

January 2023

**RESPONSE TO COMMENTS ON
U.S. ENVIRONMENTAL PROTECTION AGENCY
CLEAN WATER ACT SECTION 404(c) DETERMINATION
FOR THE PEBBLE DEPOSIT AREA, SOUTHWEST ALASKA**

U.S. Environmental Protection Agency
Office of Water

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Acronyms and Abbreviations

ANCSA	Alaska Native Claims Settlement Act
ANILCA	Alaska National Interest Lands Conservation Act
BBA	Bristol Bay Assessment
CFR	Code of Federal Regulations
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
EPA	United States Environmental Protection Agency
FD	Final Determination
FEIS	Final Environmental Impact Statement
ITRB	Independent Tailings Review Board
NDM	Northern Dynasty Minerals Ltd
NEPA	National Environmental Protection Act
NFK	North Fork Kaktuli River
OIG	Office of Inspector General
OMB	U.S. Office of Management and Budget
PD	Proposed Determination
PEA	Preliminary Economic Assessment
PLP	Pebble Limited Partnership
ROD	Record of Decision
SFK	South Fork Kaktuli River
TEK	Traditional Ecological Knowledge
USACE	United States Army Corps of Engineers
USC	United States Code
USGS	U.S. Geological Survey
UTC	Upper Talarik Creek

INTRODUCTION

This Response to Comments document is being released as part of the *Final Determination of the U.S. Environmental Protection Agency Pursuant to Section 404(c) of the Clean Water Act, Pebble Deposit Area, Southwest Alaska* (FD) (EPA 2023a). The FD represents the U.S. Environmental Protection Agency's (EPA's) final step in its review process under Section 404(c) of the Clean Water Act (CWA) to prohibit the specification of and restrict the use for specification of certain waters in the South Fork Koktuli River (SFK), North Fork Koktuli River (NFK), and Upper Talarik Creek (UTC) watersheds as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit.

In May 2022, EPA Region 10 published in the *Federal Register* a notice of availability for the Proposed Determination (PD) under Section 404(c) of the CWA regarding the Pebble deposit (87 FR 32021, May 26, 2022). The notice initiated a public comment period that ended on July 5, 2022. On June 16 and 17, 2022, EPA Region 10 held three public hearings on the PD: two in-person hearings in the Bristol Bay region (in Dillingham and Iliamna) and one virtual hearing. More than 186 people participated in the three hearings, 111 of whom provided oral statements.

EPA Region 10 received requests to extend the public comment period, as well as requests not to extend the public comment period. EPA Region 10 considered each of these requests and found good cause existed pursuant to 40 CFR 231.8 to extend the public comment period through September 6, 2022 (87 FR 39091, June 30, 2022).

On September 6, 2022, EPA Region 10 published in the *Federal Register* a notice to extend the period for the EPA Region 10 Regional Administrator to evaluate public comments. As detailed in the notice, EPA Region 10 found good cause existed pursuant to 40 CFR 231.8 to extend the time period provided in 40 CFR 231.5(a) to either withdraw the PD or to prepare a Recommended Determination (RD), through no later than December 2, 2022, to help ensure full consideration of the extensive administrative record including all public comments (87 FR 54498, September 6, 2022).

EPA Region 10 completed its review of the extensive administrative record, including all public comments, and the Regional Administrator determined that the discharge of dredged or fill material associated with developing the Pebble deposit would be likely to result in unacceptable adverse effects on anadromous fishery areas and, thus, decided to prepare an RD. The RD, along with the administrative record, was transmitted to EPA's Assistant Administrator for Water at EPA Headquarters on December 1, 2022, for review and final action (i.e., FD).

