasonality, requiring adaptation to potentially new water management regimes for the water processing

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1045 The Draft EIS at Executive Summary page 71 admits that untreated contact water will contain elevated levels of toxic metals.
1046 See Appx. E, at page 559, Frissell, Christopher, A., Failure to address Cumulative and Long-Term Effects of Bioaccumulation and Biomagnification of Contaminants, including Trace Metals and Hydrocarbons, in the Pebble Project DEIS (May 31, 2019), at 15.
1047 Draft EIS, p. 3.16-26.
1048 BBWA at page 8-61.
facilities. **We know of no precedent for the long-term management of water temperature on this scale at a mine.**

The examples discussed above—the influence of precipitation changes on tailings facilities design, water management regimes, mitigation measures for catastrophic failures, and long-term monitoring plans—are only a few of numerous examples of synergistic effects whose analysis is wholly missing from the Draft EIS. The EIS does not adequately reckon with the nature of climate change impacts or how the impacts of climate change will interact with the impacts of the proposed mining operations. This failure violates NEPA’s requirement to take a “hard look” at these impacts. The EIS must therefore be revised to address how climate change will impact resources and values in the Pebble Project EIS analysis area, and how those harms will act cumulatively and synergistically with the effects of the proposed mine development.

**Cumulative Effects on Biological Resources—Salmon and Other Fish.** Climate change is virtually ignored in the Draft EIS with respect to hydrologic and associated fish habitat changes. The discussion of the impacts of climate change on salmon and other fish species is wholly inadequate, and essential aspects of the impacts analysis are not even considered in the Draft EIS. Throughout the Draft EIS, the Corps relies on improper attempts to tier, ignores the best available scientific information, and makes unsupported conclusory statements and generalizations instead of actually analyzing the indirect and cumulative impacts to the resources of the region.

The location of the Pebble deposit, its hydrologic connection to the headwaters of three major salmon streams, and its surface covered with thousands of acres of wetland and aquatic habitats, make PLP’s proposed mining of the Pebble deposit likely to be more environmentally damaging than most, if not all, alternative ore deposits in Alaska, if not worldwide.

Climate change will only exacerbate the impacts of mining on salmon habitat and salmon populations in the proposed project analysis area. The most likely effects of climate change on the region’s salmon species include a rise in water temperature of local rivers, streams and lakes; an increase in total annual precipitation; and a change in the periodicity of precipitation (more will fall as rain and less as snow). New research released after the Draft EIS suggests climate change is having vast effects on the life cycles of salmonids in

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1049 BBWA at page 8-61.
Bristol Bay. Some of these changes could prove harmful to other fish in addition to salmon, particularly when combined with stresses from mining.

The discussion of the impacts of climate change on the region’s fish species virtually ignores climate predictions or relies on assumptions that the species will adapt to the changes with no long-term impacts on their survival. Where the Draft EIS does include some analysis, the analysis deeply flawed. For example, climate predictions are not factored into the impacts analysis for fish and aquatic habitat with respect to any aspect of the project (water flow, temperature, water quality, fish habitat, etc.). The Draft EIS also fails to factor climate change into its analysis of the cumulative impacts of mine development and closure on fish and aquatic habitat. Moreover, the Draft EIS does not assess critical impacts to salmon post-closure, even though, for example, in all likelihood, increased variability in precipitation and stream discharge will compound impacts of project operations post-closure, affecting stream temperatures, emergence timing, and other life history events that have evolved over millennia with specificity for individual spawning sites that may impact incubation and other important biological processes. Furthermore, “current habitat use may not reflect which habitats will be important to supporting production of salmon and other fishes in the future, and future habitat reliance may be particularly dynamic in the face of climate change.”

The Draft EIS must be revised to address these issues.

As estimates of fish habitat loss will likely be exacerbated by climate change, the Draft EIS should also acknowledge that future environmental changes due to climate change may reduce the ability of salmon to cope with such changes. For example:

More intense summer droughts, heat waves, and flooding events are expected with climate change. We know that maintaining a diversity of habitat conditions in watersheds is what provides fish and wildlife the ‘options’ for coping with extreme climate events. By reducing the variety of habitat conditions in these watersheds (i.e., by draining wetlands, dewatering streams, etc.), the Pebble project will undeniably reduce the resilience of these watersheds to future climate change. The current DEIS does not even consider these issues in its assessment of the risks of the Pebble project. … [C]limate

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change should be considered one additional and inevitable stressor with which mining-related stresses will interact and be amplified.\textsuperscript{1055}

Partly as a result of the stresses imposed by climate change, salmon will be less resilient to the impacts of catastrophic failures or spills. For “reduced life history complexity of sockeye salmon (especially reduced variance in age at return, or number of year classes contributing to a return year…)… likely increases the vulnerability of sockeye salmon populations to spills or catastrophic failures associated with mining.”\textsuperscript{1056}

Salmon will also be less resilient to other persistent impacts of mining. Coupled with water temperature increases due to mining activities, altered water temperature regimes from climate change could have population-level impacts on salmon species in the Bristol Bay region, since they are genetically adapted to a cold temperature regime.\textsuperscript{1057} Yet the Draft EIS assumes that these impacts will be negligible or even positive for some species.\textsuperscript{1058} This analysis is “highly flawed.”\textsuperscript{1059}

There are inconsistencies of reported water temperature, poor quality water temperature data to establish baseline conditions, and the analysis of the downstream extent of the effects is questionable and likely underestimates the length of streams affected. [The Draft EIS] uses an inappropriate standard (“optimum temperatures” for a species) and ignores the influence of local adaptation, which EPA (2014) noted was critical to consider. It also fails to recognize that: (1) small changes in water temperature can have significant ecological effects (e.g., time and size at emergence); (2) there will be cascading effects (cumulative effects) of changes in the timing of life-history events (phenology); and (3) makes unsupported assumptions about critical effects (e.g., effects on aquatic invertebrates and growth). As a result, the assessment of potential effects of the proposed mine and the conclusions in the DEIS are invalid and most likely wrong.\textsuperscript{1060}

Predicated changes due to mining and climate change may also significantly impact other, non-salmon species in the region, that are important to subsistence, such as Dolly Varden

\textsuperscript{1055} See Appx. E, at page 437, Dr. Daniel E. Schindler, Scientific Concerns About the Draft EIS for the Proposed Pebble Mine (June 17, 2019), at pps. 5–6.
\textsuperscript{1056} See Appx. E, at page 560, Frissell, Christopher, A., Failure to address Cumulative and Long-Term Effects of Bioaccumulation and Biomagnification of Contaminants, including Trace Metals and Hydrocarbons, in the Pebble Project DEIS (May 31, 2019), at 15.
\textsuperscript{1057} See Appx. E, at page 843, Chambers, Moran, and Trasky, Bristol Bay’s Wild Salmon Ecosystems and the Pebble Mine: Key Considerations for a Large-Scale Mine Proposal (January 2012), at p. 63.
\textsuperscript{1058} See Draft WIS, App. I, at p. 78.
\textsuperscript{1059} See Appx. E, at page 608, Dr. Gordon Reeves and Sue Mauger, Review of Water Temperature Impacts in the Proposed Pebble Mine Draft Environmental Impact Statement, at p. 5.
\textsuperscript{1060} See Appx. E, at page 608, Dr. Gordon Reeves and Sue Mauger, Review of Water Temperature Impacts in the Proposed Pebble Mine Draft Environmental Impact Statement, at p. 5.
The Draft EIS should also be revised to discuss and analyze these impacts. For a complete discussion of the impacts of climate change on fish species and other biological resources important to the project area, see Appendix E attached to these comments.\textsuperscript{1062}

\textbf{Impacts on Effectiveness of Proposed Mitigation Measures.} The Draft EIS and proposed project—and the analysis of impacts itself—rely on a host of inadequately described mitigation measures and management practices that are variable in their effectiveness, and likely to become less effective in the future given projected climate change.\textsuperscript{1063} The Draft EIS fails to disclose and analyze how climate change would impact the effectiveness of the proposed mitigation measures. To comply with NEPA, the Corps must disclose the effectiveness of the proposed mitigation measures and analyze the impacts of climate change and other stressors on the effectiveness of the measures over time.

\textbf{Conclusion.} The Corps must obtain missing and/or updated information about these and other climate issues before proceeding with the EIS. The Corps needs to obtain this information to ensure it has adequate baseline information for evaluating the existing conditions and future changes to the region due to climate change, and to ensure its conclusions are based on the best available science.

\textbf{5. Surface Water Hydrology}

As BBNC stated in our scoping comment letter, the Corps “must address impacts to surface water from changes in streamflow, dams and effluent, water balance, flood magnitude and frequency, wetlands, lakes, and ponds filling, surface water extraction from all proposed Pebble project components and during construction, operation, and closure phases.”\textsuperscript{1064} As

\begin{itemize}
  \item \textsuperscript{1062} See, e.g., Appx. E, at pages 430 to 1047, Schindler, Daniel E., Scientific Concerns About the Draft EIS for the Proposed Pebble Mine (June 17, 2019); O’Neal, Sarah, Technical comments regarding fish and aquatic habitat in the Pebble Project Draft Environmental Impact Statement (Draft, April 30, 2019); Frissell, Christopher, A., Failure to address Cumulative and Long-Term Effects of Bioaccumulation and Biomagnification of Contaminants, including Trace Metals and Hydrocarbons, in the Pebble Project DEIS (May 31, 2019); Reeves & Mauger, Review of Water Temperature Impacts in the Proposed Pebble Mine Draft Environmental Impact Statement (May 24, 2019); Rachel Hovel, Assessment of Pebble Mine Draft EIS: Salmonid life history diversity and impacts to Iliamna Lake (May 2019); Sarah O’Neal, A Review of PLP Environmental Baseline Documents: Resident fish and juvenile salmon habitat, distribution and assemblage (April 2012); Carol Ann Woody & Sarah Louise O’Neal, The Effect of Copper on Fish and Aquatic Resources (March 2012); Southwest Alaska Salmon Habitat Partnership, Strategic Conservation Action Plan for Bristol Bay Watersheds (2011); Prucha, Robert H, Review of Groundwater Impacts in the Proposed Pebble Mine Draft EIS and Evaluation of Potential Impacts on the Coupled Hydrologic System (June 6, 2019).
  \item \textsuperscript{1063} See Appx. E, at page 561, Frissell, Christopher, A., Failure to address Cumulative and Long-Term Effects of Bioaccumulation and Biomagnification of Contaminants, including Trace Metals and Hydrocarbons, in the Pebble Project DEIS (May 31, 2019), at p. 17.
  \item \textsuperscript{1064} See attached Appx. F, BBNC Scoping Letter, App. B.
\end{itemize}
discussed in Section IV.G. above and are incorporated by reference here, the proposed Pebble Mine Project, both in the 20 and 78 year configurations present issues to surface water hydrology that are inadequately assessed in the Draft EIS. Moreover, the BBWA and the expert reports included in the attached Appendix E, pages 1048 to 1377 presents the best available science on the surface water impacts from mining the Pebble deposit and should but used to inform the Draft EIS.

Finally, the lack of surface water baseline data impedes the public’s review and needs to be corrected for the document to comply with NEPA. For example, the Draft EIS admits that “Groundwater/surface water interactions have not been studied in the transportation corridor or at port sites.”1065 This lack of data means the Corps cannot fully analyze the impacts to surface water under the various transportation and port alternatives and thus cannot fully disclose those impacts to the public for meaningful review. The Corps also notes that “There is limited information on surface water hydrology in project component areas outside the mine site.”1066 These gaps must be filled, and the Draft EIS revised to fully analyze the impacts to surface water, and reissued for public review and comment.

6. **Groundwater Hydrology**

As BBNC stated in our scoping comment letter, the Corps “must address impacts to groundwater and aquifers from all proposed Pebble project components and during construction, operation, and closure phases.”1067 As discussed in Section IV.G. above and are incorporated by reference here, the proposed Pebble Mine Project, both in the 20 and 78 year configurations present issues to groundwater hydrology that are inadequately assessed in the Draft EIS. Moreover, the BBWA and the expert reports included in the attached Appendix E, pages 1048 to 1377 presents the best available science on the groundwater impacts from mining the Pebble deposit and should but used to inform the Draft EIS.

Finally, the lack of groundwater baseline data impedes the public’s review and needs to be corrected for the document to comply with NEPA. For example, the Draft EIS admits that “Groundwater/surface water interactions have not been studied in the transportation corridor or at port sites.”1068 This lack of data means the Corps cannot fully analyze the impacts to groundwater under the various transportation and port alternatives and thus cannot fully disclose those impacts to the public for meaningful review. The Corps also notes that PLP’s groundwater model is incomplete and therefore “predictions presented above may be subject to significant uncertainty, due in part to uncertainties associated with the input from the groundwater module.”1069 These gaps must be filled, and the Draft EIS revised to fully analyze the impacts to groundwater, and reissued for public review and comment.

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1066 RFI 118, Surface Water Hydrology (sent to PLP on March 1, 2019, response requested by Aug. 1, 2019).
1067 See attached Appx. F, BBNC Scoping Letter, App. B.
1069 Draft EIS, at page 4.17-6.
7. Water Quality

As BBNC stated in our scoping comment letter, the Corps “must address impacts to surface water, groundwater, and benthic sediment from all proposed Pebble project components and during construction, operation, and closure phases. Includes impacts to marine waters and Lake Iliamna.”

PLP is proposing to treat by far the highest amount of water at any mine in Alaska, and indeed likely the world. The proposed combined treatment at the two proposed Pebble WTPs is 20,600 gallons per minute. According to PLP’s contractors, this rate of treatment is between 4 to 13 times the amount of other mines in Alaska. In addition, according to PLP’s own consultants “high-capacity WTPs [such as the one proposed] are in use around the world, albeit not in the mining industry.” The Draft EIS admits that water quality exceedances are possible at point sources from WTPs.

As noted by the Corps, PLP’s proposal will consist of water that must be treated for “elevated levels of aluminum, arsenic, beryllium, cadmium, copper, lead, manganese, mercury, molybdenum, nickel, selenium (a metalloid), silver, and zinc in exceedance of the most stringent WQC.”

As noted by EPA in its NEPA scoping letter to the Corps: “Water quality is one of the EPA’s principal concerns at mine facilities due to the potential for acid generating and metal-leaching waste materials (ore, waste rock, tailings, pit walls) that are exposed to the environment and require management over long periods of time. In addition, road construction and operation have the potential to contribute a significant quantity of sediment to streams.”

In particular, EPA was concerned that “mercury and selenium discharges would exceed water quality standards at closure.”

“The Draft EIS shows that discharge water quality is predicted to exceed water quality criteria for mercury and selenium. Because of these exceedances, water quality predictions are shown to exceed WQS for Hg in several instances.”

1070 See attached Appx. F, BBNC Scoping Letter, App. B.
1071 HDR, Pebble Project Water Treatment Process – Benchmark Update (Dec. 6, 2017), page 1.
1072 Id.
1074 Draft EIS at page 4.18-5 (“over the life of the mine, it is possible that APDES permit conditions may be exceeded for various reasons (e.g., treatment process upset, record-keeping errors) as has happened at other Alaska mines.”).
1075 Draft EIS, Executive Summary page 71.
1076 Letter from EPA to Army Corps (June 29, 2019), Enclosure 1 at page 9.
1077 Pebble Project Comment Response Matrix, EPA Comments on Preliminary Draft EIS, Section 4.18, comment no. 72.
1078 Pebble Project Comment Response Matrix, EPA Comments on Preliminary Draft EIS, Section 3.18, comment no. 10.
exceedances, the conclusion that the WTP processes are expected to be effective is not accurate.”

Our detailed concerns with water treatment and water quality predictions and data gaps in the Draft EIS are presented in Section IV.G.4. above and are incorporated by reference here. The Draft EIS must be revised to consider concerns regarding insufficient information about PLP’s capture and treatment plans and especially with respect to mercury, selenium, and temperature both with the 20-year and 78-year mine plans.

8. Air Quality

As BBNC stated in our scoping comment letter, the Corps “must address impacts to air quality (pollutants, visibility, greenhouse gases, etc) from all proposed Pebble project components and during construction, operation, and closure phases” including “impacts from transporting ore and materials to and from the mine site, shipping ore, powerplant emissions, and fugitive dust.” PLP has not yet applied for permits under the Clean Air Act. Nevertheless, in the NEPA context, the Corps must take a “hard look” at air quality impacts in the present Draft EIS document and cannot simply rely on future state air quality permitting. As described here, the Corps has failed to take a hard look at air quality impacts, including but not limited to impacts from (1) four specific and significant stationary sources entirely ignored in the Draft EIS; (2) mobile sources; and (3) fugitive dust.

Stationary Sources Ignored. Four significant stationary sources of hazardous and other air pollutants are entirely ignored in the Draft EIS: (1) a 270 megawatt (MW) power plant; (2) diesel generators; (3) a waste incinerator; and (4) two laboratories. Since the proposed Pebble project will utilize these facilities and equipment, the direct, indirect, and cumulative impacts of these known air pollution sources must be analyzed and described in the Draft EIS. The Draft EIS must evaluate potential emissions from these sources over the entire life of the mine as well as the extent to which proposed pollution controls for each source would limit impacts on the human environment.

The proposed Pebble project includes the construction of a large gas-fired 270 MW power

1079 Pebble Project Comment Response Matrix, EPA Comments on Preliminary Draft EIS, Section 4.18, comment no. 31.
1080 See attached Appx. F, BBNC Scoping Letter, App. B.
1081 Great Basin Resource Watch v. BLM, 844 F.3d 1095, 1103-04 (9th Cir. 2016) (“Eureka Moly argues that the FEIS’ air impacts analysis is nonetheless adequate because it relies in part on the fact that the NDEP’s Bureau of Air Pollution Control issued a Clean Air Act permit for the Project. This argument evinces a misunderstanding of the nature of NEPA and its relationship to ‘substantive’ environmental laws such as the Clean Air Act. See S. Fork Band Council of W. Shoshone of Nev. v. U.S. Dep’t of Interior, 588 F.3d 718, 726 (9th Cir. 2009) (per curiam) (holding that a failure to discuss mercury emissions from a nearby mining facility in an EIS was not excused by the fact that the facility ‘operate[d] pursuant to a state permit under the Clean Air Act,’ because ‘[a] non-NEPA document ... cannot satisfy a federal agency’s obligations under NEPA’). The failure to explain the zero baseline assumption frustrated the BLM’s ability to take a ‘hard look’ at air impacts, and the reference to the Project’s Clean Air Act permit did nothing to fix that error.”).
plant, which will cover 22 acres at the mine site, plus associated distribution infrastructure.\textsuperscript{1082} This is the only proposal presented with respect to power generation, and it is included in all of the action alternatives.\textsuperscript{1083} It is described in a few paragraphs in the Project Description,\textsuperscript{1084} but nowhere in the Draft EIS. For perspective, this is larger than the major power plants recently constructed to serve Anchorage (200 MW, construction cost $359 million\textsuperscript{1085}) and the Mat-Su (171 MW, construction cost $324 million\textsuperscript{1086}). Although the power plant will be the largest source of potential air pollutant emissions among the project components, it is mentioned in passing only three times in the Draft EIS environmental consequences section relating to air quality.\textsuperscript{1087} Its emissions appear to have been lumped into the modeling and discussion concerning overall mine site air emissions and air quality impacts, but this is not a substitute for stand-alone discussions of power generation, potential alternatives to the existing power plant proposal (e.g., smaller and larger power plants, different types of power plants, combined heat and power, renewable generation facilities), as well as their associated emissions, health and environmental impacts, and potential emission control and mitigation measures. The Corps appears to be relying on future state permitting to analyze the proposed power plant and its air quality impacts, but the failure to adequately address these issues in the Draft EIS represents yet another gross violation of NEPA.

Before the power plant is constructed and as backup thereafter, the proposed project will rely on diesel generators for power supply for personnel camps and initial construction of the ports, ferry terminals, powerplant, pipeline, road, facility buildings, etc.\textsuperscript{1088} However, the Draft EIS fails to describe the locations and capacities of these generators and completely fails to describe their potential air emissions. As DEC noted to the Corps, “since the construction phase will take at least three years before natural gas could be used to generate power,” the impacts are more than temporary and should be described in the Draft EIS.\textsuperscript{1089} However, the Draft EIS fails to include a single mention of emissions from diesel generators during initial construction. The Draft EIS must disclose air emissions impacts these diesel generators, including the location, capacity, duration, and predicted emissions from each source.

The proposed Pebble Mine Project will also use an incinerator “constructed and operated at

\textsuperscript{1082} Draft EIS, at 2-29, 2-66.
\textsuperscript{1083} See Draft EIS, at ES-6, -8, -43 and 2-12, -13, -29.
\textsuperscript{1084} Project Description, at 42 (Dec. 2018).
\textsuperscript{1086} See https://www.adn.com/energy/slideshow/photos-mea-flips-switch-co-ops-first-power-plant/2015/05/11/.
\textsuperscript{1087} See Draft EIS, Ch. 4-20.
\textsuperscript{1088} Draft EIS, at page 2-66; Project Description, at 42 (Dec. 2018).
\textsuperscript{1089} State of Alaska, Consolidated State Agency Comments on Preliminary Draft EIS, First Set (submitted Nov. 21, 2018), comment number 17.
the mine site for domestic waste handling.”1090 Along with domestic waste, the incinerator will be used for “wood pallets and packaging” and “putrescible wastes.”1091 The Draft EIS fails to include any information regarding the air quality impacts of an incinerator capable of handling domestic waste for 2,000 individuals as well as other wastes.