In developing the RD and FD, EPA reviewed and considered all on-time comments posted by the Docket.¹ To prepare this Response to Comments, EPA prepared a compendium of comments submitted on the 2022 PD, which are excerpted and organized according to a set of specific topics. EPA then developed responses for the comments in each topic. Although some portions of the FD are paraphrased in this document to respond to comments, the FD itself is the definitive statement of the rationale for EPA's action. To the extent there is any conflict between EPA's responses to comments in this document and the FD, the FD governs. In many instances, particular responses presented in the Response to Comments include cross-references to responses or information on related issues that are located either in (1) the FD and its appendices; (2) the *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b); (3) the U.S. Army Corps of Engineers (USACE) Final Environmental Impact Statement (FEIS) (USACE 2020a) and Record of Decision (ROD) (USACE 2020b); or (4) elsewhere in the Response to Comments. The Response to Comments document, together with the rest of the administrative record, should collectively be considered EPA's response to all significant comments submitted on the PD and RD.

Comment Count and General Opinion

Over half a million comments (582,090) were submitted to EPA by the close of the public comment period, with the majority (579,040) from mass mailing campaigns that provided almost identical content. Table 1 shows the comment counts for all comments submitted to the Docket. The majority of comments (>99%) expressed support for the PD (Table 2).

Table 1. Total Comment Counts.			
Submission	Count	Total	Note
Unique	1,536	2,564 (Posted by Docket)	Includes duplicate or similar letters.
Mass Mailing Campaign ²	92		Unique mass mailing campaigns.
Modified Mass Mailers	936		Modified mass mailing campaigns.
Docket Count	579,040		Similar mass mailing campaigns.
DoNotPost ³	486		Received by Docket but were not posted.
Total Comments Received	582,090		Total comments received by Docket This does not include the 116 comments received during three public hearings.

¹ In developing the FD, EPA also considered additional comments submitted by the Pebble Limited Partnership (PLP) and the Alaska Department of Natural Resources (ADNR) in December 2022, as part of consultation with EPA on the RD. See Section 2.2.2 of the FD for a summary of this consultation process.

² The Docket identified a total of 92 different Mass Mailing Campaigns. The Docket tracked how many letters it received from each campaign and reflected those numbers in its overall comment counter but only posted one copy of the letters from each of the 92 Mass Mailing Campaigns.

³ Comments receive the DoNotPost status from Docket staff for the following reasons: (1) comments from a child under 13 years of age, (2) comments from EPA employees or contractors (deliberative materials), (3) personally identifiable information, (4) vulgar language, (5) duplicate comments, and (6) threatening comments.

Table 2. All Comments Feedback.

All Comments	Count	Percentage
Positive	576,432	99%
Negative	487	0%
Neutral	7	0%
Mixed	4	0%
Undetermined	8	0%
Wrong Docket ⁴	4,666	1%
Total ⁵	581,604	100%

Table 3 shows the categories of commenters and the numbers of comments received from each commenter category.

Table 3. Number of Comments by Commenter Category.

Commenter Category	Comment Count	Public Hearing Count
Federal Government Agencies	1	0
State Government Agencies/Elected Officials	9	1
Tribal Governments, Representatives, and Consortiums	31	10
Local Government Agencies/Elected Officials	1	2
State/Tribal and Local Agency Association	1	3
Congressional Delegates	0	0
Alaska Native Corporations	3	6
Industry - Mineral Extraction	15	1
Industry - Fisheries/Fishing Tourism	13	3
Industry - Non-fishing Tourism/Outdoor Recreation	4	1
Industry - Restaurant/Food Processing/Food Sales	3	0
Industry - Jewelry	0	0
Industry - Other	9	1
National Environmental NGOs	20	10
Alaska NGOs	12	4
Other NGOs	5	0
Faith-Based Groups	1	0
Academia/ Professional Societies	3	0
Private Citizen - Expert	22	3
Private Citizen - Environmental Justice	0	0
Private Citizen - Watershed Visitors	99	0
Private Citizen - General	1,256	71
Mass Mailer ⁶	1,028	N/A
Wrong Docket	28	N/A
Total	2,564	116

NGOs = nongovernmental organizations; N/A = not applicable

⁴ These comments were mistakenly submitted to the wrong Docket by the commenter.

⁵ The total does not include the 486 comments that were not posted or the 116 public hearing comments.

⁶ Mass Mailer count includes modified mass mailers.

Formatting of the Response to Comments

This Response to Comments document contains excerpts from comment letters or transcriptions from public hearings that were identified as unique and substantive. These excerpts were copied exactly as they were provided to EPA unless the comment included information claimed to be Confidential Business Information or other information, the disclosure of which is restricted by statute. These excerpts were then organized according to a pre-specified set of topics. The following symbology was added to comments where appropriate.

[text] – Brackets indicate that this text was provided by the commenter in the comment letter as a footnote or otherwise an annotation to the comment excerpt.

{ text } – Braces indicate this text is included elsewhere for response in EPA’s Response to Comments document, but the text is also included within this excerpt to provide additional context for the excerpt.

(...) – Ellipses indicate that text in the comment letter was omitted between paragraphs. This may be because the text was captured in another topic or the text was not substantive.

EPA developed responses for the comments in each topic, which appear in bold text in this Response to Comments document.

TOPIC 1. GENERAL

1.A General Support for the 2022 Proposed Determination

1.A.1 United Tribes of Bristol Bay (Doc. #0140, p. 1)

I'm writing to call upon the Environmental Protection Agency (EPA) to fulfill its responsibility to complete Section 404 (c) of the Clean Water Act process and reach a Final Determination for Bristol Bay this year. I support permanently protecting this national treasure from the threat of mines like Pebble. The EPA cannot allow toxic mining waste to be stored at the headwaters of our fishery.

(...)

The threat of toxic large-scale hard rock mining, such as the proposed Pebble Mine, will continue to loom over Bristol Bay until real permanent protections are secured for the region. Years of scientific study and review and a robust administrative record all support the EPA protecting this national treasure. Please finalize Clean Water Act protections for the region this year. Future generations should not have to live with the threat of mining that would devastate our cultures, communities, and sustainable economy. Please finish the job and ensure that Bristol Bay's pristine lands and waters are protected in perpetuity.

EPA Response

EPA acknowledges that there are long-standing concerns about the potential effects on aquatic resources from discharges of dredged or fill material associated with developing the proposed Pebble mine. The potential effects on aquatic resources from the development of the Pebble deposit have been the subject of study for more than a decade. The Final Determination (FD) is based on an extensive record of scientific and technical information.

The Bristol Bay watershed is an area of unparalleled ecological value, boasting wild salmon diversity and productivity unrivaled anywhere in North America. EPA recognizes the ecological value and importance of the Bristol Bay region's wild salmon populations, particularly for Alaska Native subsistence, culture, and traditions. See Section 3 of the FD for more information about Bristol Bay's ecological resources.

EPA has determined that the discharge of dredged or fill material associated with developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the South Fork Koktuli River (SFK), North Fork Koktuli River

(NFK), and Upper Talarik Creek (UTC). Section 4 of the FD provides the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas.

Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD.

1.A.2 Hazel Nelson (Doc. #2667-15, p. 43–44)

In releasing the proposed revisions, EPA stated as one of its justifications, the need to avoid another multi-year NEPA and CWA Section 404 Review Process for future mining plans. Thank you for acknowledging this great burden that Pebble has put on the people of Bristol Bay.} We need finality so that we can focus on building a future for our people, so that less of our people will think that they need the mine. You know, we need to work on establishing a strong economic force for our own people. And the only way we could do that is if we could focus on the future, not fighting Pebble.

EPA Response

EPA agrees with the commenter that, based on an extensive and carefully considered record, the FD helps avoid unnecessary expenditure of resources. See also EPA’s response to comment 1.A.1.

1.A.3 Sitka Conservation Society (Doc. #0464, p. 1)

The Bristol Bay fishery is extremely important to many residents of Southeast Alaska for sport and commercial fishing. Mining at the headwaters of Bristol Bay would directly threaten the natural abundance of these waters and perpetuate the unsustainable cycle of “boom and bust” industries in Alaska.