Additionally, the proposed project will have two laboratories – a metallurgical laboratory and an assay laboratory – that would operate at the mine site during the operations phase and handle many types of chemical wastes.1092 DEC explicitly pointed out that the Draft EIS “discussion of laboratories does not include any details on the potential for toxic air emissions from laboratory operations” but that “operations in the laboratories [] could result in toxic emissions, such as mercury,” noting “other large mine projects have included those emissions.”1093 DEC requested this information be disclosed in the Draft EIS, but the Corps ignored this request. The Draft EIS contains no discussion of emissions from the proposed laboratory operations.

Mobile Sources. In general, the Draft EIS’s treatment of mobile sources appears inadequate and nontransparent. While there is extensive information about the quantity of mobile source emissions in the Draft EIS and supporting materials, more this information should be included in the Draft EIS itself, rather than being buried in appendices and RFI responses.

The main problem is the analysis of the impacts of the mobile source emissions. The Corps conducts piecemeal modeling encompassing certain project components, but not others, with a strong emphasis on stationary sources. Modeling may not be the only appropriate way to analyze impacts. A “qualitative” or “proxy” approach could theoretically work where modeling is not feasible, but the Draft EIS and supporting appendices just vaguely mention that these approaches were used and do not give much information about how such analyses were done or what the impacts were determined to be.

This lack of analysis and reliance on qualitative and proxy approaches rather than comprehensive modeling results in misleading key conclusions. For example, with respect to mine site operations, the Draft EIS concludes that “maximum impacts are less than 55 percent” of applicable ambient air quality standards and “less than 90 percent of the PSD Class II increments.”1094 These appear to be true statements with respect to stationary and fugitive emissions, which are generally included under DEC modeling procedures. The

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1090 Draft EIS, at page 4.23-11.
1091 Draft EIS, Executive Summary at page 8 and page 2-38.
1092 Draft EIS, at page 2-30.
1093 State of Alaska, Consolidated State Agency Comments on Preliminary Draft EIS, First Set (submitted Nov. 21, 2018), comment number 11.
1094 Draft EIS, page 4.20-6. Note that the Draft EIS fails to specify which pollutants the figures apply to, and a casual reader might take that to mean there is some sort of single overarching standard for all air pollutants, which there is not. In the appendix, it is more clear that the 55% refers to the NOx 1-hour ambient standard, and the 90% refers to the PM10 and PM2.5 24-hour standards.
Draft EIS does not make it clear that mobile source emissions are being excluded (as called for in DEC modeling procedures\textsuperscript{1095}). This can only be determined by scrutinizing the appendices and ADEC’s actual modeling procedures, which are not included anywhere. Moreover, the Draft EIS conclusions are placed directly below tables summarizing both stationary/fugitive and mobile source emissions, strongly implying that the conclusions are based on the total emissions, not just stationary/fugitive emissions. The difference is major. With respect to mine site operation NOx emissions, for instance, stationary/fugitive emissions account for only 114 tons per year, while mobile source emissions account for 4,321 tons per year (a figure about 38 times higher). So, if 114 tons correlates to about 55% of the ambient standard and the relationship is more or less linear, the total emissions (including mobile sources) might correlate to roughly 2,085% of the ambient standard. A figure like that would paint a very different picture in terms of the health and environmental impacts of NOx emissions associated with mine site operations (NOx is a key precursor to ozone/smog, fine particulates, and acid rain).

Moreover, the Draft EIS’s conclusions are misleading because they compare certain project component emissions to the ambient standards separately and leave out others entirely. The example above (potentially 2,085% of the NOx ambient standard) relates only to mine site operation. A meaningful comparison to the ambient standards would require a comprehensive tally—including all emissions (stationary, fugitive, and mobile) and all project components (mine site, port, pipeline, transportation corridor, power plant, etc.)—for each pollutant (NOx, CO, PM, etc.).

**Fugitive Dust.** The Draft EIS greatly underestimates and fails to analyze the effects of fugitive dust originating from the road system, construction sides, mine waste, and any areas of disturbed vegetation that remain after the project.\textsuperscript{1096} Dispersion distances of dust are grossly underestimated; dust can travel and carry pollutants over very long distances that cross drainage divides (even continents), especially when it originates on land surfaces like these that lack tall forest cover to filter dust from the air once winds mobilize it.\textsuperscript{1097} The Draft EIS lacks any discussion or analysis of transport of hydrocarbons and other toxins on road dust into the surrounding environment (only a handful of metals are considered at all).\textsuperscript{1098} The document suggests dust may be controlled by spreading water and chemical agents on roads and bare soils; however such dust abatement practices require huge amounts of water, and they simply redistribute toxins from the air into the water that runs off of the road system and bleeds continuously into adjacent vegetation and waterways.\textsuperscript{1099} Critical


\textsuperscript{1097} Id.

\textsuperscript{1098} Id.

\textsuperscript{1099} Id.
information is also missing from the Draft EIS and found only in the RFIs. For example, in order to find the estimated volume of road dust, the reader must track down tables within appendices of an RFI (Appendix A Tables 1a and 1b of RFI 007 have the road construction dust and Appendix B Table 1b of RFI 007 has the annual dust from the road system). This type of information must be presented in the Draft EIS itself.

9. Noise and Vibration

As BBNC stated in our scoping comment letter, the Corps “must address impacts on the natural environment and use of the area from noises and vibration during construction and operation, including construction and blasting of the mine facilities and transportation corridor and port, mine operations and rock extracting, powerplant, transportation, etc.”

The Draft EIS states that “Noise impacts would be limited to approximately 2 to 3 miles from construction activity, with the exception of helicopter support which would have further reaching effects.” However, the Draft EIS fails to describe and quantify the level of helicopter use proposed during construction, operation, and closure of the mine. The State of Alaska requested the Corps include helicopter operations numbers and analysis of noise impacts in the Draft EIS, “so that the reader can understand potential noise impacts,” and yet the Corps failed to do so. The Draft EIS should be revised to account for and analyze this impact.

The Draft EIS should be revised to account for noise and vibration from expanded exploration activities in active and currently abandoned mineral claims adjacent to and surround PLP’s claims, as expanded exploration activities are reasonably foreseeable.

10. Vegetation

As BBNC stated in our scoping comment letter, the Corps “must address impacts to vegetation (including removal), rare and sensitive plants, and impacts from invasive plants and climate change from all proposed Pebble project components and during construction, operation, and closure phases.” The Draft EIS fails entirely to describe the affected environment with respect to current vegetation in the project area and the three transportation corridor Action Alternatives. While many Draft EIS deficiencies flow from the failure to include baseline information on vegetation, BBNC notes below one issue of particular importance – the failure of the Draft EIS to account for the project’s impacts to lichen and the cascading impacts that would have on caribou herds in the Bristol Bay region, an important subsistence food.

\[1100\] See attached Appx. F, BBNC Scoping Letter, App. B.

\[1101\] Draft EIS, at page 4.5-10.

\[1102\] State of Alaska, Consolidated State Agency Comments on Preliminary Draft EIS, First Set (submitted Nov. 21, 2018), comment number 19.

\[1103\] See discussion at infra Section II.C.2.

\[1104\] See attached Appx. F, BBNC Scoping Letter, App. B.
**Lack of Adequate Baseline Data.** Currently, the Draft EIS and PLP’s permit application lack vegetation field surveys and mapping throughout the proposed project area. The Draft EIS explicitly notes the data gap, stating “the FEIS would provide precise information of the type of wetlands and vegetation that would be impacted by the project and how those impacts vary among the alternatives and variants. . . . All action alternatives and variants would require wetland and vegetation mapping prior to the FEIS.” Moreover, according to the third party EIS contractor “The final EIS will need to precisely disclose the amount and type of wetlands and other waters and vegetation that would be impacted by the project and how those impacts vary among the alternatives and variants.” However, PLP is not required to fill this data gap until August 15, 2019, well after the close of the Draft EIS comment period. Moreover, based on our review of PLP’s field plans for summer 2019, this work is not scheduled to be conducted.

Waiting until the Final EIS to disclose such information is not sufficient for purposes of NEPA’s public review requirements. Indeed, the Draft EIS notes the direct adverse impacts from the project includes the excavation and removal of natural vegetation. The public must be afforded this data and how it impacts each alternative under consideration at the Draft EIS stage, the only opportunity the public will have to comment to the agency regarding this issue.

**Impacts to Lichen and Cascading Impacts to Caribou.** Dwarf ericaceous shrub lichen tundra is one of the dominant vegetation types found in the project area and transportation corridor. Healthy caribou populations are dependent on abundant and healthy lichen populations. In government to government consultation meetings and in public testimony, the Corps heard concerns from the Bristol Bay region about impacts to caribou and lichen, noting that “Caribou are coming back to the area, the lichen crop is robust” and “changes in the caribou and moose migration patterns due to disturbances associated with the Pebble mine exploratory activities conducted over the last decade.” Despite this acknowledgement and concern, the Draft EIS has failed to account for the impacts of the proposed project to lichen and the cascading impacts to caribou populations from decreases in lichen. In particular, the Draft EIS fails to account for impacts to air quality from dust and sulfur dioxide deposition to lichen, and the resulting impacts to caribou and subsistence hunter food contamination and decreases in caribou populations. The unique biology of lichen and their susceptibility to air quality impacts must be addressed in the EIS.

1105 Draft EIS, page 3.1-10.
1106 RFI 116.
1107 RFI 116.
1108 See supra Section V.F.3.
1109 Draft EIS, page 4.22-3.
1110 BBWA at page 7-30.
1111 Draft EIS, Appendix K3.1-7.
The Draft EIS admits that impacts associated with dust from the project deposited on vegetation may include “Decreases in sphagnum and other mosses and lichens.” And as noted in the paper on fugitive dust emissions from Zamzow et al, “Dust may accumulate over many years on vegetation, blocking stomata and reducing growth regardless of whether it contains contaminants. […] The effects described in the DEIS include the reduced ability of plants to thrive (burial, reduced photosynthesis, decrease in nutrients, decrease in soil moisture, decrease in moss and lichens).”

In addition to impacts from dust, the Draft EIS admits that lichen is particularly susceptible to sulfur dioxide deposition, noting that DEC recommends a more stringent standard to protect lichens, “for some species of lichens, which can be particularly sensitive to SO2, ADEC (2016b) recommends supplementing these standards with an annual SO2 threshold of 13 mg/m3, which is more stringent than the annual SO2 AAAQS.” Despite noting this susceptibility, the Draft EIS fails to analyze the impacts of sulfur dioxide deposition on lichens within the project area. Instead, the Corps refused, without justification or analysis, to model sulfur dioxide emissions at the mine site because “it is unlikely (i.e., less than 50 percent probable) that the SO2 emissions from the mine site operations would be large enough to contribute to sulfur deposition impacts.” While noting that it did not conduct modeling, the Corps then concludes that “the analysis still shows the magnitude of impacts to be equal to the lowest critical-load value for lichens and the bryophytes ecosystem.”

The Draft EIS presents no quantification of potential impacts to lichen from dust and sulfur dioxide deposition, despite noting the likelihood of these impacts, and there’s no discussion of the impacts to caribou flowing from decreases in lichens. The Draft EIS must be revised to conduct modeling of impacts from dust and sulfur dioxide to lichens and analyze the impacts of reduced or contamination lichen on caribou populations and subsistence meat.

11. Wetlands

As BBNC stated in our scoping comment letter, the Corps “must address direct filling of more than 4,000 acres of wetlands, destruction of wetlands from dewatering and hydrological changes, pollution to wetlands, impacts on wetlands functions, clearing and removal of wetland vegetation, degrading wetland vegetation and soils, etc. from all proposed Pebble project components and during construction, operation, and closure phases.”

1116 Id.
1117 See attached Appx. F, BBNC Scoping Letter, App. B.
The Draft EIS admits that adequate wetlands data is missing, noting that the wetlands data in
the Draft EIS is not verified by field work, and is inadequate to make a 404 permit
decision.1118 This echoes the Corps’ position since 2009, described in Section IV.H.2 above,
that PLP’s outdated wetlands delineation methods are insufficient for CWA compliance. A
more lengthy discussion of PLP’s missing wetlands data is contained in Section IV.H.2
above and in multiple technical reports authored by Yocom and attached in Appendix E to
these comments. Also relevant to wetlands, the Corps has refused to require PLP to conduct
a wetland and streams functional assessment to describe the functions lost by project
impacts. As EPA noted, a functional assessment is an important document for analysis of
impacts under NEPA, “We recommend that the functional analysis be completed prior to the
DEIS, so that it may be summarized in the body of the document and attached as an
appendix.”1119

By failing to include adequate wetlands data in the Draft EIS, the Corps cannot comply with
NEPA’s requirement that the information provide the public with enough details to make a
reasoned choice among alternatives. Moreover, the Corps cannot do what it is proposing to
do here—include the adequate wetlands data in a Final EIS and not provide the public an
opportunity to review the data and impacts to wetlands—as this proposed workaround to
PLP’s data gaps is a violation of NEPA. Indeed, NEPA mandates that agencies cannot wait
until the Final EIS stage to disclose such information, as doing so “frustrat[es] NEPA’s goal
of allowing the public the opportunity to ‘play a role in ... the decisionmaking process.’”1120

12. Wildlife

As BBNC stated in our scoping comment letter, the Corps “must address impacts to
mammals, birds, marine mammals, big game species from habitat destruction and loss,
behavioral disturbance, accidental environmental damage, fragmenting of habitats, exposure
to contaminated water and dust, exposure to noise, transportation collisions from all
proposed Pebble project components and during construction, operation, and closure
phases.”1121

Impacts to Caribou. The Corps should analyze the unique biology of lichens and how
contaminants would be absorbed by lichens and enter the subsistence food chain from lichen
through caribou to people. The Corps should require baseline sampling and analyzing lichen in
the vicinity of mine and likely direction of fugitive dust to establish air quality baselines, as has
been done elsewhere in Alaska to establish lichen baseline conditions.1122

1118 Draft EIS, at page 3.1-10.
1119 EPA Cooperating Agency Review Comments, Pebble Project EIS Preliminary Draft Chapter 3 (July 5, 2018).
1120 Great Basin Resource Watch v. BLM, 844 F.3d 1095 (2016), citing Robertson v. Methow Valley Citizens
1121 See attached Appx. F, BBNC Scoping Letter, App. B.
1122 Lichen-Air Quality Pilot Study for Klondike Gold Rush National Historical Park and the City of Skagway,
Alaska (December 2000).
Impacts to Birds. The Draft EIS fails to fully account for impacts to birds, especially with respect to fugitive dust emissions, selenium levels, mercury levels, and blasting noises and avoidance of previous habitat. In addition, USFWS noted that surveys for presence and absence of birds and eagles still needs to occur along the southern transportation corridor.

Impacts to Bears. The Draft EIS fails to fully account for impacts to bears, especially along the southern transportation corridor adjacent to McNeil River. The Corps should review the papers by Suring and Dawson, attached to this comment letter at Appendix E, pages 1976 to 2038, and revise the Draft EIS accordingly.1123

13. Fish and Aquatic Resources

As BBNC stated in our scoping comment letter, the Corps “must address impacts such as destruction of approximately 20 miles of streams and 4,000 acres of connected wetlands, construction of more than 200 culverts impacting fish passage, long-term contamination from mine effluent and dust deposition in water, accidental spills and tailings dam failures, pipeline failures, impacts to fish, macroinvertebrates, water quality, destruction of aquatic and riparian habitat, increased erosion and sedimentation, etc.”1124 The Corps has failed to take a hard look at the project’s impacts to fish and aquatic resources, but failing to include the best available science, adequate baseline surveys, scientifically-defensible habitat modeling, and a full account of the water quality and quantity impacts to fish and aquatic resources. The Corps must correct these issues in the Draft EIS and reissue a revised EIS for public review.

Data Quality—Best Available Science is the BBWA. As an initial matter, the Draft EIS fails to use the best available science related to the impacts of copper-porphyry mining on salmonids and aquatic resources. Undoubtedly, the best available science on this topic is compiled in the EPA BBWA. The BBWA went through two rounds of peer review and two rounds of public scrutiny. The EPA compiled more than 700 reference documents on topics related to mining the Pebble deposit in Bristol Bay1125 and also developed additional peer-reviewed appendices on topics related to fish and aquatic resources and impacts to these resources, such as “Fishery Resources of the Bristol Bay Region,” “Non-Salmon Freshwater Fishes of the Nushagak and Kvichak River Drainages,” “Ecological Knowledge and Cultures of the Nushagak and Kvichak Watersheds,” “Bristol Bay Wild Salmon Ecosystem: Baseline Levels of Economic Activity and Values,” “Biological Characterization: Bristol Bay Ecosystem Marine Estuarine Processes, Fish, and Marine Mammal Assemblages,” and “Compensatory Mitigation and Large-Scale Hardrock Mining in the Bristol Bay Watershed.” The Draft EIS ignores the BBWA, its appendices, and its more than 700 compiled resources.


1124 See attached Appx. F, BBNC Scoping Letter, App. B.

1125 https://pebblewatch.com/source-documents/
The Draft EIS has a mere 42 references in common with the BBWA, indicative of the Corps turning their head away from the best available science on this issue.

Data Quality—Baseline Data. PLP has collected nearly no data on its proposed southern transportation corridor. Because of this, ADF&G requested that the Draft EIS disclose that fish surveys would be happening in summer 2019. However, PLP’s current summer 2019 field surveys fail to contain fish surveys of any kind. Basic assumptions of project design (such as the number of fish passage culverts), estimates of impacts to anadromous fish habitat, and appropriate mitigation measures to avoid impacts cannot be made without this baseline data. The Corps thus cannot take a hard look at project impacts. The Corps must require PLP to provide this data and revise the Draft EIS accordingly, and then reissue the Draft EIS for public comment.

Data Quality—PHABSIM Instream Flow Model. PLP utilizes the Physical Habitat Simulation (PHABSIM) model to evaluate fish habitat in the project area. PLP’s use of PHABSIM to predict impacts to fish habitat based on flow hydraulics is flawed. In a report prepared by Dr. Gordon Reeves, doctoral candidate Sarah O’Neal and Molly Welker, the authors reviewed the PHABSIM model and its application for the Pebble project. These experts identify the challenges with PHABSIM, noting it describe[s rivers] as single-thread systems despite the frequent occurrence of wetland complexes, floodplains, beaver ponds, areas of surface and groundwater exchange, and off-channel habitats throughout the Pebble project area. This complexity—which is essential to the overall sustainability fisheries—is not captured in instream habitat classification.

PHABSIM is now largely regarded as poor science for two reasons: (1) it “no longer conforms to standard practices in the wider fields of ecological and wildlife modeling, especially by using inappropriate spatial scales and outdated methods for modeling habitat

1126 Id.
1127 ADF&G, Pebble Project EIS Consolidated Comments Table, p. 17 (Additional surveys should be conducted in 2019...").
1129 Draft EIS, Appendix I—Draft Essential Fish Habitat Assessment (Jan. 2019), at page 73. See also, attached Appendix E, at pages 614 to 634, Reeves, Gordon, S. O’Neal and M. Welker, June 18, 2019, Limitations of the PHABSIM Model to Evaluate Impacts to Fish Habitat near the Pebble Mine (Reeves, et al., 2019).
1131 See attached Appendix E, at pages 614 to 634, Reeves et al., Limitations of the PHABSIM Model to Evaluate Impacts to Fish Habitat near the Pebble Mine (June 24, 2019).
preference and by producing output that lacks clear meaning” and (2) habitat selection models “in general, are not well suited for many instream flow decisions.”

To effectively assess impacts to fish habitat, the Corps must reject PLP’s PHABSIM model and require PLP to select more scientifically-defensible methodologies for analyzing impacts to fish and aquatic resource habitat. The Draft EIS fails to take a hard look at the impacts of this project on fish habitat by forgoing more modern, ecologically robust methods of characterizing habitat selection.

**Mine Site Habitat Loss Impacts.** The mine site would result in more than 8 miles of anadromous streams directly filled, plus more than 3,500 connected wetlands would be permanent destroyed and water drawdown will further fragment and reduce salmonid and aquatic habitat. The resulting impacts of this habitat destruction is not fully described in the Draft EIS. We point the Corps to the work done by Schindler, O’Neal, Woody, Wobus, Brennan, Frissell, Hovel, and Reeves, attached to this comment letter in Appendix E, pages 430 to 1047 for the best available data and science related to the cascading impacts that mine site habitat loss will have on the headwaters of Bristol Bay.

**Water Quality Impacts to Habitat and Salmonids.** As noted in the Draft EIS, contact water (defined as surface water or ground water that has contacted mining infrastructure) influent into PLP’s water treatment facilities “would contain elevated levels of aluminum, arsenic, beryllium, cadmium, copper, lead, manganese, mercury, molybdenum, nickel, selenium (a metalloid), silver, and zinc in exceedance of the most stringent WQC.” To comply with NEPA, the Corps must analyze the impacts of each of these metals on salmonids, resident fish, aquatic resources, and the aquatic food web. Indeed, as noted by USFWS in comments prior to the Draft EIS:

> Certain metals that are essential to fish health at low concentrations may become toxic with relatively small increases in concentration; such metals include copper (Cu), zinc (Zn), selenium (Se), and molybdenum (Mo). Copper is specifically toxic to anadromous salmon. These same metals have a narrow window of non-toxicity before becoming toxic. Non-essential metals are more likely to be toxic even at low concentrations (e.g., gold (Au), lead (Pb), arsenic (As) and mercury (Hg)). Please analyze the environmental consequences from point and non-point process discharges, for different species and at different scales.

Thus there are an array of potential water quality impacts associated with mining the Pebble deposit that must be disclosed and analyzed in the Draft EIS. Here, we will focus on three impacts that are explicitly ignored, despite their potential to harm fish and aquatic resources.

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1133 Draft EIS, Executive Summary, and page 71.

First, the Draft EIS does not consider the impact of selenium on salmonid and resident fish populations, on food web and zooplankton, and on aquatic resources. Given the known rock chemistry at the site, the proposed Pebble Mine Project will undoubtedly have high levels of selenium in contact water that must be treated prior to discharge. Indeed, as noted by EPA when discussing water treatment of selenium that “could build up over time in the pyritic TSF,” in the agency’s opinion, “this concern is likely to occur.” EPA concluded based on its review of PLP’s permit application and water treatment plans that, because of elevated selenium in the rock, “discharge water quality is predicted to exceed water quality criteria for mercury and selenium.” Moreover, as related to closure, EPA recommended that the Draft EIS “disclose that mercury and selenium discharges would exceed water quality standards [and] … that the magnitude of these exceedances be disclosed, including the geographical extent downstream, and the duration of the impact.”

Selenium is difficult to treat at the high volumes that would be required for the proposed Pebble Mine Project to meet water quality standards. The Draft EIS notes that modeling results indicate that concentrations of selenium exceeding Alaska water quality standards would be found in both the bulk tailings supernatant and pyritic supernatant. Indeed, a recent analysis by Zamzow et al. based on PLP’s proposal indicates that the proposed Pebble Mine Project will release selenium at concentrations that exceed state water quality criteria and may exert ecotoxic effects during mine operation and have a high probability of exerting ecotoxic effects after closure. Moreover, EPA has noted the high water treatment plant flow rate and difficulty with biological selenium removal at high rates:

The WTP#2 flow rate is very high […] for a biological system that requires a specific range (dependent on concentration of Se) of Eh and pH to facilitate formation of elemental Se and to not produce selenide (which is mobile and toxic) or to not be reducing enough and produce selenite (also mobile and more toxic to aquatic organisms than selenate). More detail on the flow and selenium concentration to be treated is needed to be able to assess if biological Se removal is feasible and whether alternative selenium treatment options should be developed.

1135 Comment Response Matrix, EPA Comments on Pebble Preliminary Draft EIS, Section 4.18, comment no. 17, at page 9.
1136 Comment Response Matrix, EPA Comments on Pebble Preliminary Draft EIS, Section 4.18, comment no. 31, at page 14.
1137 Comment Response Matrix, EPA Comments on Pebble Preliminary Draft EIS, Section 4.18, comment no. 72, at page 30.
1139 Draft EIS at pages 4.27-63 to 64.
The Draft EIS does not fully evaluate the risk associated with uncaptured selenium discharges. The Draft EIS acknowledges that selenium bioaccumulates in aquatic habitats but fails to address the impacts of selenium to fish. The Draft EIS should be revised to analyze the potential impact of selenium on fish populations.

Second, the Draft EIS contains no acknowledgement or analysis of the impacts of copper in fugitive dust on aquatic life. This is potentially a major and long-lasting environmental consequence that has been ignored. The Proposed Pebble Mine Project would generate thousands of tons of fugitive dust annually, both from the mine site and the transportation corridor. Given the nature of the Pebble deposit, dust from the mine site will be laden with copper and other heavy metals. Meanwhile, dust from the road would likely contain aromatic hydrocarbons, salts, trace elements, and metals all impacting aquatic life and fish (however, this is not disclosed in the Draft EIS, as PLP has failed to survey the geochemistry of its road building materials). However, the Draft EIS failed to analyze the full impact of dust on receiving waters by using only a 300-foot zone of influence. This is inadequate to assess the amount of fugitive dust that will impact receiving waters. In addition, the Draft EIS analysis of impacts to fish and aquatic life from fugitive dust is inadequate and lacking the necessary baseline data, as PLP has conducted no geotechnical field work for materials sites proposed to be used to construct the mine access road. The Corps must obtain this information from PLP and revise the Draft EIS accordingly and re-issue it for public review and comment.

Third, the Draft EIS fails to analyze the potential impacts of the proposed Pebble Mine Project on surface and ground water temperatures and the cascading impacts of this to salmon and resident fish populations. As noted above, selenium treatment will be a major engineering feat at the mine site and will require massive amounts of biological removal to treat the more than 20,000 gallons per minute at two separate treatment facilities. The findings in a recent analysis by Zamzow et al. based on PLP’s proposal indicates that selenium treatment will result in water temperature effluent increases above natural temperatures. Discharging effluent at higher than ambient temperatures has not been

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1142 See Draft EIS at page 4.27-124.
1143 RFI 007, see also attached Appx. E, at page 584, Frissell & O’Neal, Direct and cumulative impacts of road system fugitive dust in the Pebble Project Draft EIS (rev. June 16, 2019).
1145 Draft EIS at page 3.22-1.
properly evaluated in the Draft EIS and has the potential adverse impacts to fisheries downstream.\textsuperscript{1148}

Moreover, as noted by EPA in the BBWA, “[s]tream and wetland water temperatures could be affected by the capture, storage, use, treatment, and discharge of water throughout the mining process.”\textsuperscript{1149} The BBWA found that the headwaters of the South and North Fork Koktli watershed and the associated groundwater upwelling contain longitudinal temperature profiles that include “significant summer cooling and winter warming” that can “be an important attribute of stream systems” by contributing to important salmon spawning and rearing habitat.\textsuperscript{1150}

The Draft EIS must also disclose water temperature increases and their impacts associated with ancillary infrastructure, such as the road corridor due to changes and reduction in vegetation, dredging and filling of floodplains and wetlands for road construction and materials sites, and heated water effluent from the natural gas powerplant.

The Draft EIS must analyze the impacts of selenium treatment, as well as the mine’s proposed capture, storage, use, treatment, and discharge of water through the mining process on surface and ground water temperatures. The Draft EIS must analyze and disclose how water temperature impacts will have a cascading impact to salmon and resident fish population and their habitats and the aquatic food web.

\textbf{Transportation Corridor Impacts.} As an initial matter, the Draft EIS outright fails to utilize the best available information related to transportation corridor impacts on anadromous waters in Bristol Bay – the EPA Bristol Bay Watershed Assessment. The EPA’s document closely analyzed the impacts of the northern transportation corridor (Draft EIS Action Alternatives 2 and 3 and the Expanded Development Scenario) in nearly precisely the same alignment as proposed in those alternatives,\textsuperscript{1151} and yet it is ignored by the Corps. The Corps should take the detailed analysis conducted by the EPA, apply it to Action Alternatives 2 and 3, and conduct the same analysis for Alternative 1. This would assist the public to understand the differences between each alternative and the anticipated direct, indirect, and cumulative impacts on fish and aquatic resources relative to each alternative.

The Draft EIS lacks any discussion or analysis of the effects of the numerous known toxic constituents that occur in road runoff, including aromatic hydrocarbons and metals beyond those native to the Pebble deposits.\textsuperscript{1152} The effects of the roads and intensive vehicle traffic

\textsuperscript{1148} See attached Appx. E, at page 47, Schweisberg, Matthew, Compliance with Section 230.10(c) of the 404(b)(1) Guidelines, Proposed Pebble Mine Project (June 11, 2019).
\textsuperscript{1149} BBWA at page 6-38.
\textsuperscript{1150} BBWA at page 7-32.
\textsuperscript{1151} BBWA at Chapter 10 and Appendix G.
\textsuperscript{1152} See, e.g., attached Appx. E, at pages 573 to 602, Frissell & O’Neal, Direct and cumulative impacts of road system fugitive dust in the Pebble Project Draft EIS (rev. June 16, 2019).
required during mine construction and operations on wetlands, streams, and fisheries are entirely hidden. Every stream crossing of the road system and every near-road wetland or stream is a potential – in fact extremely likely – point of delivery of polluted runoff from the project.\textsuperscript{1153} Many of these toxins are highly labile and once they reach waterways, can disperse downstream rapidly and over distances of hundreds of miles.\textsuperscript{1154} The toxicity of many of these constituents of road runoff is not well known, but it is highly likely they may exert their maximum adverse effects (possibly even at very low concentrations) in pristine ecosystems and fish populations not previously exposed to such pollutants.\textsuperscript{1155}

**Impacts to Fish in Iliamna Lake.** Barging of mineral concentrate and supplies across Lake Iliamna twice a day will affect key salmon rearing areas in the Lake. A thorough analysis of this key concern is notably lacking in the Draft EIS, especially as related to sustaining the lake food web that supports salmon. The Corps should review the work of Brennan and Hovel regarding the potential impacts to salmon in the lake.\textsuperscript{1156} (brennan, Hovel).

**Fish Population Level Impacts and Inappropriate Threshold Approach.** The Draft EIS fails to fully account for the fish population-level impacts of the proposed Pebble Mine Project. Because the various rivers that feed Bristol Bay are each composed of dynamic mosaics of very productive salmon habitats, the ecosystem contains hundreds of salmon populations that are adapted to local conditions of each habitat. Thus, the ecosystem as a whole operates as a huge portfolio of salmon populations that in total are very resilient to natural environmental variation: if one population lags due to short term reduced productivity owing to flooding, drought or other localized, short-term (interannual) habitat dynamics, other populations in the portfolio will be successful and thereby compensate for the ecosystem as a whole\textsuperscript{1157} (Schindler et al).

Resiliency derives from an entirely intact ecosystem where habitat mosaics and associated salmon stocks naturally shift from place to place annually (natural shifting is not analogous to strip mining which permanently destroys habitat).\textsuperscript{1158} This fundamental attribute of the Bristol Bay salmon ecosystem has been clearly demonstrated by Brennan et al., 2019, as illustrated in the map below depicting shifts in productive habitat over time.

\textsuperscript{1153} Id.
\textsuperscript{1154} Id.
\textsuperscript{1155} Id.
\textsuperscript{1158} Id.
14. Land Ownership, Management, and Use

As BBNC stated in our scoping comment letter, the Corps “must analyze the effects of all project components on non-state surface and subsurface estate owners, particularly Alaska Native Corporations and native allotment land owners.”[1160] In addition, BBNC recommended the Corps “address the proposed mine site and many project components including the port site and a majority of the transportation corridor are proposed on state-owned lands.”[1161] The Corps ignored both of these recommendations and the Draft EIS is vastly inadequate at describing private land ownership, state and local land management, and present land use.

Alaska Native Corporation Lands and Native Allotments. Although BBNC is occasionally mentioned in the narrative of the Draft EIS as a landowner, BBNC is omitted as a landowner from Table 3.2-1 that quantifies the land ownership acreages and from many of the document’s narrative discussions about land ownership and necessary access authorizations. BBNC is the owner of both the surface and subsurface estates of three former Native allotments along the proposed northern two transportation corridors. BBNC is also the owner of the subsurface for all the ANCSA lands underneath the surface estates owned by the region’s village corporations. BBNC’s subsurface estate ownership includes all of the rock, sand and gravel on these lands. The Draft EIS should more accurately reflect and

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1159 Brennan et al., *Shifting habitat mosaics and fish production across river basins*, Science Vol. 364, Issue 6442, pp. 783-786 (May 24, 2019), available at [https://science.sciencemag.org/content/364/6442/783](https://science.sciencemag.org/content/364/6442/783)

1160 See attached Appx. F, BBNC Scoping Letter, App. B.

1161 See attached Appx. F, BBNC Scoping Letter, App. B.
account for BBNC’s land ownership. Furthermore, all subsequent iterations of the EIS must accurately reflect both the property interests owned by BBNC and the fact that the BBNC has not extended and will not extend to PLP any permission to occupy or trespass our lands or to make use of our subsurface resources. For details on what should be included in a revised Draft EIS, see Section II.B. above and Attached Appendix A.

**State and Local Land Management.** Many of the proposed project components are located on state-owned lands and waters designated under the Kenai Area Plan and Bristol Bay Area Plan for uses such as recreation, subsistence, and public recreations and tourism.\(^\text{1162}\)

In addition to failing to account for the state’s management intent of lands and waters as described in Kenai Area Plan and Bristol bay Area Plan, the Draft EIS fails to describe Mineral Closure Order (MCO) 393 and assess the project’s impacts to MCO 393 designated lands and waters. The Draft EIS should be revised to reflect the following facts and should then analyze the impacts of PLP’s proposal on MCO 393 designated lands and waters.

DNR issued MCO 393 in 1984, closing to mineral entry about 214,000 acres of land along the corridors of 64 streams important for the spawning and rearing of salmon, as shown in the map below.

\(^{1162}\) The southern transportation corridor within the Bristol Bay Area Plan lands is located mostly in management unit R09-07 Tommy Creek/Chigmit. See BBAP map, http://dnr.alaska.gov/mlw/planning/areaplans/bristol/2013/pdf/bbap_amend2013_map3-09.pdf. Management intent of these lands is general use “to be managed for a variety of uses, including the protection of fish and wildlife resources and their associated habitat, and dispersed recreation. Development authorizations may be considered appropriate subject to the protection of these resources.” Unit R09-07 Tommy Creek/Chigmit, available at http://dnr.alaska.gov/mlw/planning/areaplans/bristol/2013/pdf/bbap_amend2013_ch3_reg09.pdf. The port is located on and the southern transportation corridor route crosses lands and waters managed under the Kenai Area Plan for habitat only, where management intent of these lands is for “Brown bear spring feeding. Harbor seal haulout areas along coast north from Contact Point; moose, general distribution; Dolly Varden/Arctic char, general distribution; seabird nesting colonies on southeast coast; ducks and geese, general distribution; herring spawning on shoreline of this tract.” See management unit 19 Bruin Bay uplands, http://dnr.alaska.gov/mlw/planning/areaplans/kenai/pdfs/chap_3_region_12.pdf and map number 12E, http://dnr.alaska.gov/mlw/planning/areaplans/kenai/pdfs/12e.pdf. And the port is proposed in state waters designated and managed for Public Recreation and Tourism – Dispersed Use (see management unit 522A) Other resources and uses of these waters: “Beaches used by aircraft for landing. Herring spawning habitat, herring/salmon migration corridor, juvenile fish/shellfish rearing habitat, commercial fishing activity. Anadromous stream mouths. Beluga whale habitat. Cultural sites present. Herring spawn along coast, north of Unit 596, south of the mouth of Amakdedori Creek.” Id.
DNR is authorized by statute to close land to mineral entry when the Commissioner “makes a finding that mining would be incompatible with significant surface uses on the state land.”\(^{1164}\) Consistent with this statutory authority, DNR’s issuance of MCO 393 was based on its finding that “[t]he development of mining claims within the active stream channel of designated anadromous streams and adjacent uplands ... creates an incompatible surface use conflict with salmon propagation and production, and jeopardizes the economy of the Bristol Bay region and the management of the commercial, sport, and subsistence fisheries in the Bristol Bay area.”\(^ {1165}\) Thus, by closing stream corridors to mineral entry in MCO 393, DNR precluded all surface uses and activities relating to the development of mining claims as well.

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\(^{1164}\) AS § 38.05.185(a) (emphasis added).

\(^{1165}\) MCO 393, at 2 (emphasis added). Similarly, ADNR issued a mineral closing order for state lands in the Matanuska-Susitna Valley based on its findings that “certain stream systems in the area and their adjacent riparian uplands were ‘used extensively by the public for fishing, floating, boating, transportation to hunting, and public access corridors;’” that “salmon and other fish populations in these river systems not only supported substantial sport fishing, but were also major contributors to the Upper Cook Inlet commercial salmon fishery;” that “these activities constituted ‘significant surface uses’ of state land under AS 38.05.185(a);” and that “mining was incompatible with these significant uses and thus threatened an important segment of the economy of the Susitna basin.” Ellis v. State of Alaska, 944 P.2d 491, 494 (Alaska 1997) (emphasis added). The court upheld the mineral closing order precluding mining activities interfering with such surface uses as “reasonable and supported by the evidence in the record.” Id. at 495.
including but not limited to the discharge of dredged or fill material, the installation of structures, and the disposal of mining waste.

While MCO 393 does not affect “valid existing rights” in existence at the time DNR adopted the order in 1984, all of the Pebble deposit mining claims post-date DNR’s adoption of MCO 393 and thus cannot be considered valid existing rights. To the extent the mining claims in the Pebble deposit post-date 1984 and yet erroneously include lands protected by MCO 393, those mining claims are void ab initio.

Pertaining to PLP’s mining claims held at the Pebble deposit, 185 claims touch an MCO 393-designated stream, including Upper Talarik Creek, South Fork Koktuli, North Fork Koktuli, and unnamed smaller tributaries of Lake Iliamna. Among those 185 claims – which should have been off limits to mineral exploration because of the existence of MCO 393 – 34 claims contain 91 boreholes drilled by PLP over the years. The Corps should not permit any PLP activities in these MCO 393 encumbered areas, as doing so would be contrary to Alaska law. The Corps must analyze the MCO 393 areas in relation to PLP’s proposal and disclose this information in a revised Draft EIS for public review and comment.

Meanwhile, as the map above illustrates, the MCO 393 lands and waters exist among all three transportation corridor alternatives. And yet, the Draft EIS fails to analyze the comparative impacts of each transportation alternative on the MCO 393 lands and waters. For a proper evaluation of impacts to state lands and management intent among the alternatives, the Draft EIS must contain this analysis and this information must be available for public review and comment on the proposed alternatives.

**Direct, Indirect, and Cumulative Impacts to Private Landowners and State Lands.**

The impacts assessed to the state’s management intent of its lands and waters and to other private property owners must include the direct, indirect, and cumulative impacts. This includes the pattern of land use change that would occur in the region long-term with additional mining deposits explored for development. For example, mine construction, operation, and closure would limit any access to these lands and transportation corridor to private entities only and use and enjoyment of private lands will be adversely impacted from industrial activities. The Draft EIS fails to assess the cumulative effects of developing a road system in a large roadless area. The first major road incursion into a roadless region inexorably renders further industrial and other development more socially and economically

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1166 MCO 393, at 1.  
1167 See *Kile v. Belisle*, 759 P.2d 1292, 1295 and 1295 n. 5 (Alaska 1988) (applying the “general rule” that “mining claims located upon lands withdrawn from mineral entry are void ab initio”) (citations omitted).  
1168 A list of PLP claims touching MCO 393 streams was compiled by BBNC from mapping and mining claims data available on the DNR LAS and Mining Claims Mapper databases and has previously been submitted to DNR in October 2016. The Corps should request this information from DNR as part of DNR’s duties as a cooperating agency to help inform NEPA review.  
1169 *Id.*
feasible over a much larger area. Additional mine development is an obvious one (including potential future Pebble phases not assessed in this EIS), but other facilitated actions could include additional road system expansion per Alaska DOT planning, and a host of potentially resource-impacting activities like fishing, poaching, recreational gold mining, off road vehicle use, residential development, etc. Simply listing that some of these may occur does not evaluate or disclose the consequences of their occurrence. The EPA Watershed Assessment discussed this concern at length, but that information is ignored here. In ignoring its role as stepping-stone to further development, the Draft EIS grossly misleads the public about the true environmental and social impacts of this proposed action by focusing solely on (some of) the immediate and direct harms of the first stage of the Pebble project.

The Draft EIS must be revised to address the cumulative effects of the proposed Pebble Mine Project on private lands, native allotments, and state-managed lands and waters accounting for the state’s management intent.

15. Historic Properties

As BBNC stated in our scoping comment letter, the Corps “must address impacts to cultural resources (historical and pre-historical sites)” and direct, indirect, and cumulative impacts to historic properties. The Draft EIS notes significant data gaps in the “identification and evaluation of historic properties,” including:

- “known AHRS [Alaska Heritage Resource Survey] locations have not been evaluated for eligibility.”
- “The proposed transportation and pipeline corridors for each alternative and Diamond Point have not been systematically researched or surveyed for historic properties.”
- “To date, approximately 22 percent of the mine site footprint has been surveyed.”

Acknowledging these data gaps and deficiencies, the Draft EIS notes that the “need for and scope of additional research and survey work for the identification and evaluation of historic properties will be defined” at some future date and the details in the Draft EIS “will be revised as appropriate to incorporate additional findings.” Indeed, the Draft EIS admits that the identification work will occur “beyond the issuance of the Final EIS (FEIS) (e.g., the process for additional identification research and surveys, evaluation, and mitigation measures).”

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1170 BBWA at 13-31.
1171 BBWA at Chapter 13.
1172 See attached Appx. F, BBNC Scoping Letter, App. B.
1173 Draft EIS, at page 3.8-2.
1174 Id.
1175 Id.
1176 Id.
1177 Id.
It is a violation of NEPA for the Corps to continue to a final EIS without this missing historic properties information, as it is essential for the public to have an informed view of the alternatives. As further discussed in Section VII.B below, NEPA requires that the Corps disclose and analyze this information as it relates to all alternatives in an EIS prior to finalizing. NEPA requires that the public have an opportunity to review this information and use it to inform their view on alternatives. Agencies cannot wait until the Final EIS stage to disclose such information, as doing so “frustrat[es] NEPA’s goal of allowing the public the opportunity to ‘play a role in ... the decisionmaking process.’” 1178

Therefore, the Corps must require PLP to complete surveys and identification and evaluation of historic properties prior to the Final EIS, not after the Final EIS. Moreover and importantly, once the Corps has this information from PLP, it must revise and re-issue the Draft EIS for public review and comment. To do otherwise would be a violation of NEPA.

16. Recreation

As BBNC stated in our scoping comment letter, the Corps “must address impacts to recreation and tourism include increased noise, decreased visibility due to fugitive dust and powerplant and mobile source emissions, scars on the viewshed due to the port, road, and mine site, and perception of contaminated waters, fish, and wildlife.” 1179

Impacts to State Lands and Waters Designated for Recreation. State lands and waters around the southern transportation corridor, port site, Iliamna Lake, and Mulchatna River are designated specifically for public recreation and tourism, and impacts to these uses and designations should be assessed in the Draft EIS.