EPA Response

EPA agrees that the Bristol Bay watershed supports a number of sustainable economies, including commercial and sport fishing (see Section 3 of the FD). Section 4 of the FD describes the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas.

1.A.4 U.S. Fish and Wildlife Service (Doc. #0161, pp. 1, 2)

The EPA’s Proposed Determination would restrict discharges for the construction and routine operation of a mine at the Pebble deposit anywhere in the SFK, NFK, and UTC watersheds that would either individually or collectively result in adverse effects similar or greater in nature and magnitude to those associated with the 2020 U.S. Army Corps of Engineers (USACE) permit application in these watersheds. The USACE denied the permit application due to unavoidable adverse impacts that would result in significant degradation to aquatic resources and determined the project would be contrary to the public interest (USACE 2020).

According to the Proposed Determination, the EPA is exercising its authority under section 404(c) of the Clean Water Act and implementing regulations at 40 Code of Federal Regulation (CFR) Part 231 due to unacceptable adverse effects on anadromous fishery areas in the Bristol Bay watershed that could result from discharges of dredged or fill material associated with mining the Pebble deposit. The EPA makes four independent unacceptability findings, each of which is based on one or more factors, including the pristine condition and productivity of anadromous habitat throughout the SFK, NFK, and UTC watersheds; the large amount of permanent loss of anadromous fish habitat; the degradation of additional downstream spawning and rearing habitat for salmon due to the loss of ecological subsidies provided by the eliminated streams, wetlands, and other waters; and the resulting erosion of both habitat complexity and biocomplexity within the SFK, NFK, and UTC watersheds, which are key to the abundance and stability of salmon populations within these watersheds.

(...)

The EPA's Proposed Determination would reduce adverse impacts of mining on the Bristol Bay watershed, including the Nushagak and Kvichak River systems, and would provide protection from discharges that could result in unacceptable adverse effects on the Service's trust resources within these watersheds.

EPA Response

EPA agrees that the extensive and carefully considered administrative record supports the FD. See also EPA's response to comment 1.A.1.

1.A.5 Thomas G. Yocom (Doc. #0182, pp. 2–3)

I, for one, would challenge EPA to try to identify a "more environmentally damaging" practicable alternative for a copper mine than mining the Pebble Deposit, at least insofar as impacts to "waters of the United States" and "special aquatic sites" are concerned. Exploiting the Pebble Deposit would likely be the most damaging copper mine ever contemplated in the United States in these regards. Accordingly, if the 20-year mining plan proposed by PLP to mine the Pebble Deposit was, in fact, the LEDPA, then any future proposal to mine the deposit would also cause or contribute to significant degradation of the nation's waters, be likely to violate water quality standards [40 CFR 230.10(b)], and be unmitigable.

EPA Response

See EPA's response to comment 1.A.1.

As described in Section 5.3 of the FD, proposals to discharge dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to this determination will remain subject to all statutory and regulatory authorities and requirements under Clean Water Act (CWA) Section 404.

1.A.6 Center for American Progress (Doc. #0863, p. 1)

The Center for American Progress asks that the Environmental Protection Agency (EPA) issue a permanent veto of Pebble Mine through the Clean Water Act's Section 404(c) authority. Permanently withdrawing the Bristol Bay area from the threat of pollution as a mining disposal site is a necessary step in protecting one of Alaska's most important and productive watersheds. Withdrawing the area would help protect and support the Alaskan economy, the Yup'ik, Dena'ina, and Alutiiq people, and the essential ecosystems of the Bay.

(...)

Permanent protections would be a win for Tribes, Alaska's economy, climate resiliency, sustained jobs, and remote ecosystems. The Center for American Progress strongly urges the EPA to issue a withdrawal under section 404(c) of the Clean Water Act.

EPA Response

See EPA's response to comment 1.A.1.