- Southern Transportation Corridor: The southern transportation corridor within the Bristol Bay Area Plan lands is located mostly in management unit R09-07 Tommy Creek/Chigmit. 1180 Management intent of these lands is general use “to be managed for a variety of uses, including the protection of fish and wildlife resources and their associated habitat, and dispersed recreation. Development authorizations may be considered appropriate subject to the protection of these resources.” 1181
- Amakdedori Port Site: The port is located on and the southern transportation corridor route crosses lands and waters managed under the Kenai Area Plan for habitat only, where management intent of these lands is for “Brown bear spring feeding. Harbor seal haulout areas along coast north from Contact Point; moose, general distribution; Dolly Varden/Arctic char, general distribution; seabird nesting colonies on southeast

1179 See attached Appx. F, BBNC Scoping Letter, App. B.
coast; ducks and geese, general distribution; herring spawning on shoreline of this tract.”1182 The port itself is proposed in state waters designated and managed for Public Recreation and Tourism – Dispersed Use (see management unit 522A) Other resources and uses of these waters: “Beaches used by aircraft for landing. Herring spawning habitat, herring/salmon migration corridor, juvenile fish/shellfish rearing habitat, commercial fishing activity. Anadromous stream mouths. Beluga whale habitat. Cultural sites present. Herring spawn along coast, north of Unit 596, south of the mouth of Amakdedori Creek.”1183

- Eastern Iliamna Lake: Iliamna Lake itself is designated by the state for public recreation and tourism. “The designations of Public Recreation and Tourism-Dispersed (Rd) and Habitat (Ha) apply to Iliamna Lake. The navigable waters of this Lake are to be managed so that its public recreation and habitat values are maintained. […] Authorizations within these waterbodies should not interfere with navigability, important habitat values, or recreational uses.”1184 Moreover, the islands within Eastern Iliamna Lake are designated by the state for public recreation and tourism: “Islands within Iliamna Lake are designated Public Recreation and Tourism-Dispersed. These management units, because of their unique scenic and cultural values, are to be retained in state ownership. Development authorizations, if issued, must ensure that public recreation and scenic values be maintained.”1185

- Mulchatna River: The Mulchatna River and its adjoining uplands and floodplains is designated by the state for public recreation and tourism. “[T]he navigable portions of the Mulchatna River and its adjoining uplands, as well as Chilidadrotna and Chilikadrotna Rivers and Nikadavna Creek, as depicted in Map 7-6, is designated Public Recreation and Tourism-Dispersed (Rd)…. In general, authorizations should not be issued for non-recreational uses that are incompatible with the management intent of this unit.”1186 The Mulchatna and Nushagak Rivers are also governed by a specific Recreation Management Plan “to provide the basis for the management of recreation uses and structures on state land within the Nushagak and Mulchatna drainage basin.”1187

- Kooktu River: The Kooktu River and its adjoining uplands and floodplains is designated by the state for public recreation and tourism. “This unit is designated Public Recreation and Tourism-Public Use Site (Rp) and is to be managed for public recreation and retained in public ownership.”1188


1183 Id.


1185 Id.

1186 Id. at page 3-124 to 125. See also page 3-105.

1187 Id. at page 4-17.

1188 Id. at page 3-106.
Given the priorities for recreation given to these areas by the State of Alaska, the Draft EIS must be revised to include detailed analysis of the recreation uses of these areas and the impacts from the proposed Pebble Mine Project.

**Impacts to BBNC’s Interests and Tourism Operations.** Potential indirect and cumulative impacts to BBNC’s current and potential future tourism operations in Bristol Bay should also be addressed, including impacts to BBNC’s tourism business line.

BBNC continually seeks out opportunities to responsibly further the economic opportunities associated with Bristol Bay’s pristine ecosystems and world-class fishery. In May of 2016, for example, BBNC purchased Katmailand, Inc., and its associated assets and operations, which include Brooks Lodge and Grosvenor Lodge concessions in Katmai National Park and Kulik Lodge on Nonvianuk Lake. These lodges are “incredible locations that are in the heart of Bristol Bay and are critically important to the ancestry and history of many of [BBNC’s] shareholders.” BBNC also owns and operates Mission Lodge, an all-inclusive fishing lodge on the shores of Lake Aleknagik near Dillingham. Guests to Mission Lodge fly-out daily to remote fishing locations located throughout Bristol Bay, including but not limited to areas that would be impacted by Pebble mine’s operations and transportation corridors.

Although BBNC’s tourism lodges are not in the immediate vicinity of the transportation corridors, they utilize rivers that are in the vicinity of the transportation corridors and, just as importantly, damage to Bristol Bay’s pristine ecosystems and world-class fishery would indirectly and cumulatively impact BBNC’s recreation and tourism opportunities, as their success is interconnected with the overall health of the project analysis area. Guided fishing trips could be impacted by displaced wildlife, for example. Flight paths ferrying lodge guests that pass close to the mine site would change the recreation setting and alter the experience of those guests. Ongoing truck and helicopter traffic to and from the Pebble site, as well as ferry across Lake Iliamna would cause adverse visual and auditory impacts and diminish the experiences of BBNC’s tourism guests. These and other impacts would also directly impact any potential tourism and recreational opportunities on BBNC parcels owned within the project analysis area.

Lastly, the construction of the Pebble Mine Project under any proposed alternative will generally diminish the reputation of Bristol Bay as a world-class sportfishing and wildlife viewing destination. This reputational damage will hurt all tourism businesses in Bristol Bay, including those owned and operated by BBNC.

The Draft EIS must be revised to include impacts to BBNC recreation and tourism opportunities, including but not limited to, impacts on BBNC’s tourism business line revenue, the connection to ancestry and history that many of BBNC shareholders maintain by recreating in and around Bristol Bay at BBNC facilities and elsewhere, as well the local and

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1190 See supra, Section II.B.
shareholder employment that Bristol Bay tourism and recreation generate for BBNC shareholders.

17. Visual Resources and Aesthetics

As BBNC stated in our scoping comment letter, the Corps “must address the mine site, transportation corridor, and port will have permanent and significant impacts on the appearance of the landscape as viewed from key observation points, planes, etc. and will in turn impact use and enjoyment of the area by many.”

The proposed Pebble Mine Project will create a massive 20-square mile scar on the otherwise pristine landscape of Bristol Bay; rock blasting during mine construction will result in dust emissions and reduced visibility and in potential scars to trees or other natural features from flying debris; project activities during construction, operations, and closure will import invasive species into the area; daily truck and ferry traffic will disturb visitors to the Iliamna Lake region; and associated dust and powerplant emissions from all these activities will reduce visibilities. All these will negatively impact tourism, recreation, subsistence, and peaceful enjoyment of Bristol Bay’s pristine lands. There is no consideration of the impacts from these activities beyond a mention that night lighting on the ferries and at the ferry ports may pollute the night sky. The substantive effects of these impacts are also not discussed. The Corps must fully address these impacts on visual resources in the Draft EIS.

The Army Corps must also consider the direct, indirect, and cumulative impacts from all of these mining and construction activities and must consider how, even after mine closure, tourism and visual resources will be visually impacted for hundreds of years to come. Proposed mitigation measures must also be assessed for their visual impact. For example, chemical and dust suppressants will reduce visibilities, and the fuel and hazardous chemical storage containers used for secondary containment will impose unsightly reminders that hazardous materials with the potential to spill or contaminate Bristol Bay’s land and waters are stored throughout the area. The visual impacts of long-term monitoring efforts must also be considered. The sighting of a helicopter used for long-term monitoring could disrupt wildlife viewing opportunities and impact subsistence harvests, for example.

Impacts to the soundscape from these activities that must also be addressed in the Draft EIS include but are not limited to the mine and port site powerplants; compressor stations along the route of the natural gas pipeline; rock blasting during road construction; ferries, vessels, and other vehicles along the transportation corridor; and facilities such the ports and ferry terminals. The Draft EIS notes that use of diesel electric propulsion for the ferry reduces

1191 See attached Appx. F, BBNC Scoping Letter, App. B.
1192 See supra.
1193 See supra.
1194 Draft EIS at page 3.11-1.
noise impacts and air emissions, but nevertheless these migration measures do not eliminate noise and emissions from ferries. Impacts to noise are considerable when measured against the existing ambient noise level at the mine site and port areas, which the Draft EIS admits is “wilderness ambient,” with a 35 decibel day-night average noise level. The impacts of such noise intrusion and vibrations on on wildlife, visitors, people who practice subsistence, fisherman, and others must be quantified and analyzed to comply with NEPA hard look requirements.

Finally, odors associated with the chemical and dust suppressants, water treatment plant, chemical dust suppressants, and diesel fuel must also be evaluated in the Draft EIS to assure comprehensive review of the direct, indirect, and cumulative impacts to aesthetics from the proposed mining activities, mitigation measures, and long-term monitoring plans.

18. Socioeconomics

As BBNC stated in our scoping comment letter, the Corps “must address all project components will have significant impacts on local communities, and infrastructure and services.” Potential impacts to the socioeconomic environment include changes to economy and income, regional education and infrastructure, cost of living, and population, and cultural ties to the area.

Simply stated, the people and communities of Bristol Bay economically and culturally depend on the region’s fisheries for their livelihoods and welfare. The mainstays of the economy include subsistence use, commercial fishing, and wilderness sport fishing, hunting, and wildlife viewing and other non-consumptive recreation. These mainstays are all sustainable in the long-run. Commercial fishing is closely managed for sustainability.

Indeed, Bristol Bay’s 130-year-old commercial fishery supports 14,000 American jobs in Bristol Bay. Total direct annual economic impact from wild salmon ecosystem services in Bristol Bay amounted to $479.6 million (in 2009). Nationally, the region’s commercial fisheries supports 20,000 American jobs, and generate over $1.5 billion in annual total economic activity.

Data on the economic significance of a healthy salmon ecosystem in Bristol Bay is missing from the Draft EIS review of socioeconomic impacts, and the potential socioeconomic impacts of an impaired fishery are not at all considered. Despite the critical contribution of a

Draft EIS at page 5-16.
Draft EIS at page 3.11-10.
See attached Appx. F, BBNC Scoping Letter, App. B.
See attached Appx. F, BBNC Scoping Letter, App. B.
healthy salmon ecosystem to the region’s economy, the Draft EIS does not assign a value to a healthy salmon ecosystem or consider the economic loss that could be associated if the proposed development risked the overall health of the salmon economy of Bristol Bay, a scenario that the Draft EIS must also consider. Jobs linked to a healthy salmon ecosystem, for example, are not at all considered in the Draft EIS. In the BBWA, EPA estimated (for 2009) that:

about 6,300 annual average jobs are attributable to the wild salmon ecosystem in the Bristol Bay region. Residents of Alaska hold more than 80 percent of all jobs. About 60 percent of all Alaskans working in the Bristol Bay region live in other parts of Alaska. About 20 percent of all jobs are held by non-residents from outside Alaska.

The EPA jobs data for Bristol Bay’s fisheries economy should be included in the Draft EIS. The Draft EIS should reconcile these figures against the jobs figures provided in the Draft EIS, which indicate that the proposed mining development will generate less jobs (2,000) than the Bristol Bay salmon fishery currently generates (6,300), and that of the mining-related jobs, only 50% of hires would likely be from Alaskan labor:

PLP has stated that its objective is to maximize opportunities for local hire; first, directly to residents of the EIS analysis area, or those with close ties to the area; and then to Alaska residents in general. However, it is likely that during the construction phase, substantial local resident and non-Alaskan labor would be required to fill the anticipated 2,000 jobs required, potentially as high as 50 percent of hires (citation omitted).\footnote{Draft EIS, at p. 4.3-7.}

Furthermore, the Draft EIS provides little economic evidence for the conclusions it makes about impacts on the local economy:

Instead it engages in an informal discussion of how large projects might have “ripple” or “multiplier” impacts on residents and businesses not directly involved in the new project. Although the DEIS describes the local socioeconomic context, it does not link that to the ability of the local economies to absorb and benefit from those indirect impacts. In addition, the DEIS misinterprets the local employment information associated with Pebble’s exploration activities 2007-2013. The result is an exaggeration of the positive local economic impacts that can be expected from the operation of the proposed Pebble Mine.\footnote{See App. E, Powers Consulting, Comments on Pebble Mine DEIS, June 11, 2019, at p. iii.}

The Draft EIS should also reconcile the purported increases in local jobs against the number of jobs that would be lost from a damaged wild salmon service economy as part of a broader...
socioeconomic analysis. This broader analysis should assess the impacts of an impaired fishery due to mining activities on the region’s economy, education and infrastructure, cost of living, and population, and cultural ties to the area. For even if under the mining development scenarios proposed, access to new roads and a natural gas pipeline could lower the cost of living for nearby communities, any temporary gains, such as cheaper fuel or improved access are outweighed by the long-term environmental risks of mining activities to a pristine, sustainable fisheries economy. The Bristol Bay Fly Fishing & Guide Academy, for example, is a place-based river education course sponsored by BBNC that fosters sustainable outdoor employment opportunities for Bristol Bay young people. Educational, job, and cultural programs such as these that are fundamentally tied to healthy salmon could no longer function. Such loss would impose incredible economic, educational, and cultural losses on the region. A healthy salmon ecosystem also supports bear viewing, a tourist activity that contributes to BBNC’s business interests in Brooks Lodge and to the economy of southcentral Alaska more broadly. The Draft EIS socioeconomics review therefore should be revised with empirical economic evidence to support its conclusions that salmon and mining can co-exist without jeopardizing a billion-dollar salmon services economy, other regional economies wholly dependent on the salmon economy, and the cultural, place-based, and educational values that are inextricably tied to healthy salmon ecosystems.

19. Environmental Justice

As BBNC stated in our scoping comment letter, the Corps “must address impacts related to environmental justice, includ[ing] food security and subsistence resources, health impacts from pollution and exposure to increased industrial activities and noises, increased risk of injury and exposure to hazardous materials, increased exposure to outsiders and the cascading social and psychological problems that brings (substance abuse, stress, cultural conflicts, etc.).”

The Corps’ environmental justice analysis fails to sufficiently evaluate whether the mining activities proposed in the Draft EIS will have “disproportionately high and adverse human health or environmental effects … on minority populations and low-income populations.” This includes Alaska Native communities. The Corps’ analysis fails to account for the full scope of potential impacts to minority and low-income populations and Alaska Native

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1204 https://bristolbayriveracademy.org/sponsor/
1207 See attached Appx. F, BBNC Scoping Letter, App. B.
1208 EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.
communities from all phases of mining activities and fails to consider impacts to all potentially affected populations.

Executive Order No. 12898, issued in 1994, requires that all federal agencies “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” CEQ guidance indicates that if the risks and rates of the natural and physical effects of a proposed action on the environment are “high and adverse,” agencies are to consider whether those risks are significant or above generally accepted norms. The Corps has failed to do so.

Communities living nearby the proposed development are rural, contain many low-income households, and retain subsistence lifestyles in a mixed, subsistence cash-income economy, which consists of:

A relatively large number of wild resources (approximately 70–80 specific resources), a community-wide seasonal round of activities based on the availability of wild resources, a domestic mode of production (households and close kin), frequent and large scale noncommercial distribution and exchange of wild resources, traditional systems of land use and occupancy based on customary use by kin groups and communities, and a mixed economy relying on cash and subsistence activities (citations omitted). The heart of this cash-subsistence economy is the resident population of 7,611 individuals (in the year 2000) located in 25 communities (internal reference omitted) spread across this primarily un-roaded area (internal reference omitted). Archeological evidence indicates that Bristol Bay has been continuously inhabited by humans at least since the end of the last major glacial period about 10,000 years ago. Three primary indigenous cultures are represented here: Aleuts, Yupik Eskimos, and the Dena’ina Athapaskan Indians. The share of the population that is Alaska Native is relatively high at 70 percent, compared to Alaska as a whole, with 16 percent.

The Corps acknowledges the potential for “high and adverse” impacts, but downplays their extent by minimizing their effect, or balances them against the overwhelming benefits that mining activities purport to bring to the region, including local jobs, improved access to subsistence resources, and cheaper fuel by linking communities to the natural gas

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1211 But see, supra, Section V.H.17 (“Socioeconomics”).
pipeline.\textsuperscript{1212} The Draft EIS is also flawed in assuming that subsistence impacts would either be limited by season or geographic extent, or if not, that there are other substitute subsistence areas that people could use instead.\textsuperscript{1213} The Draft EIS ignores that for many people and communities in the region, continued traditional and cultural uses of traditional lands and waters contribute to their physical and spiritual well-being and help to maintain their close relationship to the land and sustain their sense of place.

The Draft EIS findings that impacts “would not be high and adverse”\textsuperscript{1214} is deeply flawed and contrary to the evidence. Indeed, mining development activities could easily result in “high and adverse” effects, including the gradual loss, decline, or change in subsistence resources upon which local low-income and minority residents depend. This would place a disproportionate weight of any adverse effects on low-income and/or minority populations. The Draft EIS should be revised to include a more robust description and analysis of the disproportionate adverse effects, including: proximity and exposure to chemical and other adverse stressors, such as groundwater contamination from tailings storage facility leakage or catastrophic failure; unique exposure pathways, including subsistence fishing, hunting, or gathering places to which people of the region have historic and ancestral ties; multiple or cumulative impacts, including exposure to several sources of pollutions or pollutants from single or multiple sources, including a power plant, diesel generators, dust, and a waste incinerator; physical infrastructure, including the construction of a new natural gas pipeline, and the visual and auditory nuisance associated with it; and non-chemical stressors, including chronic stress related to environmental or socioeconomic impacts, such as impacts to food security and subsistence resources. The Corps’ analysis of these impacts falls far short of meaningful NEPA analysis sufficient to meet its environmental justice obligations.

Despite noting the potential for “high and adverse” impacts,\textsuperscript{1215} the Draft EIS assumes, without analysis or details, that mitigation would reduce any actual exposure. For example, the Draft EIS finds the potential that the ice breaking ferry could disrupt winter travel across the lake for people who rely on the ice as a form of transportation, and includes the vague commitment that PLP “would work with communities (and supply funding)” to mark and maintain snowmachine trails between communities across Iliamna Lake when lake ice would be thick enough to support such traffic (see Chapter 5, Mitigation).”\textsuperscript{1216} This is contrary to CEQ guidance, which states that “agencies should elicit the views of the affected populations on measures to mitigate a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe and should carefully consider community views in developing and implementing mitigation strategies.” The environmental justice analysis contains absolutely no discussion of the views of affected populations on this or any other mitigation measure. The Draft EIS only

\textsuperscript{1212} Draft EIS, pp. 4.4-4–7.
\textsuperscript{1213} See, e.g., Draft EIS, p. 4.4-6.
\textsuperscript{1214} See, e.g., Draft EIS 4.4-6.
\textsuperscript{1215} See Draft EIS, 4.4-4.
\textsuperscript{1216} Draft EIS, 4.4-6.
states a vague commitment that PLP “would” solicit the views of local communities, which is contrary to CEQ guidance. The Draft EIS should be revised to discuss more specific mitigation measures to address disproportionate, adverse impacts to environmental justice communities derived from conversations with affected communities. Finally, the Corps has failed to meaningfully engage communities in this EIS process, worsening the environmental justice implications of its proposed mining activities.1217

20. Cultural Resources

As BBNC stated in our scoping comment letter, the Corps “must address impacts to cultural resources (historical and pre-historical sites) and direct destruction of cultural resources from all project components.”1218

As discussed in Section VII below, the Corps has failed to provide field verification of cultural resources data. The Corps notes that this data gap is significant as “[p]ortions of the direct permit area (project footprint) have had no archaeological surveys conducted, and there has been no field verification.”1219 The Corps has noted that it “will require additional surveys to be completed in the 2019 field season to be incorporated into the FEIS.”1220 As for their 2019 plans, PLP “notes that field survey completion may be affected by consultant availability, weather conditions, and land access agreements.”1221

The Draft EIS points to examples of missing cultural resources and historic properties information, including:

- “field work scope was limited to investigating lands within the ‘claim block boundary’”1222
- “Field surveys did not cover the entire mine site or any of the project components outside of the mine lease area.”1223
- “Public input and additional research may yield the identification of additional place names and contribute to better understanding the cultural significance of these places.”1224
- “The transportation corridor for Alternatives 2 and 3, including the pipeline route, and the Diamond Point port components have not been surveyed or otherwise investigated for cultural resources.”1225

1217 See, supra, Section V.B.
1218 See attached Appx. F, BBNC Scoping Letter, App. B.
1219 RFI 117, Cultural Resources Field Data (sent to PLP on March 1, 2019, response requested by March 31, 2019).
1220 Pebble Project Comment Response Matrix, Nondalton Tribal Council Comments on Preliminary Draft EIS, Section 3.7, at page 4.
1221 PLP response to RFI 117 (March 4, 2019).
1222 Id.
1223 Id.
1224 Id.
1225 Id. at p. 3.7-3.
• “The proposed transportation and pipeline corridors for each alternative and Diamond Point have not been systematically researched or surveyed for historic properties.”

One stark example of the effects of the lack of cultural resources baseline information means for this process was expressed by cooperating agency Lake and Peninsula Borough:

The borough has significant concerns about the lack of information concerning cultural resources at the Amakdedori Port Site. Section 4.7.2.2 reads that the historic Amakdedori Village “has not been fully surveyed and distinct site boundaries have not been established.” Further it implies that the historic village boundaries could extend into the project area. The village site, cabins and trails, have significant personal and cultural value to a number of individuals in the Borough. One Planning Commission member indicates that it was the location of her grandfather’s cabin. The old cabins, trails, and village have personal meaning to many who reside in our borough. PLP and the Corps should establish the location and boundaries of the old sites before the project is authorized. Once the project has been through an EIS and permitting evaluation, the options for mitigating any impacts are diminished. For example, once everyone has agreed on a site and it is authorized, it is effectively impossible to move it. Our citizens would like to go to the site their grandfather or other relatives used without feeling as if they are in or immediately adjacent to an industrial zone. For that reason, we believe that the location of cultural features around the Amakdedori Port be located before the EIS is finalized. We cannot realistically comment on the impacts and mitigation measures without a better understanding of the location of the village and other cultural facilities.

NEPA requires that the cultural resources baseline data be collected prior to issuance of the Draft EIS so that the Corps can disclose a comparison of the impacts to cultural resources from the various alternatives proposed and so the public can have an informed view of the alternatives. The Corps is currently proposing to provide this information in a Final EIS only, thereby evading any public review of this issue. To do so violates NEPA.

To comply with NEPA the Corps must require PLP obtain this field information and revise the Draft EIS and re-release it for public review and comment.

1226 Id at p. 3.8-2.
21. Subsistence

As BBNC stated in our scoping comment letter, the Corps “must address long-term multi-generational impacts to traditional knowledge and practices, subsistence harvest patterns, subsistence values and beliefs, subsistence hunting and fishing due to habitat destruction and fragmentation and loss of access, and the resulting socio-cultural impacts.” Subsistence species of concern include salmon, caribou, moose, seal, berries, small mammals, and firewood.

The Corps Fails to Adequately Analyze Impacts to Subsistence Resources and Values

The Corps must provide meaningful analysis of impacts to subsistence resources and practices, especially impacts on fish due to the heavy reliance on fish by people in the area, by incorporating guidance from affected people who practice subsistence and the best available science. In addition, the Corps must consider impacts to subsistence resources and values from disturbances and strikes along the various transportation corridors, avoidance due to construction or infrastructure, sharing systems, compounded loss of subsistence areas, and the seasonal subsistence cycle. Studies have shown that the vast majority of households in the region rely on subsistence fishing, hunting, and gathering for a large percentage of their food.

Changes to subsistence harvest patterns. Many of the proposed project components are located on state-owned lands and waters designated under the Kenai Area Plan and Bristol Bay Area Plan for uses such as recreation, subsistence, and public recreations and tourism. Changes in subsistence harvest patterns would occur in the region, as mine construction, operation, closure, and long-term monitoring efforts associated with industrial activities would alter the current state lands management regime favoring wildlife and limit access to lands used for subsistence. Efforts made within the Draft EIS to limit consideration of impacts to subsistence lands by geography, time period, or season ignore the seasonal nature of subsistence harvest patterns and the ancestral and traditional importance of subsistence practices linked to specific lands.

Moreover, industrial activities will likely result in disturbance and displacement from subsistence use areas, potential for increased competition for resources, disturbance to subsistence fishing, and potential contamination of wildlife and waterfowl due to the tailings pond and pit lake. For example, the BBWA assessed the water quality and aquatic habitat impacts of dam failure on fish species heavily relied upon for subsistence by affected communities, using the Pebble 0.25 and 2.0 mining scenarios. The EPA’s analysis concludes that such a failure would be unprecedented, and “would have significant adverse affect on Koktuli and Nushagak River salmon, Dolly Varden and Rainbow Trout populations affecting

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1229 See attached Appx. F, BBNC Scoping Letter, App. B.
1230 See attached Appx. E, at pages 2041 to 2090, Callaway, Don, A Statistical Description of the Affected Environment as it Pertains to the Possible Development of the Pebble mine—17 Communities in Bristol Bay at 17 (2012) (a study funded by Bristol Bay Native Corporation).
1231 See supra, Section V.H.15 (“Recreation”).
downstream fisheries, including people who practice subsistence.”

It goes on to caution that adverse impacts could also occur in the lower Koktuli, Mulchatna, and Stuyahok Rivers, resulting in impacts to “much greater proportions of the Nushagak Chinook populations and other resident and anadromous fish populations.” The subsistence section of the Draft EIS does not account, nor even discuss, the scenario of a potential tailings dam failure, a potential ore concentrate pipeline spill, or the toxic effects of these and other potential spills on fish.

The Draft EIS, at a minimum, needs to assess the risks and reasonably foreseeable impacts of these and other failure scenarios on subsistence resources and the people who practice subsistence.

Of the impacts to subsistence that the Draft EIS does acknowledge, it downplays them by minimizing their effects, indicating that, for example, during the operations phase “the effects would last for 20 years.” The Draft EIS provides no basis for assuming that impacts to subsistence from mining operations would simply cease when mining operations cease in 20 years. This assumption runs counter to the non-linear way in which ecological feedback mechanisms work.

The Draft EIS also provides no explanation for its erroneous assumption that the operations phase would be “less disruptive” than the four-year construction phase, whose impacts include “habitat loss; individual mortality, behavioral disturbance and displacement resulting from increased noise, vehicle/aircraft/ferry traffic, and human activity; fugitive dust deposits on vegetation; concerns about contamination of resources; avoidance of traditional use areas; and increased costs and times for traveling to more distant areas.”

With a final mine design that remains elusive, there’s no basis for comparison.

The Draft EIS also provides no scientific support for its conclusion that wildlife displaced at the mine site would not “impact harvest levels, since there would be no population-level decrease in resources and alternative, and in many cases more productive, habitats are available.”

The Draft EIS does not quantify the expected losses of wildlife or describe which other habitats are available, how they would be as or more productive than the habitat

1232 BBWA at page 9-2.
1233 Id. at page 9-27.
1234 See BBWA at page 11-5 (predicting a 30 percent chance of a concentrate pipeline spill over a 25-year period).
1235 See attached Appx. E, at page 178, Yocom, Thomas G., Recommendations on the scope of analysis pursuant to the National Environmental Policy Act and Section 404 of the Clean Water Act (June 17, 2018), at p. 20.
1236 See, e.g., Draft EIS at page 4.9-2 (“project activities would, in varying degrees, affect the availability and abundance of traditional and subsistence resources through habitat loss; individual mortality, behavioral disturbance and displacement resulting from increased noise, vehicle/aircraft/ferry traffic, and human activity; fugitive dust deposits on vegetation; concerns about contamination of resources; avoidance of traditional use areas; and increased costs and times for traveling to more distant areas.”).
1237 Draft EIS at p. 4.9-2.
1238 See attached Appx. E, at pages 103 to 117, Utz, Ryan, Misapplication of an environmental threshold in an ecosystem with exceptionally rich fisheries resources (June 19, 2019).
1239 Draft EIS at p. 4.9-2.
1240 Id.
lost to mining activities, whether people who practice subsistence have any cultural ties to these “more productive” habitats, whether existing land ownership patterns present access issues to these habitats for subsistence use, and how these other habitats would also be directly, indirectly, or cumulatively impacted by the proposed mine project.

**Habitat fragmentation and loss of access.** Although the Draft EIS admits that the magnitude of impacts to habitat subsistence species would be from the footprint of project facilities, which is massive, it indicates that “the facility footprint would be small in comparison to the total habitat available, and culverts would be required on the access roads to allow for fish passage.”\(^ {1241}\) The Draft EIS fails, however, to specify a monitoring and maintenance strategy for culverts that may become blocked by debris or ice or expected hydrological changes.\(^ {1242}\) The Draft EIS also admits that “[there would be some site-specific habitat fragmentation from project facilities, causing behavioral disturbance to terrestrial wildlife and birds and localized changes in distribution,”\(^ {1243}\) but that there are abundant resources and that people will just go somewhere else to harvest them. Again, this ignores the potential for contamination to resources available elsewhere, as well as traditional and cultural ties to specific lands that would be lost. Even if alternative locations could sustain the resource over the long-term, the additional expense and time required to harvest those resources is noted as one of the adjustments that people will have to make “to where they harvest some subsistence resources to target resources that would be less affected by project activities.”\(^ {1244}\) The Draft EIS does not quantify the additional time and cost burdens those adjustments would impose, or discuss the stress of such a disruption and the multigenerational physical, health, emotional, spiritual, and psychological impacts that “target[ing] resources that would be less affected by project activities” could have on traditional knowledge and practices.\(^ {1245}\)

**The Corps Fails to Adequately Consider Impacts to People who Practice Subsistence.**

**Values and beliefs.** The Draft EIS’s expectations that people who practice subsistence will simply adjust and adapt do not take into consideration the viewpoints of affected people. How the Corps foresees people adjusting and adapting should be described. It is also necessary to consider that all people who practice subsistence may not be able to adapt because of factors like increased cost of travel to more distant subsistence use areas.

Further, the Corps has failed to adequately analyze how the sharing of subsistence resources between communities will be impacted by the proposed mining activities. As sharing and participating in sharing networks is considered a substance activity, the Corps must consider how reductions in the ability to share are in fact a reduction to subsistence. The complete

\(^{1241}\) Draft EIS at p. 4.9-2-3.


\(^{1243}\) Draft EIS at 4.9-3.

\(^{1244}\) Id.

\(^{1245}\) Draft EIS at 4.9-3.
loss or reduction of resources in communities closest to the mine site may impact the exchange of resources with other communities within the region. Existing sharing networks distribute food widely, where communities are able to receive resources they are otherwise unable to obtain. When availability of subsistence foods decreases, sharing also decreases as households experience reduced harvests and availability.

The Draft EIS merely mentions that reduced harvests could disrupt sharing networks, and there is no substantive consideration of effects, merely that changes would occur and “[households and communities would have to adjust to new roles of subsistence labor, changes in sharing networks, and possible changes in harvest levels.” The Draft EIS should look at specific communities sharing practices and the relative wealth of households to accurately determine impacts from reductions in fluidity of resources. The potential impacts to these social networks on food security, subsistence values and beliefs, and other subsistence practices should be explained in much greater detail; simply acknowledging it is insufficient to serve as the required NEPA analysis.

The Draft EIS does not sufficiently consider the compounded impacts to subsistence hunters. When subsistence users are unable to engage in subsistence activities or their opportunities are limited, their ability to pass on traditional knowledge about subsistence activities also becomes limited. As discussed above, opportunities or subsistence areas may become limited because of infrastructure, avoidance by subsistence hunters, and reduced subsistence resources. The initial reduction of traditional use areas will limit the ability to pass on traditional knowledge to younger generations and traditional use and knowledge of the use areas will be lost. The Draft EIS should measure this impact as long-term or permanent, and consider the loss of knowledge as a significant subsistence impact.

Finally, the Draft EIS identifies the seasonal nature of subsistence but fails to qualify or quantify the impacts to subsistence practices during particular times of the year. The Corps should articulate in detail how the proposed mining activities will impact resources and practices during each month. Subsistence users generally rely on healthy subsistence resources being present in traditional use areas at specific times, and some harvesters are often limited in their ability to access resources beyond traditional use areas at the expected time of year. Even if the potential impact to wildlife resources may be slight, changes in resource access and availability, including perceived changes in fish and wildlife health due to development, may affect subsistence. Effects on subsistence would result in indirect and cumulative socio-cultural impacts.

We recommend the Corps read closely the public hearing transcripts for the 14 public hearings EPA held throughout Bristol Bay between 2012 and 2017, attached to this comment letter in Appendix F, to fully understand and analyze the subsistence concerns of the Bristol Bay people and how it relates to values and beliefs. This is among the best available information to the Corps regarding the potential impacts to subsistence, values, and beliefs.

1246 Draft EIS at 4.9-9.
Moreover, as described in detail above, the Corps failed to adequately analyze impacts to sociocultural systems, the economy, environmental justice, and health and safety. These flawed analyses result in the Corps’ inadequate discussion of subsistence impacts. A hard look necessitates that the Corps completely revise the subsistence section. We recommend the Corps take a hard look at sociocultural system, the economy, environmental justice, health and safety impacts from the proposed project and then revise its analysis accordingly and reissue the Draft EIS for public review and comment.

22. Human Health

As BBNC stated in our scoping comment letter, the Corps “must address short and long-term impacts from all stages of the project include increased risks of accidents and injuries, exposure to hazardous materials, negative impacts on food, nutrition, and subsistence, increased potential for infectious diseases, risks to clean water and sanitation from population-stressed infrastructure, risks to health and human services from population-stressed infrastructure and services.”

The Corps’ public health analysis lacks significant rigor and should be dramatically improved to provide the public with a more thorough understanding of the health dangers of mining development in an area home to one of the world’s most productive salmon fisheries and affected communities reliant on mixed subsistence-cash economies. BBNC requests that the Corps conduct a Health Impact Assessment (HIA), and to pay particular attention to the determinants and associated feedbacks that contribute to public health and wellness in rural Alaska when assessing impacts of the proposed project on human health.

Indeed, scoping comments to the Corps at public hearings in the Bristol Bay region and in writing explicitly requested the Corps conduct an HIA in order to determine the direct, indirect, and cumulative impacts to health, as did scoping comments from cooperating agency EPA. According to scoping comments from the EPA, “The Health Impact Assessment methodology is a common tool that can be used to assess potential health impacts. HIA is a combination of procedures, methods, and tools that enables systematic analysis of potential positive or negative effects of a policy, plan, program, or project on the health of a population, as well as the distribution of those effects within the population.”

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1247 See supra Section V.H.20.
1248 See supra Sections V.H.18 and II.A.
1249 See supra Section V.H.19.
1250 See infra. V.H.22.
1251 See attached Appx. F, BBNC Scoping Letter, App. B.
1253 Draft EIS, Appendix A Scoping Report, at p. 25.
1254 Letter from EPA to the Corps (June 29, 2018).
1255 Id.
As such, the EPA “recommend[ed] that the Corps involve public health professionals in
determining the appropriate level of analysis. In addition to evaluating impacts, we
recommend that the HIA identify the appropriate actions to manage or mitigate health effects
from the proposed project.” EPA’s recommendation and the requests from the Bristol
Bay people to conduct an HIA were ignored by the Corps.

HIA’s offer a systemic methodological framework for factoring public health concerns into
decision making. The National Academy of Sciences (NAS) defines an HIA as a:

systematic process that uses an array of data sources and analytic
methods and considers input from stakeholders to determine the
potential effects of a proposed policy, plan, program, or project on the
health of a population and the distribution of those effects within the
population. HIA provides recommendations on monitoring and
managing those effects.

The NAS Committee on Health Impact Assessment has analyzed the integration of HIA’s
into the NEPA process. The Committee recommends that the use of HIA’s “should be
focused on applications in which there is the greatest opportunity to protect or promote
health and to raise awareness of the health consequences of proposed decisions.”

The NAS concluded that “improving the integration of health into EIA practice under NEPA
and related state laws is needed and would advance the goal of improving public health.”

Widely used internationally, the use of HIA’s is growing in the U.S. and in Alaska,
increasingly as part of the NEPA process. While not required by Alaska state law, HIA’s are considered by the Alaska Department of Health and Human Services (DHHS) as a
“best practice approach for responsible development”. In 2010, the State of Alaska
institutionalized an HIA Program at the State Department of Health and Human Services.
The Alaska HIA Program “evaluates potential health effects of new policies, programs, or
projects using existing public health surveillance data, medical literature reviews, and field

1256 Id.
The Program published a toolkit “to guide HIA practitioners in implementing an Alaska-specific best practices approach to performing field studies and stakeholder engagement activities, rating potential impacts, and making final recommendations”. One best practice approach the HIA identified is early consultation with public health expert agencies in the coordination of health assessments to avoid duplicative efforts. This best practice approach is also consistent with NEPA requirements of cross-disciplinary collaboration between natural, physical, and social sciences to further its objectives.

The Corps must conduct an HIA in order to comply with other NEPA requirements. As described in 40 C.F.R. § 1502.15, data and analyses in an environmental impact statement shall be commensurate with the importance of the impact. The public health impacts of the proposed mining activities are unquestionably one of the most important impacts that the government must analyze. NEPA analysis, after all, is largely premised on taking a hard look at the “human environment.”

As described in 40 C.F.R. § 1502.24, agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. As described in BBNC’s scoping comments, completing an HIA is a necessary step to insure the professional and scientific integrity of the NEPA process.

NEPA standards require an ex ante analysis of “reasonably foreseeable, significant impacts on the human environment.” Implementing regulations are explicit that public health is among these impacts. NEPA thus requires that federal agencies analyze the environmental effects, including health effects, in an EIS as soon as it is “reasonably possible” to do so.

The Technical Guidelines published by the State of Alaska’s HIA Program specifies that the HIA should be completed as early as possible in the process to enable baseline data to be gathered, and to enable sufficient agency and expert coordination as required by NEPA. As mentioned above, State of Alaska guidelines endorse early coordination on HIAs because it “promotes cooperative planning of field studies and data gathering with other environmental baseline studies, which reduces survey fatigue in communities and the overall cost of field studies.”

1264 See http://dhss.alaska.gov/dph/Epi/hia/Pages/pubs.aspx.
1267 42 USC § 4332.
1268 Congressional Record, Senate, P. 40416, December 20, 1969 (emphasis added).
1269 See attached Appx. F, BBNC Scoping Letter.
1270 42 U.S.C. §§ 4321, 4331(b).
1271 40 CFR § 1500–1508.
1272 42 U.S.C.A. § 4332(2)(C); 40 C.F.R. § 1502.22.
work, decreases the risk of delays, and provides an opportunity for health input into the creation of project ‘alternatives.””

Notably, the Corps did not consult the HIA Program or any other entity with public health expertise when conducting the public health analysis for the proposed Draft EIS. It also did not engage in gathering pre-development baseline data to determine conditions prior to potential disruption. The Corp’s failure to conduct an HIA ignores the “best practice approach” of HIA completion at the earliest possible opportunity.

The Corps’ public health analysis contained in the Draft EIS did not consult public health professionals in its finding that “[overall, the economic and health benefits of improvements in economic status is expected to be substantial for the residents of the affected communities.” This conclusion, which generally prioritizes health benefits over health risks, is based upon a broad description of the general health conditions of the Affected Environment “in a manner that is consistent with the State of Alaska’s guidelines for Health Impact Assessment.” This approach is not an adequate substitute for actually conducting a full HIA. Without an HIA, the Draft EIS’s conclusions that mitigation will minimize health effects and compliance with existing regulations will prevent health impacts is premature and unreliable. Further, cumulative effects of future actions, including the 78-year mine build out, which the Draft EIS identifies as one of the “reasonably foreseeable future actions” that could have the “greatest potential to impact cumulative health and safety” are only cursorily addressed by a single bullet point. Merely listing broad issues with the “greatest potential” to contribute to health impacts does not constitute a hard look. The Draft EIS does not explain or analyze whether these potential impacts will have negative or positive effects or their expected duration. NEPA requires analysis with greater specificity in order to sufficiently analyze cumulative impacts.

To resolve these issues, the Corps should conduct an HIA. It is only at the Draft EIS stage when it is possible to gather the baseline data and ensure the agency cooperation required to make a robust health assessment grounded in professional and scientific integrity as NEPA requires. An HIA would also provide missing information needed in order for the public to adequately assess the Corps’ conclusion that proposed mitigation measures will be sufficient to “minimize or mitigate exposure.” Consistent with scoping comments, and EPA recommendations, the HIA should be comprehensive, and used to address health and safety

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1275 Draft EIS, at p. 4.10-8.
1276 Draft EIS, at p. 4.10-1.
1277 See Draft EIS, at p 4.10-14; see also Draft EIS, at p. 4.10-1.
1278 See Draft EIS, at p. 4.10-12.
1279 See Draft EIS, at p. 4.10-14.
issues including, but not limited to: “the direct, indirect, and cumulative impacts to health; public health concerns related to infrastructure development in rural communities; cancer and non-cancer health effects associated with air toxins and identify sensitive receptor populations that may be exposed to these emissions; increased risks of accidents and injuries; exposure to hazardous materials; impacts on food nutrition and subsistence; increased potential for infectious diseases, and risks to health and human services from population-stressed infrastructure and services; and social and psychological impacts.”

PLP’s permit application unquestionably represents the “greatest opportunity” for an HIA to be used as part of the NEPA process to “protect or promote health and to raise awareness of the health consequences of proposed decisions.” The Corps’ health assessment must be based on an HIA in order to be commensurate with the potentially significant level of impact that mining one of most productive salmon fisheries in the world could have on human health and safety of nearby communities in the region and those who consume the region’s fish worldwide. For all of these and other reasons, the Corps must follow Alaska DHHS recommended best practices, conduct an HIA, and include the results in a revised Draft EIS that is circulated for public review and comment.

23. Existing Transportation and Navigation

As BBNC stated in our scoping comment letter, the Corps “must address impacts to boat traffic (recreation and fishing and shipping) due to port facility shipping and Lake Iliamna barging, increased air traffic during all project phases. The Corps must assess how an ice-breaking ferry on Lake Iliamna will impact residents who travel across the frozen lake via truck, ATV, snowmachine in the winter to visit neighboring communities.”

The Draft EIS fails to disclose to the public all of the potential variants crossing Iliamna Lake. Indeed, on June 14, a mere two weeks before the close of the comment period on the Draft EIS, the Corps uploaded a new and before unknown RFI response regarding transportation corridor variants. In this document, the Corps for the first time disclosed a new variant for the icebreaking ferry crossing Iliamna Lake. For Iliamna Lake residents who use the lake ice for travel in the wintertime, this new variant might prove especially problematic; however, those people will never have the opportunity to express their concerns with this variant and indeed will not know of its existence, unless the Corps modifies the Draft EIS alternatives and re-releases a revised Draft EIS for public comment.

New transportation variant, undisclosed in the Draft EIS and released only 2 weeks before the close of this comment period so that the public will never have a chance to review and comment:

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1280 Draft EIS, p. 4.10-1.
1281 See attached Appx. F, BBNC Scoping Letter, App. B.
1282 RFI 121.
In addition, the proposed project transportation corridor itself has been changed at the same
time, with only two weeks to go in the Draft EIS public comment period and with no notice
to the public. This “Revised Proposed Project” envisions a road further away from the
Iliamna community and closer to the Nondalton community, without any notice to the people
who live there.
Finally, the Draft EIS presents information about the ferry traffic in a confusing manner, suggesting in various places that two lake ferries might be needed for the project, despite other places of the document only mentioning one lake ferry. This is confusing specially for the summer-only variant, giving the public little indication and zero analysis of the tradeoffs to existing transportation uses of the lake with the proposal to add an additional ferry and forego winter operations.

Given the confusing presentation of impacts to existing transportation, and the significant project transportation corridor changes occurring a few weeks before the close of the comment period without public notice, the Corps must revise and reissue the Draft EIS for public notice and comment.

1283 See, e.g., Draft EIS Executive Summary at page 14 (discussing the summer-only ferry variant, “To transport annual quantities of concentrate, fuel, and consumables during the open water months, a larger non–ice-breaking vessel making two trips per day on average would be necessary; or possibly two ferries making one trip per day each on average.”).
24. Spill Risk and Dam Safety

As BBNC stated in our scoping comment letter, the Corps “must address impacts from spills of diesel fuel, oil, liquefied natural gas, mine slurry chemicals, and mine tailings. These spills may result from routine operations or from accidents ranging from small to catastrophic.”1284

The Draft EIS fails to adequately assess the safety and associated spill risk of the seven impoundments at the mine site under the proposed 20 year plan as well as the 78 year plan. The Draft EIS omits any discussion or analysis of a catastrophic failure of the bulk tailings storage facility, the pyritic tailings storage facility, or the water management pond. NEPA requires an evaluation of the environmental impacts of “low probability, high risk” events.1285 Thus, catastrophic failures of these facilities must be analyzed in the EIS. The Draft EIS also omits an analysis of the pyritic tailings embankments failing during the post-operation phase, relying on unreasonable assertions from PLP that it will place pyritic tailings back into the mine pit at closure. Finally, the Corps fails to properly analyze the risk of spills related to the transportation facilities, pipelines, and shipping activities to Iliamna Lake, Cook Inlet, and land and water along the transportation corridor. The Corps must address these concerns, discussed further below, revise the Draft EIS and issue a revised Draft EIS that fully discloses the spill risk and dam safety issues for public review and comment.

**Legal Framework—Dam and Impoundment Safety, Failure, and Risk and Cooperating Agency Concerns.** Corps regulations require that tailings dams be independently reviewed prior to issuing a permit and as part of the content included in a 404 permit application:

> to demonstrate that the structure complies with established state dam safety criteria or that the structure has been designed by qualified persons and, in appropriate cases, independently reviewed (and modified as the review would indicate) by similarly qualified persons. No specific design criteria are to be prescribed nor is an independent detailed engineering review to be made by the district engineer.1286

EPA in its role as a cooperating agency has explicitly requested the Corps require this independent review. Moreover, following the Mt. Polley tailings dam failure, PLP CEO Tom Collier “committed to submit the engineering design for the project’s tailings storage facility to an independent review prior to initiating permitting.”1287 PLP has failed to do so prior to entering permitting and the Corps has arbitrarily and irresponsibly failed to require

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1284 See attached Appx. F, BBNC Scoping Letter, App. B.

1285 See Metropolitan Edison Co. v. People Against Nuclear Power, 460 U.S. 766, 773 (1983); San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm’n, 449 F.3d 1016, 1029-1030 (9th Cir. 2006).

1286 33 C.F.R. § 325.1(d)(6).

an independent review of the safety of PLP’s proposed six impoundments. PLP has failed to provide its advanced engineering of the dam design, despite requests from the State of Alaska, EPA, and the Corps’ EIS contractor to do so.\textsuperscript{1288} AECOM and DNR in particular questioned the accuracy and viability of even conducting a minimal FMEA risk assessment without this information, asking “With PLP’s currently limited dam design, \textit{do we have enough information to do a FMEA?}”\textsuperscript{1289}

“An impact statement must be particularly thorough when the environmental consequences of federal action are great.”\textsuperscript{1290} “Any substantial risk that the dam could fail would be intolerable; and if the agency were to proceed in the face of that risk, that would constitute an abuse of agency discretion.”\textsuperscript{1291} Generally, the Ninth Circuit applies a flexible “rule of reasonableness” standard to determine whether an event is so remote or speculative that it does not need to be discussed in NEPA documentation.\textsuperscript{1292}

The Corps ignored the requests of cooperating agencies EPA and DNR in developing the scope of its analysis of tailings dam failures:

- \textbf{EPA}: “given the size of the dams and importance of downstream aquatic resources, and for the bulk TSF, centerline dam construction methodology (which is not as stable as downstream construction), we recommend that: (1) a Failure Modes Effect Analysis (FMEA) or other type of formal risk assessment be conducted for the dam designs; and (2) the Corps require that the tailings dam designs be independently reviewed per 33 CFR 325.1. FMEA/risk assessment and independent review are recommended best practices from both the Independent Expert Engineering investigation and Review Panel Report on Mount Polley Tailings Storage Facility Breach (2014) and the International Council on Mining and Metals Review of Tailings Management Guidelines and Recommendations for Improvement (Golder 2016) for evaluating safety and stability of tailings dams. Mitigation measures arising out of the risk assessment and independent reviews should be identified and required of the final designs and operating plans. We recommend that the FMEA/risk assessment and independent review occur now so that the results can be disclosed in the DEIS to support the Corps’ hard look, as required by NEPA, at tailings dam stability and safety.”\textsuperscript{1293}

- \textbf{DNR}: “suggested the scenario of a complete failure (due to engineering unknowns),

\textsuperscript{1288} See attached Appx. D at page 3.
\textsuperscript{1289} AECOM, Notes for DNR Dam Failure Scenarios Meeting (Aug. 1, 2018), page 1 (emphasis original).
\textsuperscript{1290} \textit{Warm Springs Dam Task Force v. Gribble}, 621 F. 2d 1017, 1026 (9th Cir. 1980).
\textsuperscript{1291} \textit{Id}.
\textsuperscript{1292} \textit{San Luis Ojibso Mothers for Peace v. NRC}, 449 F.3d 1016 (9th Cir. 2006) (“In sum, in considering the policy goals of NEPA and the rule of reasonableness that governs its application, the possibility of terrorist attack is not so remote and speculative as to go beyond NEPA requirements.”).
\textsuperscript{1293} Pebble EIS Preliminary Draft Chapter 1 and 2, EPA Comments (Nov. 21, 2018), page 4.
 […] the FMEA process is still quite subjective/conceptual, and that we should not describe our process as ‘risk assessment,’ which implies a much more detailed analysis.”

Moreover, critical details are missing from the tailings dam design. The design of the TSF drainage system is not available for review and comment in the Draft EIS. The Draft EIS fails to disclose how this system will work and therefore the public cannot analyze its effectiveness and provide comments. Failure to include this information impedes the public’s ability to review the stability of the tailings dams.

As indicated by record documents, the Corps ran an unreasonably limited Failure Modes Effects Analysis (FMEA) workshop where it arbitrarily limited the participants in the workshop (by excluding EPA and cooperating agency tribes), convened the workshop with limited information related to the tailings design and geotechnical underpinnings, conducted a process “driven by an unrealistic timeline at the expense of using the best available science,” and limited the scope of the workshop so that a full TSF failure would not be considered in the FMEA workshop analysis.

As found by EPA based on its review of tailings dam failures worldwide, failure of the bulk or pyritic tailings dams would have cascading negative effects on the Koktuli River and salmon habitat for decades. Indeed, the Draft EIS admits that “recovery of a massive release, especially one that reaches flowing water, would be extremely difficult.”

**Risk from 20-year Mine Catastrophic Failure.** The Draft EIS fails to analyze and disclose the potential for a catastrophic dam failure at the proposed Pebble Mine Project and the associated impacts. As discussed above, NEPA requires an evaluation of the environmental impacts of “low probability, high risk” events. A mine project embankment catastrophic failure is undoubtedly a high risk event and one where the probability is not too remote or speculative that it would evade review under NEPA. The proposed Pebble Mine Project is located in a seismically active and water-saturated environment, enhancing the likelihood of failures. Moreover, PLP does not understand the full geology or geotechnical risks associated with its planned embankment locations, and the Corps has not required this information of them prior to the Draft EIS. And, perhaps most importantly, PLP is not

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1294 Notes from State of Alaska Department of Natural Resources (ADNR) – Dam Safety Meeting to Discuss Determination of Pebble Project Dam Potential Failure Mode (PFM) Scenarios (Aug. 1, 2018).


1296 See BBWA chapter 9.

1297 Draft EIS at page 4.27-65.

1298 See Metropolitan Edison Co. v. People Against Nuclear Power, 460 U.S. 766, 773 (1983); San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm’n, 449 F.3d 1016, 1029-1030 (9th Cir. 2006).

1299 See, supra, discussion in section V.H.3 (Geohazards and Seismic Conditions).

1300 See, attached Appendix D.
proposing, and the Corps is not requiring them, to use the safest embankment methods for the bulk facility – the downstream dam method. Instead, PLP is proposing to use the less safe centerline construction method.\textsuperscript{1301} While the Corps has included the downstream dam method as an alternative variant in the Draft EIS, it fails to compare the catastrophic spill risks associated with both types of dam structures.

The Corps must analyze the risks and potential impacts from catastrophic failures of all embankment facilities proposed under the 20-year mine plan. The Corps has provided no rational and reasoned explanation for why catastrophic releases are “extremely unlikely” and should be ruled out from any analysis.\textsuperscript{1302} Indeed, as noted above, record documents indicate that the Corps’ decision not to analyze impacts from a catastrophic failure was motivated by arbitrary reasons—namely, time constraints and lack of a detailed design from PLP—and that they made this decision contrary to the requests of cooperating agencies and concerns from the people in Bristol Bay.

\textit{Risks from 20-year Mine Plan Post-Closure.} The Corps arbitrarily limited the Draft EIS analysis of embankment failures to the operations phase, focusing its FMEA solely on “the construction and 20-year operational timeframe.”\textsuperscript{1303} The Corps notes that, while the pyritic TSF and main water management pond embankments “would be removed at the close of operations,” the “Bulk TSF embankment would remain in place indefinitely.”\textsuperscript{1304} The Corps made its decision not to analyze post-closure failure scenarios of the bulk TSF despite the FMEA workshop noting a high likelihood of “[M]alfunction of seepage collection system due to inadequate maintenance over time.”\textsuperscript{1305}

If permitted, and even if closed after 20 years, the risk from the Pebble Mine Project to downstream communities, subsistence users, recreational users, and aquatic life will persist in perpetuity. And yet, the Corps ignores this important potential impact and fails to analyze risks post-closure. These risks are not remote and they should be analyzed and disclosed to the public. Therefore, the Corps should revise the Draft EIS accordingly.

\textit{Risks from 78-year Mine Plan.} In addition to failing to take a hard look at the impacts of a failure of the embankments and facilities as proposed, the Draft EIS fails to consider the risks of embankment and tailings failures under its analysis of cumulative impacts and the likelihood and impacts of spills beyond 20 years both in the case of closure and in the case of

\textsuperscript{1301} Draft EIS at page 4.27-73 (“[d]ata on dam failures around the world demonstrate that dams designed with downstream construction methods are less likely to fail that dams using centerline construction methods, especially under seismic shaking.”).

\textsuperscript{1302} Draft EIS at page 4.27-75.


expanded mine development. Longer and expanding mining operations require additional and larger embankments. Indeed, according to PLP, their 78-year proposal calls for “additional TSF embankments.”1306 And yet the Corps does not analyze any risks and impacts associated with additional TSF embankments, either in the course of normal operations or catastrophic failures.

Longer mine operation and larger tailings impoundments will result in increased likelihood of TSF failures over time. Indeed, the cumulative probability of failure over a 100 year period, based on the data in the Draft EIS, is approximately 5%. After 500 years, it is approximately 22%.1307 The Draft EIS recognizes that extending the operation life of the mine by another 78 years would result in “extending ongoing impacts” and “increasing the likelihood of impacts from spills.”1308 However, the Corps has failed to analyze and disclose this risk and the associated impacts in a quantitative manner.

The Corps should conduct an analysis of impacts of catastrophic and normal operations failures both for the 78-year mine operation and closure after any mine operation.

**Pyritic Tailings Dams Failures Post-Operation**. The Draft EIS omits any discussion of a pyritic tailings facility remaining in perpetuity. This is contrary to PLP’s original permit application submitted to the Corps in 2017 where the pyritic tailings facility would have remained in the Koktuli watershed (with embankments on the north and south tributaries) post-operations. Despite more recent changes in the 404 permit application, this proposal is still likely the more reasonable and final plan at closure, as placing pyritic tailings back into the pit at closure is contrary to standard mining practices and would foreclose future mining of 88% of the remaining deposit.1309 It is unreasonable for the Corps to rely on the assertion that a mine developer and permit applicant would forever seal off access to 88% of the gold, copper, and other minerals in the ground by placing water and pyritic tailings above the remaining deposit.

By relying on PLP’s unreasonable assertions, the Corps has forgone doing any analysis whatsoever on the failure of the pyritic tailings facility post-closure, stating “Pyritic TSF and Main WMP embankments would be removed at the close of operations (and pyritic tailings placed in open pit); therefore, these facilities were not evaluated for the postclosure time period.”1310 The north embankment on the pyritic TSF facility is the second-highest of the proposed embankments at 425 feet and a failure would release into the main water

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1306 RFI 62.
1308 Draft EIS, at page 4.24-38.
1309 See attached Appx. E, at pages 1394 to 1397, Chambers, David M., Why Pebble will be at least a 78-year mine (March 14, 2019).
management pond and “potential cause a cascade-type failure that would drain into the Koktuli River North Fork drainage.”[1311] The south embankment on the pyritic TSF facility is 305 feet and a failure of it would “flow into the Koktuli River South Fork drainage.”[1312]

Because PLP’s plan to place pyritic tailings back into the pit at the close of mining is not supported by an economic feasibility study, because it was PLP’s original intention to keep a pyritic tailings facility in perpetuity, and because it is not standard mining practice to place pyritic tailings back into a pit when 88% of the resource is still in the ground, the Corps cannot rely on this uneconomically-tested proposal to avoid its responsibilities to analyze impacts of a pyritic TSF failure post-operations. The Corps must do this analysis and re-release the Draft EIS for public review and comment.

**Spill risk from transportation corridor and port operations.** The Draft EIS fails to fully disclose and analyze the impacts and risks of spills related to the transportation corridor, ferry, and port project components. The Draft EIS must disclose and analyze the potential impacts from diesel, ore concentrate, and reagent spills from all proposed activities. Based on expert review of the Draft EIS, the Corps has failed to utilize proper assumptions and statistics in calculating spill risks; and thus the spill risks currently presented are based on faulty estimates.[1313] The Draft EIS should be revised to fully account for these risks and then analyze the associated impacts on the human environment.

25. **Pipeline Reliability, Safety, and Energy/Fuel Use**

As BBNC stated in our scoping comment letter, the Corps “must address impacts to Kenai residents, Cook Inlet waters, Lake Iliamna waters, the waters of 200+ stream crossings, and potential for accidents due to earthquakes, land erosion and subsidence, pipeline corrosion, explosions, and tampering. The Corps must address the impacts of a 270MW power plant, utilizing 50 million standard cubic feet per day, on the Cook Inlet natural gas supply and the impacts to neighboring communities also using this same, limited supply.”[1314]

**Pipeline and Power Reliability.** The proposed Pebble Mine Project will require a lot of electricity in an extremely remote location to manage and treat massive amounts of water, run pumps, and tailings trains, among other things. The Draft EIS fails to account for the cascading effects that might occur should a power loss occur. During a power loss, it may not be feasible to expect to have enough storage to hold the contaminated water (proposed to be treated on the order of approximately 28 million gallons per day) and it will also be hard

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[1311] Id. at 3.
[1312] Id.
[1313] See attached Appx. E, at pages 2125 to 2232. Lubetkin, Susan, A critique of the transportation corridor spill risk estimates of diesel, ore concentrate, and chemical reagents in the Pebble Project draft environmental impact statement (May 20, 2019); Nuka Research and Planning Group, LLC, Comments on the Draft EIS for Proposed Pebble Mine—Shipping Hazards and Spill Risks in Cook Inlet; Tsunamis and Port Infrastructure; Natural Gas Pipeline; Lake Iliamna Operations (May 20, 2019).
to have backup power for the entire treatment plant. Multiday power outages might force the mine operator to discharge untreated water directly into receiving waters. This is especially problematic when the Draft EIS admits that untreated mine contact water “would contain elevated levels of aluminum, arsenic, beryllium, cadmium, copper, lead, manganese, mercury, molybdenum, nickel, selenium (a metalloid), silver, and zinc in exceedance of the most stringent WQC.”1315

However, the Draft EIS fails to account for this very real possibility in remote Alaska. The Corps must revise the Draft EIS and include an analysis of power reliability and the potential cascading impacts to the human environment from a power outage at the mine site.

**Energy/Fuel Use.** Given the concerns with natural gas availability in Southcentral Alaska and scoping comments to that effect citing supporting data and analysis from the State of Alaska, the Corps has inappropriately and arbitrarily dismissed addressing impacts of the proposed Pebble Mine Project on natural gas fuel reliability in Southcentral Alaska.

For the 20-year mine 270MW powerplant, the Draft EIS predicts PLP will need to use 50 million standard cubic feet of natural gas per day, or 18.25 billion standard cubic feet of natural gas per year, or 365 billion standard cubic feet of natural gas over the 20-year lifetime of the project.1316 Moreover, for the 78-year Expanded Development Scenario 375MW powerplant, the Draft EIS predicts PLP will need to use 70 million standard cubic feet of natural gas per day.1317 The source of this natural gas, as stated in PLP’s project description and the Draft EIS will be “any natural gas producer in Cook Inlet, Alaska.”1318

Based on recent data released by DNR, the current demand for Cook Inlet natural gas for southcentral Alaska is 80 billion cubic feet per year.1319 DNR concludes that the “Cook Inlet gas volumes identified in this study can satisfy the current demand level of about 80 Bcf/year until around 2030.”1320 Based on this conclusion, the current total permitted and available supply of Cook Inlet natural gas through 2030 is 880 billion standard cubic feet.1321

PLP’s requirement of 18.25 billion standard cubic feet per year will put a substantial dent in the overall available natural gas supply derived from current Cook Inlet sources. This information is not disclosed or discussed in the Draft EIS, despite requests during scoping to do so. Instead, the Corps arbitrarily decides not to address this important economic issue to those reliant on the Cook Inlet gas supply by dismissing the concern as “beyond the scope of

1315 Draft EIS, Executive Summary, and page 71.
1316 Draft EIS, page 2-71. See also Draft EIS, Appendix N—Project Description (Dec. 2018), at page 51.
1320 Id.
this EIS because they are not a component of any federal permit required for this project.”1322
The Corps’ arbitrary dismissal of this issue is a violation of NEPA. The Corps is required to
assess the direct, indirect, and cumulative impacts of all components of the proposed Pebble
Mine Project on all aspects of the human environment, including the economics and impacts
of displacing natural gas essential for power and heating with a new, 270MW natural gas
powerplant. The Corps must revise the Draft EIS to include this information and analysis.

26. Impacts to National Parks and Recreation/Tourism

As BBNC stated in our scoping comment letter, the Corps “must analyze the impacts of the
proposed Pebble mine, private road, powerplant and port facility on Lake Clark and Katmai
National Parks. Lake Clark National Park is downwind from the proposed mine and 270-
megawatt powerplant. Air pollution and dust from the proposed mine and powerplant will
negatively impact use of the park. And any harm to the Kvichak watershed and its salmon
run will negatively impact Lake Clark National Park. Likewise, the brown bears of Katmai
National Park will be negatively impacted by the 65-mile private road corridor passing
through pristine brown bear habitat with 35 haul trucks running each day. The Army Corps
must analyze the impacts harming these National Parks will have on tourism and use and
enjoyment of public lands.”

Congress set aside Lake Clark and Katmai National Park and Preserves for the protection of
natural resources like salmon, with detailed enabling language Congress charged these parks
specifically with protecting wild salmon habitat and natural and cultural values associated
with salmon.1323 Based on this directive from Congress, in 2014 DOI wrote to EPA in
support of its 404(c) Proposed Determination to place reasonable restrictions necessary to
protect salmon habitat. DOI concluded in 2014 that mining the Pebble deposit and its
associated infrastructure and discharges would harm National Park Service-Managed
Resources including “significant losses of streams, wetlands, lakes, and ponds” that would
result in “potential impacts to NPS-managed resources, and in turn, […] the legislated
purposes of NPS-managed lands.”1324

Given Lake Clark and Katmai’s unique purposes and wildlife and recreational values, the
Corps must examine with detail and specificity potential impacts to these parks under all
three proposed Action Alternatives, rather than simply including them in a broader analysis
of wildlife or recreational impacts. The Draft EIS is woefully inadequate in analyzing the
impacts to these parks under all three Action Alternatives. The Draft EIS should be revised
to separate out the impacts to National Parks from the general discussion of recreation
contained elsewhere in the document. In particular, the Draft EIS needs an expanded

1323 The purpose of Lake Clark National Park is to protect a portion of “the watershed necessary for the perpetuation
of the red (sockeye) salmon fishery in Bristol Bay.” See ANILCA § 201(7)(a)). The purpose of Katmai national
park is to “maintain unimpaired the water habitat for significant salmon populations” along with its role protecting
“high concentrations of brown bears.” See ANILCA § 202(2).
1324 Attached Appx. F. Letter from Pamela Bergmann, Regional Environmental Officer – Alaska, to U.U. Env’t
Protection Agency (Sept 12, 2014), at page 3.
discussion of the impacts specific to these parks from the road alternatives and resulting impacts to wildlife, fish and vegetation that might impact park resources; powerplant and fugitive dust emissions and impacts to the parks; and the transportation, ferry, and port facility and associated visual and aesthetic impacts to park visitors.

The Draft EIS must fully analyze the cumulative impacts associated with a larger effort to explore and mine the Bristol Bay watersheds in the event that the proposed Pebble Mine Project is permitted and built. Indeed, as described in Section III.C.2. above, there are more than 3,500 abandoned mining claims surrounding the Pebble deposit that are available in the future for restaking under Alaska’s mining laws, many of which are in Lake Clark watersheds. Indeed, these claims were staked on the prospect that Pebble would be developed, so it is reasonable that they would be restaked and exploration and development would begin anew if Pebble was permitted. This possibility was a major concern of DOI, noting “development of the Pebble Deposit and associated infrastructure may facilitate development of additional regional deposits, which in turn, could further negatively impact the ecological function of this ecosystem. Several of these additional claims and potential mines are in the headwaters of the Chulitna River … [and] remains an area of concern for DOI, given its proximity to NPS-managed lands.”

Finally, as described in Section V.H.16 (Recreation) above, potential indirect and cumulative impacts to BBNC’s current and potential future tourism operations in Bristol Bay—specifically in Katmai National Park—should also be addressed, including impacts to BBNC’s tourism business line.

27. Impacts to Bristol Bay Commercial Fishery

As noted throughout this letter, the commercial fishery of Bristol Bay is of vital importance to the people who live there. Bristol Bay’s commercial salmon fishery provides enormous economic benefits to both the Alaska and national economies. Nearly one-third of all of Alaska’s salmon harvest earnings come from the Bristol Bay region and the seafood industry contributes $5.8 billion to the Alaska economy and 78,500 jobs. The 2017 sockeye salmon catch in Bristol Bay had a direct harvest value of $214.6 million and—owing to Bristol Bay processing and sustainable management—was almost double the 20-year average of $108.9 million. And in 2018, 62.3 million sockeye salmon returned to

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1325 Attached Appx. F. Letter from Pamela Bergmann, Regional Environmental Officer – Alaska, to U.S. Env’t Protection Agency (Sept 12, 2014), at page 4.
1326 See ISER Report.
Bristol Bay, the largest salmon season ever, based on records dating back to 1893, marking the fourth consecutive year that inshore sockeye salmon runs exceeded 50 million.\textsuperscript{1330} The Nushagak and Kvichak River systems alone accounted for more than 50 million returning sockeye in 2018, or more than 80\% of the entire Bristol Bay run. The 2018 season also ranks first in the history of the fishery’s exvessel value, with a preliminary estimate of $281 million, or 242\% above the 20-year average of $116 million.\textsuperscript{1331} On an average year, the secondary wholesale value increases to more than $503 million when additional shipping, secondary processing, and distribution expenditures are added to the estimate.\textsuperscript{1332}

The nationwide benefits of the Bristol Bay commercial fishery are also compelling. The nearly 14,000 seasonal fishing and processing jobs created by the Bristol Bay salmon fishery give rise to an additional 5,852 year-round jobs for United States residents, which generate an estimated $411.7 million in earnings for these workers.\textsuperscript{1333} On an average year, Bristol Bay salmon fisheries thus create a total economic output value of $1.5 billion.\textsuperscript{1334}

Bristol Bay’s continued success is dependent on its image as a source of pristine, wild salmon. This image is derived from the pristineness of the waters in Bristol Bay and is at risk from the proposed Pebble Mine Project. Indeed, as stated by the North Pacific Fishery Management Council:

> The value and reputation of commercial fisheries in Alaska has been earned by consistently providing a superior product to global markets. Both the value and reputation of Bering Sea, Gulf of Alaska, and other Alaska fisheries are dependent on the pristine waters of Alaska’s marine ecosystems, and the Alaska Seafood Marketing Institute has worked to ensure that the well-earned reputation is a hallmark of North Pacific fisheries. Any analysis that considers development of a large-scale mine in the area must also consider reasonably foreseeable future actions, including the potential impacts not only on fish populations and habitat, but also on both the value and reputation of North Pacific fisheries.\textsuperscript{1335}

We echo the concerns of many commercial fishermen and processors who have detailed the Corps’ failings in the Draft EIS to fully account for the benefits that the commercial fishery provides to the people of Bristol Bay and a full accounting of the risks posed by Pebble Mine and request the Corps revise the Draft EIS accordingly.

\textsuperscript{1330} See ADF&G, 2018 Bristol Bay Salmon Season Summary (Sept. 18, 2018), \url{http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/989536277.pdf}
\textsuperscript{1331} Id.
\textsuperscript{1332} See ISER Report, Main Report at 34.
\textsuperscript{1333} See id at 21
\textsuperscript{1334} ISER Report, Executive Summary at 2.
I. **INADEQUATE MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES DESCRIBED AND ASSESSED**

The Corps’ Draft EIS must discuss appropriate mitigation measures.\(^{1336}\) To comply with NEPA, mitigation measures “must be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated.”\(^{1337}\) An “essential component of a reasonably complete mitigation discussion” must include “an assessment of whether the proposed mitigation measures can be effective.”\(^{1338}\) A “‘perfunctory description’ or ‘mere listing’ of mitigating measures is inadequate to satisfy NEPA’s requirements.”\(^{1339}\) CEQ has instructed that the “possibility of mitigation” should not be relied upon to avoid further environmental analysis.\(^{1340}\) Therefore, simply identifying mitigation measures, without analyzing their effectiveness, violates NEPA.

The Corps’ Draft EIS mitigation measures described and analyzed in Chapter 5 are wholly insufficient to meet the requirements of NEPA and the chapter and analysis needs to be substantially revised and modified and re-issued for public review and comment. The Corps is ignoring longstanding legal requirements and fails to ensure the public can properly evaluate the proposed mitigation measures, and thus the potential harm and severity of the harm, from the proposed Pebble Mine Project. In addition, the Corps cannot defer compliance with the mitigation requirements of NEPA until the 404 permitting process is complete, as doing so would undermine the action-forcing purpose and NEPA and would evade the required public review.

1. **The Corps Improperly Relies on Adaptive Management**

In the Draft EIS, the Corps improperly relies on adaptive management and fails to take a hard look at the effectiveness of PLP’s proposed best management practices, monitoring, and mitigation measures. The Corps cannot solely rely on adaptive mitigation to meet the requirements of NEPA.\(^{1341}\)

The term “adaptive management” has been used traditionally to describe an approach to natural resource management that is based on the understanding that ecosystems function in

\(^{1336}\) See 40 C.F.R. §§ 1502.14(f), 1502.16(h), 1508.25(b).

\(^{1337}\) Neighbors of Cuddy Mountain v. U.S. Forest Serv., 137 F.3d 1372, 1380 (9th Cir. 1998) (quotations and citation omitted).

\(^{1338}\) S. Fork Band Council of W. Shoshone of Nevada v. U.S. Dep’t of Interior, 588 F.3d 718, 727 (9th Cir. 2009).

\(^{1339}\) Okanagan Highlands Alliance v. Williams, 236 F. 3d 468, 473 (9th Cir. 2000), (citing Neighbors of Cuddy Mtn. v. USFS, 137 F.3d 1372, 1380 (9th Cir. 1998); Idaho Sporting Cong. v. Thomas, 137 F.3d 1146, 1151 (9th Cir. 1998)).

\(^{1340}\) Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations; see also Davis v. Mineta, 302 F.3d 1104, 1125 (10th Cir. 2002).

\(^{1341}\) National Trust for Historic Preservation v. Suazo, 2015 WL 143632 (D. Ariz. 2015); Greater Yellowstone Coalition, Inc. v. Servheen, 665 F.3d 1015, 1029 (9th Cir. 2011) (“[I]t is not enough to invoke ‘adaptive management’ as an answer to scientific uncertainty.”).
Adaptive management allows for changes throughout a program’s implementation as new information is acquired. Consistent monitoring and reevaluation of new information is integral to determining when and which actions must ultimately be taken.

There are two fundamental components to adaptive management. The first is iteration, or the idea that an adaptive management program should incorporate cyclical feedback rather than operate in a strictly linear manner. This component relies heavily on best available science. The second emphasizes social and institutional learning through a strong monitoring, evaluation, and reporting program. The National Research Council-National Academy of Sciences identifies the experimental, learn-by-doing nature of adaptive management frameworks:

Adaptive planning and management involve a decision making process based on trial, monitoring, and feedback. Rather than developing a fixed goal and an inflexible plan to achieve the goal, adaptive management recognizes the imperfect knowledge of interdependencies existing within and among natural and social systems, which requires plans to be modified as technical knowledge improves...

The idea and practice of adaptive management has not been without challenges, however. Scholars studying its implementation note that to date, adaptive management has been more influential as an idea rather than as a practical management tool. In practice, they argue, it amounts to “a/m-lite,” described as “a watered-down version of the theory that resembles ad hoc contingency planning more than it does planned ‘learning while doing.’” Noted problems include difficulties developing acceptable predictive models (often complicated by a lack of data on key process or difficulties validating data); a mismatch between the length of the adaptive management process and short funding cycles; agency and stakeholder impatience with the slow pace of adaptive management; a lack of leadership for monitoring

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1343 See, e.g., Tarlock, Dan, *The non-equilibrium paradigm in ecology and the partial unveiling of environmental law*, 27 Loy. L.A.L. Rev. 1121 (1994) “[W]e must pay as much attention to the implementation and monitoring of management policies as we do to their formulation so that newly collected information can be used to modify policies as necessary.”


1346 J.B. Ruhl & Robert L. Fischman, *Adaptive Management in the Courts*, 95 Minn. L. Rev. 424, 426, fn. 8 (2010) (defining “a/m-lite” further as a “stripped-down version of adaptive management that often fails due to management, implementation, and planning problems.”)
and coordinating efforts; and a lack of follow through. At its worst, the a/m-lite approach amounts to “open-ended contingency planning or ‘on-the fly’ management that promises some loosely described response to whatever circumstances arise.” When the approach agencies take to adaptive management is not supported by the literature on adaptive management, a concern is “whether the agency-implemented a/m-lite is enough of an improvement over the comprehensive rationality assumption of front-end decisionmaking to justify the loss of certainty and transparency.”

As a result of these discrepancies, courts are in disagreement over what constitutes adaptive management. It is clear, however, from a review of litigation on the topic that “agencies may not rely ‘on adaptive management as an excuse for deferring real planning in favor of’ an approach that promises to deal with expected future problems as they arise.”

Here, the applicant improperly relies on adaptive management to justify deferring subsequent decisions to later tiers and to adaptive management as a framework sufficient to explain its vague commitments. For example, in response to the EPA’s comment that “the Draft EIS did not discuss the Corps approach to adaptive management with respect to TDS or selenium (Se),” the Corps noted that it would evaluate such measures “after the Draft EIS comment period,” and the Draft EIS ignores the comment. In response to a different EPA comment that consideration of alternative waste treatment disposal methods be considered in the Draft EIS, the Corps’ response in an Appendix to the Draft EIS was that “[t]his may require further investigation as design progresses and/or as a long-term adaptive management strategy.” The Draft EIS did not indicate how the Corps would determine which of the two approaches to take, the meaningful differences delineating the two, the criteria it would apply to the decision, and the implications of such decision on mitigation. Indeed, as the Draft EIS indicates, the decision is a critical one to leave on such uncertain terms, as it “involves highly complex chemistry” whose assumptions, if invalid, could lead to “a more rapid increase in salt and selenium mass would occur in the main WMP than currently projected” and “the potential for higher TDS in the discharge streams in order to close the salt balance. Further, the captured selenium would continue to cycle up in the process and could eventually reach a level where the treatment system is unable to meet discharge limits.” Should the scenario


1352 Draft EIS, p. K4.18-50 (emphasis added). See also, *Blue Mountain Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1214 (9th Cir. 1998) (the environmental document itself is where the agency’s “defense of its position must be found,” not in an appendix to this document); see also *Friends of the Earth v. Hall*, 693 F. Supp. 904, 934 (relegation of technical discussion into technical appendices was improper under NEPA).

described come to pass, the Draft EIS makes no note of how its approach to adaptive management would ensure effective mitigation of those potential impacts.

Although the Draft EIS defines adaptive management in Chapter 5, it offers no structural framework or decisional criteria to inform its implementation of adaptive management strategies. In fact, the Draft EIS does not even cite a reference for the definition of adaptive management provided. Moreover, neither the goals of adaptive management, nor the pathways to achieve it, are identified in the Draft EIS. The Corps also fails to specify which protocols it will apply, which measures it will adopt when implementing adaptive management, which actions will trigger adaptive management, and which monitoring efforts—commonly understood as “the heart of the strategy”—will adopt. The Draft EIS indicates that monitoring is a key aspect of adaptive management but defers substantive development of the monitoring plans to an unspecified time in the future. For example, the Draft EIS indicates that “[t]hrough monitoring, appropriate data are collected to assess predicted project impacts and the effectiveness of mitigation after initial and ongoing implementation. Mitigation that is not proving effective can be adapted.” Despite the importance of monitoring to a successful adaptive management strategy, in the same chapter, the Draft EIS only notes that “[a]n Aquatic Resources Monitoring Plan (ARMP) would be developed for the project” that evidently, “would allow for an adaptive management approach to address any impacts defined.” Details regarding key terms critical to evaluating the Corps’ approach to adaptive management, including how the Draft EIS defines “appropriate data”, specific timelines for “initial and ongoing implementation,” “any impacts,” and “monitoring” are not included in Draft EIS.

The EPA further commented that the Draft EIS “does not provide any details” on monitoring:

The description of Alternative 1 mentions monitoring in several locations but does not provide any details. A monitoring plan is typically provided as part of a mine plan of operations to support EIS development and described in Chapter 2 of the EIS (since it is part of the project description). We

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1354 Draft EIS, p. 5-2 (“Adaptive management is often defined as ‘a structured, iterative process of robust decision-making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring.’ Mitigation monitoring can incorporate elements of adaptive management if monitoring results indicate a basis for changes to a mitigation program.”).


1356 Draft EIS, p. 5-2 (Table 5-1).

1357 Draft EIS, p. 5-9 (Table 5-2).
recommend that a monitoring plan be included in the Alternative 1 description or provided in an appendix. The monitoring plan should include a sufficient level of detail to demonstrate that it can measure environmental effects and trends. In addition, the monitoring plan should have an adaptive management component and describe changes that would be made to the project design or operations should impacts be different than predicted or if standards are exceeded. The monitoring plan should describe the process and environmental monitoring that would occur during construction, operations, and closure for all project components and include monitoring locations, parameters, frequency, and objectives. Please see our scoping comments related to monitoring.\textsuperscript{1358}

The Draft EIS defers firm decisions to take critical actions on monitoring and other project components until a subsequently vague adaptive management process to be determined after the comment period concludes. The effect is that the public is left with no opportunity for informed or meaningful review, and the Draft EIS fails to comply with NEPA requirements that agencies evaluate environmental impacts prior to the agency taking action. 40 C.F.R. § 1500.1 (b). Moreover, the Draft EIS’s lack of objective, measurable adaptive management criteria fails to explain how the Corps’ adaptive management approach will comply with statutory criteria, including Section 404 and effluent limitations under the Clean Water Act.\textsuperscript{1359} Even if the adaptive management plan is revised to include objective and measurable protocols, those protocols are not likely to survive judicial review if courts cannot find “reasonable certainty of compliance”\textsuperscript{1360} to assure that environmental conditions do not degrade below substantive legal standards. Furthermore, the Corps’ vague reference to adaptive management makes the effectiveness of the mitigation plans designed to avoid degradation nearly impossible to assess.

In sum, the Corps’ reliance on adaptive management is not a substitute for meeting NEPA or any other statutory criteria. The Corps should revise the Draft EIS to include parameters, protocols, and criteria that it will apply to the adaptive management framework, ensuring that it addresses current discrepancies about which uncertainties will be handled by the “design process” and which uncertainties will be handled by a “long-term adaptive management strategy.” The parameters of what is intended by a “long-term” strategy should be defined with a timeline, and the applicant’s ability to fund a long-term strategy should also be independently assessed by the Corps, as examples. In addition to clarifying the amorphous reference to “adaptive management” with measurable criteria, the revised Draft EIS should also assess how the implementation of such framework will comply with the NEPA

\textsuperscript{1358} Pebble Project Comment Response Matrix, EPA Comments on Preliminary Draft EIS, Chapter 2, at page 29, (emphasis added).


requirement that agencies take a ‘hard look’ at their action,\footnote{See, e.g., High Sierra Hikers Association v. Weingard, 521 F. Supp. 2d 1065, 1090-91 (N.D. Cal. 2007) (overturning a Forest Service decision to relax rules limiting campfires in high country wilderness areas, despite a record raising a number of problems with the decision, on the basis that it could monitor and adjust in response to problems). The court ruled that the agency could not rely on adaptive management to overcome an inadequate response to the problems raised in the record. \textit{Id.} at 1091.} as well as other statutory mandates under the CWA and other applicable statutes.

2. The Corps Has Failed to Take a Hard Look at the Effectiveness of Any Proposed Best Management Practices, Monitoring, and Mitigation Measures

NEPA regulations define “mitigation” as a way to avoid, minimize, rectify, or compensate for the impact of a potentially harmful action.\footnote{40 C.F.R. §§1508.20(a)-(e).} Under NEPA, the Corps must have an adequate mitigation plan to minimize or eliminate all potential project impacts. NEPA requires the Corps to:

\begin{itemize}
  \item (1) “include appropriate mitigation measures not already included in the proposed action or alternatives,”\footnote{40 CFR § 1502.14(f)}
  \item (2) “include discussions of: . . . Means to mitigate adverse environmental impacts (if not already covered under 1502.14(f)).”\footnote{40 CFR § 1502.16(h).}
\end{itemize}

NEPA requires that the Corps discuss mitigation measures, with “sufficient detail to ensure that environmental consequences have been fairly evaluated.”\footnote{Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 352 (1989).} “[O]mission of a reasonably complete discussion of possible mitigation measures would undermine the ‘action-forcing’ function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects.”\footnote{\textit{Id.}, at 353.}

An “essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective.”\footnote{South Fork Band Council v. Dept. of Interior, 588 F.3d 718, 727 (9th Cir. 2009) (rejecting EIS for failure to conduct adequate review of mitigation and mitigation effectiveness in mine EIS), citing \textit{Neighbors of Cuddy Mountain v. U.S. Forest Service}, 137 F.3d 1372, 1381 (9th Cir.1998) (disapproving an EIS that lacked such an assessment) with \textit{Okanogan Highlands Alliance v. Williams}, 236 F.3d 468, 477 (9th Cir.2000) (upholding an EIS where “[e]ach mitigating process was evaluated separately and given an effectiveness rating”).} The Supreme Court has required a mitigation discussion precisely for the purpose of evaluating whether anticipated
environmental impacts can be avoided. A mitigation discussion “without at least some evaluation of effectiveness is useless in making that determination.”

As such, in scoping comments to the Corps, BBNC and cooperating agencies requested the Corps describe fully describe proposed mitigation measures in the Draft EIS. Particularly notable was the detailed description of mitigation measures described in EPA’s scoping comment letter to the Corps:

In evaluating the proposed project and alternatives, the analysis should include an evaluation of performance and effectiveness, as well as the planned monitoring to ensure efficacy of proposed design features, environmental protection measures, and mitigation. The term mitigation included in this "Range of Alternatives" section is referring to the general term as it applies to NEPA. Compensatory mitigation for purposes under CWA section 404 cannot be used to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives for the purposes of requirements under Section 40 C.F.R. § 230.10(a). See 1990 Memorandum of Agreement between Army and EPA concerning the determination of mitigation under CWA section 404(b)(l) Guidelines.

Regarding mitigation for purposes of NEPA, we recommend that the alternatives analysis include appropriate mitigation measures not already included in the proposed action or alternatives. 40 C.F.R. § 1502.14(f). The EIS should evaluate reasonable alternatives, including mitigation measures, to reduce or minimize adverse impacts to environmental resources. We recommend that, in conducting such an evaluation, the Corps consider:

- The disturbance footprint;
- Habitat value, cultural significance, and risks in siting project components for the proposed mine site components, as well as the port site, transportation corridor, and pipeline components;
- Source control measures (effective management of waste rock and tailings to prevent acid generation and metal leaching) and containment (liners and covers);
- Measures to reduce contact between mine waste materials and surface water and groundwater (such as surface water diversions and liners and covers as recommended above);
- Impacts of pit dewatering on groundwater and stream flows;
- Treatment to promote compliance with water quality standards;
- The physical stability of structures (e.g., pit walls, ore storage and

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1368 Methow Valley, 490 U.S. at 351–52 (citing 42 U.S.C. § 4332(C)(ii)).

waste rock facilities, tailings facility) during operations and closure, such as considering dry stack tailings;
• Impacts along the pipeline route and transportation corridor, including to Lake Iliamna;
• Impacts from dredged material disposal;
• Impacts to the marine environment at the Amakdedori Port site;
• Air pollutant emissions; and
• Impacts to traditional and cultural uses and resources, including key subsistence species and sites.\textsuperscript{1370}

The Corps woefully failed to incorporate a discussion of mitigation measures in its analysis of project impacts and the effectiveness of such mitigation measures. Draft EIS Chapter 4 analysis of impacts to the environment fails to include detailed discussions of how the Army Corps assessed the effectiveness of proposed Best Management Practices (BMPs), monitoring, and mitigation measures to limit impacts of the project to the direct, indirect, and cumulative effects of the proposed project on the human environment. Moreover, Chapter 5’s description of mitigation measures is insufficiently vague. Instead, the Draft EIS, without explanation or quantification, merely attests that BMPs, monitoring, and mitigation measures (many of which are yet to be developed) are “[t]o the extent possible, … considered when assessing the impacts of the project on the resources, as described in Chapter 4, Environmental Consequences.”\textsuperscript{1371}

EPA explicitly noted this shortcoming of Chapter 4,\textsuperscript{1372} recommending that the Draft EIS “discuss the certainty that BMPs and controls will be effective over the lifespan of the project.”\textsuperscript{1373} EPA also noted the lack of a monitoring plan:

The description of Alternative 1 mentions monitoring in several locations but does not provide any details. A monitoring plan is typically provided as part of a mine plan of operations to support EIS development and described in Chapter 2 of the EIS (since it is part of the project description). We recommend that a monitoring plan be included in the Alternative 1 description or provided in an appendix. The monitoring plan should include a sufficient level of detail to demonstrate that it can measure environmental effects and trends. In addition, the monitoring plan should have an adaptive management component and describe changes that would be made to the project...

\textsuperscript{1370} Letter from R. David Allnutt, Director EPA Region to, to Shane McCoy, Program Mgr., U.S. Army Corps of Eng’rs (June 29, 2018), enclosure at page 2.
\textsuperscript{1371} Draft EIS, p. 5-5.
\textsuperscript{1372} EPA Comments – Pebble Project Preliminary Draft EIS, Section 4.24 – Fish Values, Comment Number 1 (“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.”).
\textsuperscript{1373} Id.
design or operations should impacts be different than predicted or if standards are exceeded. The monitoring plan should describe the process and environmental monitoring that would occur during construction, operations, and closure for all project components and include monitoring locations, parameters, frequency, and objectives. Please see our scoping comments related to monitoring. 1374

The Corps improperly dismissed these concerns, telling EPA that details on BMPs and monitoring will come at a later date, after NEPA review, and vaguely attested that the effects of these future plans on impacts were assessed in Chapter 4: “Specific details on compliance monitoring and a detailed monitoring plan(s) will be developed during the State permitting process. For impact analysis, monitoring that would be required by standard permit conditions or BMPs such as groundwater monitoring around TSFs, blockage of culverts, erosion, and effluent water quality have been considered when assessing impacts in Chapter 4- Environmental Consequences.” 1375

The Corps, by waiting until after the completion of the NEPA process for specific details on BMPs, monitoring, and mitigation, has failed to take a hard look at the effectiveness of any such measures in the Draft EIS. As noted above, the Corps’ reliance on adaptive mitigation cannot fulfill their obligation to take a hard look at the project’s proposed BMPs, monitoring, and mitigation and effectiveness to limit the direct, indirect, and cumulative impacts of the proposed project on the human environment.

VI. NEPA ANALYSIS INADEQUATE TO SUPPORT REQUIRED PERMITTING UNDER OTHER FEDERAL LAWS

As explained in Section V.G above, an agency cannot comply with NEPA if the underlying documentation has not itself been submitted for the agency and public to review. Indeed, “tiering to a document that has not itself been subject to NEPA review is not permitted, for it circumvents the purpose of NEPA.” 1376 For the proposed Pebble Mine Project, the U.S. Coast Guard (USCG) and U.S. Bureau of Safety and Environmental Enforcement (BSEE) are two additional federal decision-makers with permitting authority over the project. 1377 USCG has authority over locations and clearances of bridges and causeways in and over

1374 EPA Comments – Pebble Project Preliminary Draft EIS, Chapter 2 – Alternatives, Comment Number 59.
1375 Id.
1376 Kern v. BLM, 284 F.3d 1062, 1073 (9th Cir. 2002). See Northcoast Envt’l Center v. Glickman, 136 F.3d 660, 670 (9th Cir. 1998) (explaining that, “[a]lthough CEQ procedures allow agencies to incorporate by reference certain materials to cut down on the bulk of an EIS, they cannot ‘tier’ their site-specific EISs to the broader POC program where the program itself has not been subject to NEPA procedures”).
1377 Draft EIS, Executive Summary, at page 1.
navigable waters while BSEE authorization is required for the natural gas pipeline right-of-way over the Outer Continental Shelf of Cook Inlet.  

The Corps, USCG, and BSEE are planning to sign a Joint Record of Decision. However, as described below, the NEPA process is currently inadequate to support approval decisions from USCG and BSEE. These agencies are required to ensure their decisions comply with NEPA, separate and apart from the Corps’ decision and NEPA process. And, because PLP has failed to provide USCG and BSEE with the necessary permit applications and project details prior to issuance of this Draft EIS, these agencies cannot tier their NEPA compliance from this NEPA document and process. Should USCG or BSEE believe it squarely has a permit application before it (a point we do not concede given the facts below), those agencies must deny the permits and choose the no action alternative.

To comply with NEPA, USCG and BSEE must conduct their own public processes once PLP submits the necessary permit applications, baseline data, and project plans to those agencies. USCG and BSEE cannot sign a Joint ROD with the Corps unless they comply with NEPA by requiring this information and conducting their own NEPA public processes. In the alternative, and to provide for holistic project review, the Corps as the lead NEPA agency can and should require PLP to submit its project plans and permit applications to USCG and BSEE, incorporate this information into a new, revised Draft EIS, and reissue that revised Draft EIS for public review and comment.

A. U.S. COAST GUARD PERMITTING UNDER RIVERS AND HARBORS ACT

The proposed Pebble Mine Project would require USCG approval for two large bridges crossing navigable waters of the Newhalen River and Gibraltar River. On the Newhalen River, PLP is proposing to construct a 575-foot long single span, two-lane bridge and on the Gibraltar River, PLP is proposing to construct a 470-foot long single span, two-lane bridge. According to the State of Alaska, both rivers are navigable, and as such PLP has identified both rivers as requiring USCG approvals.

Section 10 of the Rivers and Harbors Act prohibits the unauthorized obstruction or alteration of any navigable water of the United States, including the building of bridges. USCG requires information on direction and strength of currents, the heights of the high and low

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1379 Draft EIS, Executive Summary, at page 1.
1380 Draft EIS, page 2-42.
1382 See, email from James Fueg, PLP, to James Helfinstine and David Seris, USCG (Nov. 21, 2018).
1384 33 C.F.R. § 115.50(h)(2)
water marks, and USCG may impose necessary conditions relating to the construction, maintenance, and operation of these bridges in the interest of public navigation.

As it now stands, the information provided by PLP is woefully inadequate for USCG to do the analysis legally required by their agency. There is not nearly enough information available for USCG to impose conditions relating to the construction, maintenance of operations of these bridges, or make any determination relating to PLP’s ability to operate these bridges in a manner that protects the public interest. Given the volatility of seasonal river heights in this region and the company’s plans to transport highly-toxic materials over these salmon-bearing waters, it is critical that bridges be well-designed and follow sound construction techniques, and it is would be more effective and efficient to analyze the bridge permitting with the 404 permitting process.

As examples of missing information, there is no information on bridge clearances over navigable waters. There is no discussion of stream flow or direction of currents, bridge construction or reclamation techniques. The bridges that will need piers driven into waterway are not identified. This lack of important information is unacceptable. Several navigable rivers that will require USCG-permitted bridges are important for recreation and subsistence activities.

As of the Draft EIS, PLP has not submitted to USCG a permit application for its proposed bridge crossings. As of November 2018, PLP has only presented USCG with “some concepts … to initiate the process … to see if there were any concerns before we advance more detailed work,” recognizing that the drawing packages presented to USCG “do not represent full application packages.” PLP has also noted that its plans for bridge crossings continue to change “from those presented in the original 404 application.”

Because PLP has not submitted its required Rivers and Harbors Act permit applications to USCG, because its bridge plans are incomplete and changing, and because the Draft EIS lacks details related to PLP’s plans to build bridges over navigable waters (indeed, the Draft EIS completely fails to mention this approval is required for Gibraltar River), USCG cannot rely on this Draft EIS to meet its NEPA obligations. USCG must either conduct its own, separate NEPA process or, preferably, the Corps would revise the Draft EIS once PLP submits its required bridge permit applications to USCG and reissue the revised Draft EIS for public comment. To do anything less would fail to comply with NEPA obligations.

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1385 Id. § 115.50(h)(3)
1386 U.S. Coast Guard, Bridge Permitting Guide 3 (2016).
1387 See, email from James Fueg, PLP, to James Helfinstine and David Seris, USCG (Nov. 21, 2018).
1388 Id.
B. OUTER CONTINENTAL SHELF LANDS ACT EASEMENT/RIGHT OF WAY

The proposed Pebble Mine Project would require approval from BSEE for a right-of-way (ROW) for placement of a natural gas pipeline across the Cook Inlet Outer Continental Shelf (OCS). To support this decision process, BSEE will require very specific environmental information from PLP, including, among other items:

- Plats drawn to scale showing project major features and data
- Water depths
- Route
- Length in federal waters
- Width of right-of-way
- Product to be transported with anticipated gravity or density
- Burial depth
- Direction of flow
- Coordinates of key points
- Location of other pipelines
- Terminal points
- Schematic drawing detailing the pipeline design
- Design precautions took to enable the pipeline to withstand the effects of water currents, storm or ice scouring, soft bottoms, mudslides, earthquakes, permafrost, of other environmental factors
- Shallow hazards survey report

PLP has not provided BSEE any of this required information. The Corps has recently noted that PLP’s engineering surveys for BSEE, originally planned for summer 2018 did not occur “due to weather constraints, this work was not completed in 2018.” Indeed, PLP was in the field during this Draft EIS comment period to collect some of this data. Moreover, a proposed pipeline route has not yet been selected. The Draft EIS fails to disclose or analyze any of the information required for BSEE to grant a ROW to PLP. Therefore, this Draft EIS fails to offer the public an opportunity to comment on BSEE’s ROW approval in any meaningful way. BSEE cannot rely on this Draft EIS to fulfill its NEPA obligations. BSEE must either conduct its own, separate NEPA process or, preferably, the Corps would revise the Draft EIS once PLP submits its required ROW applications to BSEE and reissue the revised Draft EIS for public comment. To do anything less would fail to comply with NEPA obligations.

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1389 30 C.F.R. Part 250, Subpart J.
1390 30 C.F.R. § 250.1007.
1391 RFI 025a, 2019 Offshore Cultural Resources Survey Data (sent to PLP on March 1, 2019, response requested by July 15, 2019).
VII. COMMENTS ON THE NATIONAL HISTORIC PRESERVATION ACT SECTION 106 CONSULTATION

BBNC appreciates the opportunity to comment and for our inclusion as a consulting party in the NHPA process. BBNC has commented to the Corps in the past on our concerns with the NHPA consultation process. We echo our concerns with that process here and note that we are concerned that in the three months since we expressed concerns with the below issues, the Army Corps has taken no measures to correct this process. Indeed, as stated by the Advisory Council on Historic Preservation in its recent decision to formally participate in consultation to develop a Programmatic Agreement to address the resolution of the proposed project’s adverse effects to historic properties, “this undertaking has the potential to present procedural problems and issues of concern” to tribes.\textsuperscript{1392}

Given the serious deficiencies in the cultural resources data collected to date and a lack of confidential government-to-government consultations with the tribes to better inform this process, BBNC reserves an in-depth review until these issues are resolved.

A. IMPROPER GEOGRAPHIC LIMITATION OF THE UNDERTAKING, PERMIT AREA, AND AREA OF POTENTIAL EFFECTS

BBNC adheres to certain core values, which, among other things, direct BBNC to “Respect the people, land and natural resources that are the basis for our culture and the Native way of life” and “Responsibly manage natural resources, prioritizing the cultural and economic value of the Bristol Bay fishery.”

Numerous BBNC shareholders own native allotments downstream of the proposed project, along the Mulchatna and Nushagak Rivers that they use as fish camps. These lands are of important cultural significance to the people of Bristol Bay and to BBNC’s shareholders. The Corps has improperly limited the NHPA process to exclude analyzing impacts to cultural resources and historic properties downstream of the mine.\textsuperscript{1393} The Draft EIS notes spill scenarios that would result in impacts to the Mulchatna and Nushagak Rivers,\textsuperscript{1394} however, there is no description of cultural resources within this area potentially affected by the proposed Pebble Mine Project.

NHPA regulations direct the Army Corps to “[d]etermine and document the area of potential effects,” meaning “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.”\textsuperscript{1395} To-date the Army Corps and the permit applicant have failed to

\textsuperscript{1392} Letter from John M. Fowler, Executive Dir., Advisory Council on Historic Preservation, to R.D. James, Ass’t Sec. for the Army for Civil Works (May 9, 2019).
\textsuperscript{1393} Letter from Shane McCoy, Program Manager U.S. Army Corps of Engineers, to Jason Metrokin, BBNC (March 22, 2019), enclosure 1 (“the USACE has determined that the undertaking for analysis in the Section 106 process is the direct footprint of the entire project.”).
\textsuperscript{1394} Proposed Pebble Project Draft EIS, at Chapter 4.27 [hereinafter “Draft EIS”].
\textsuperscript{1395} 36 C.F.R. §§ 800.4(a)(1), 800.16(d).
conduct any efforts to identify cultural and historic resources downstream of the embankments associated with the proposed Pebble Mine.

Given that the Draft EIS spill scenarios analysis explicitly notes potential direct impacts to the Mulchatna and Nushagak Rivers and there are known native allotments and cultural significance ascribed to these rivers and lands, these areas cannot be ignored for purposes of NHPA Section 106 consultation. BBNC recommends that the Corps conduct confidential government-to-government consultation regarding the Mulchatna and Nushagak River areas and conduct similar identification efforts that have already been implemented at the mine site itself, including a review of the Alaska Heritage Resources Survey, BIA Native Allotments, and Place Names; field/survey efforts; and interview identification.

**B. MISSING CULTURAL RESOURCES AND HISTORIC PROPERTIES DATA REQUIRES A REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT UNDER NEPA**

To-date, the Corps has held only four meetings with consulting parties in the NHPA process, has failed to conduct confidential government-to-government consultation on cultural resources, and delayed beginning the NHPA consultation process until October 2018 when the proper time to begin the process was during NEPA scoping in spring 2018. The Corps’ failure to conduct a proper and early NHPA process has led to a myriad of issues with its Draft EIS. Indeed, as the Advisory Council on Historic Preservation has noted to the Corps:

> the chapters on cultural resources and on historic properties demonstrate the incomplete nature of the effort to identify cultural resources and historic properties that may be affected by the referenced undertaking. The chapters remain vague in articulating the extent of the identification efforts that still need to be carried out in the context of the Permit Area to be specified by the Corps and the associated Area of Potential Effects (APE) that will be delineated in consultation with SHPO, tribes, and other consulting parties.

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According to the Draft EIS, one of the essential pieces of information missing and yet critical for the public to review is cultural resources and historic properties data.1397 The Draft EIS points to examples of missing cultural resources and historic properties information, including:

- “field work scope was limited to investigating lands within the ‘claim block boundary’”1398

1397 Draft EIS, p. 3.7-2 (“Data and analytical gaps will be addressed through ongoing research, including input from public comments, and will allow for additional characterization of the affected environment for cultural resources in the Final EIS (FEIS).”).
1398 *Id.*
• “Field surveys did not cover the entire mine site or any of the project components outside of the mine lease area.”

• “Public input and additional research may yield the identification of additional place names and contribute to better understanding the cultural significance of these places.”

• “The transportation corridor for Alternatives 2 and 3, including the pipeline route, and the Diamond Point port components have not been surveyed or otherwise investigated for cultural resources.”

• “The proposed transportation and pipeline corridors for each alternative and Diamond Point have not been systematically researched or surveyed for historic properties.”

The Draft EIS admits that the NHPA process being conducted after release of the Draft EIS “may result in the identification of currently unknown cultural resources.” Failure to include cultural resources data in the Draft EIS means the public, BBNC, and our shareholders cannot assess the proposed alternatives for the purposes of NEPA in any meaningful way. Each NEPA alternative poses unique and different impacts to a variety of different cultural resources that are un-described and unidentified to date.

CEQ regulations for Draft EISs state that “[i]f a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion.” Furthermore, as the United States Supreme Court and 9th Circuit have held, agencies cannot wait until the Final EIS stage to disclose such information, as doing so “frustrat[es] NEPA’s goal of allowing the public the opportunity to ‘play a role in ... the decisionmaking process.’”

If the Corps continues to a final EIS without providing the public an opportunity to comment on this missing information, it will be in violation of NEPA’s public review mandate. BBNC urges the Corps to require PLP to complete these missing cultural resources surveys and data collection efforts, conduct cultural resources identification as described in section I of this letter, and then issue a revised Draft EIS for public review and comment, detailing cultural resources at issue for each Draft EIS action alternative and downstream of the proposed project.

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1399 Id.
1400 Id.
1401 Id. at p. 3.7-3.
1402 Id. at p. 3.8-2.
1403 Id. p. 3.7-3.
1404 40 C.F.R. §1502.9(a).
C. THE CORPS MUST CONDUCT CONFIDENTIAL GOVERNMENT TO GOVERNMENT CONSULTATIONS

As noted throughout this letter, failure to conduct confidential government to government consultations has led to insufficient identification of cultural and historic resources potentially impacted by the proposed Pebble Mine Project. Both the Alaska State Historic Preservation Office and Bristol Bay tribes have requested that the Corps conduct these confidential consultations.\textsuperscript{1406} the NHPA regulations direct the Corps to conduct consultations with tribes taking into account confidentiality concerns.\textsuperscript{1407} and to our knowledge the Corps has not provided this opportunity.\textsuperscript{1408} We echo the concerns of the State and Bristol Bay tribes that the Corps has not provided this opportunity to-date and urge the Corps to hold confidential government to government consultations with all 35 tribes impacted by the proposed project, including impacts downstream of the proposed project. The Corps should conduct these consultations and revise the Cultural Resources Summary Report and Draft EIS accordingly and allow for renewed comment opportunities under NHPA and NEPA.

VIII. CONCLUSION

The people and communities of Bristol Bay economically and culturally depend on the region’s salmon fisheries. The proposed Pebble Mine Project poses fundamental risks to the salmon fisheries of the region and the economic, cultural and subsistence benefits those fisheries provide. At its most fundamental, PLP’s plans for mining are unacceptable and it has had far more than ample opportunity over well more than a decade to gain social license and legal approval for its plans, but has failed to do so.

Pebble is among the most controversial projects ever proposed in Alaska. It requires a well-informed and thorough permitting process that allows the public to understand “the significant issues to be analyzed in depth” and identify “the significant issues related to a proposed action.” To date, the Corps has provided the public with an shockingly expedited process on a project that simply was not prepared to enter permitting. PLP’s permit application is lacking sufficient and recent environmental baseline data for many project components, adequate wetlands delineation, an economic feasibility report, a compensatory mitigation plan, and many other specific issues identified by the Corps in the Draft EIS and in documentation post-dating the release of the Draft EIS.

\textsuperscript{1406} See, e.g., Meeting Notes from Pebble Project EIS National Historic Preservation Act Section 106 Consulting Parties Meeting (Feb. 5, 2019) (counsel on behalf of tribes: “stated that in order to capture the information properly, the USACE, using staff who meet the Secretary of the Interior Standards, needs to conduct in person interviews and consultations with the tribes and communities,” State Historic Preservation Office: “since the interviews were conducted on individual basis, and not at the direction of tribal councils, then there still needs to be actual tribal consultation.”).

\textsuperscript{1407} 36 C.F.R. § 800.4(b)(1).

\textsuperscript{1408} Notably, no government-to-government consultations were referenced in the draft Cultural Resources Report as a source of information to help inform the identification of cultural and historic resources.
The insufficiency of PLP's current permit application, combined with the project's massive, irreversible impacts to the Bristol Bay fishery and way of life, failure to comply with the Clean Water Act, and failure to establish the project is in the public’s interest, warrant a denial of PLP’s 404 permit application.

In addition, the Corps’ Draft EIS is so deeply inadequate, and the timeline to review the Draft EIS and studies and reports relied upon so unreasonably short, that it prevents meaningful analysis and review by the public. The Corps’ Draft EIS and process violates NEPA in eight key ways: (1) improper public process has stunted the NEPA scoping process and the Draft EIS review (2) the Draft EIS scope of analysis was improperly narrowed by the Corps’ improper purpose and need and its failure to independently assess the need for the project; (3) the Draft EIS improperly segments the Pebble Mine project; (4) the Draft EIS fails to include a reasonable range of alternatives, consisting instead of mere project variants and only a single viable transportation corridor alternative; (5) the Draft EIS fails to include key information, baseline surveys, advanced project designs, and analysis essential for public review; (6) the Draft EIS improperly relies on and tiers its environmental analysis to future state and federal permits that have not yet been applied for or made available for public review and will not be incorporated into the NEPA process for public review; (7) the Draft EIS fails to take a hard look at the myriad impacts associated with the proposed Pebble Mine Project; and (8) the Draft EIS fails to adequately describe and assess mitigation measures that might lessen project impacts. To comply with NEPA, the Corps must substantially revise the Draft EIS and re-release it for public comment.

July 1, 2019

[Signature]
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