With respect to the commenter's request for EPA to "issue a withdrawal" under CWA 404(c), EPA assumes that the commenter is referring to EPA's authority to prohibit, deny, restrict, or withdraw specification of disposal sites where discharges of dredged or fill material into such disposal sites would result in unacceptable adverse effects. As described in Section 5 of the FD, EPA is prohibiting and restricting the specification of waters of the United States within the Defined Area for Prohibition and the Defined Area for Restriction as disposal sites for certain discharges associated with the development of the Pebble deposit. The FD does not withdraw the specification of disposal sites for dredged or fill material.

1.A.7 Environment America (Doc. #1746, p. 1)

Bristol Bay watershed is home to the largest sockeye salmon fishery in the world and more than 40 mammal and 190 bird species. It is also one of the last remaining truly wild spaces, with no roads in or out of the bay.

Pebble Mine threatens this wild place and the wildlife that depend on it. The EPA should veto the mine and take steps to permanently protect this unique ecosystem.

EPA Response

See EPA's response to comment 1.A.1. See also EPA's response to comment 6.A.2. and Section 6 of the FD for EPA's discussion of wildlife.

1.A.8 SalmonState (Doc. #0858, pp. 2–3)

Bristol Bay is a Unique Landscape and is Important to the State of Alaska and the United States as an Irreplaceable Resource of Recreational, Ecological, Cultural, and Economic Importance, and therefore EPA Should Prepare a Recommended Determination.

EPA Response

See EPA's response to comment 1.A.1.

1.A.9 American Fisheries Society (AFS) and Alaska Chapter of AFS (Doc. #0813, p. 1)

Large-scale mining in the watershed would cause irreversible impacts to this pristine habitat and the valuable fisheries it supports.

EPA Response

See EPA's response to comment 1.A.1.

1.A.10 American Fisheries Society (AFS) and Alaska Chapter of AFS (Doc. #0813, p. 1)

We have long-standing concerns about the development of a mine in Bristol Bay, a project whose impacts to fisheries and the watershed cannot be adequately reduced or mitigated.

EPA Response

See EPA's response to comment 1.A.1.

1.A.11 American Fisheries Society (AFS) and Alaska Chapter of AFS (Doc. #0813, pp. 1, 3)

The American Fisheries Society and the Alaska Chapter of AFS fully support the EPA's use of its authority under section 404(c) of the Clean Water Act to restrict the use of certain waters in the NFK, SFK, and UTC watersheds in southwest Alaska as disposal sites for dredged or fill material in connection with mining the Pebble deposit due to unacceptable adverse effects on anadromous fish.

(...)

We encourage the EPA to move quickly to finalize this process to ensure that these valuable resources are protected.

EPA Response

See EPA's response to comment 1.A.1.

1.A.12 National Audubon Society (Doc. #1745, pp. 1–2)

Alaska's Bristol Bay is vulnerable to dramatic climate changes as drought, winter warming, and seasonal flooding will alter the region. Instead of investing resources into destructive projects like Pebble Mine, we should be supporting programs that protect Alaska's communities and habitats and create a resilient future.

EPA Response

See EPA's response to comment 1.A.1.

1.A.13 Mass Mailing Campaign (Doc. #2565, p. 1)

As I recall, active mining would not produce a robust amount of jobs and be over in a couple of decades, leaving a huge scar upon the land and dangerous, toxic chemical ponds forever with the potential to rupture and poison the land and waters of Bristol Bay.

This is too big a risk for the greed of a few that want to potentially ruin this area for years to come and the people, animals, and fish that depend on this watershed.

EPA Response

See EPA's response to comment 1.A.1.

1.A.14 Cook Inletkeeper (Doc. #0794, p. 1)

The majority of Alaskans support EPA action to end the threat of Pebble and want to see Bristol Bay protected for good. It is time for the EPA to expedite the 404(c) process and finalize protections this year. The EPA's action must protect several critical sub watersheds: the North Fork Kaktuli, South Fork Kaktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon and are under threat from Pebble and large-scale mines like it.

Please finish the job and ensure that Bristol Bay's pristine lands and waters are protected in perpetuity.

EPA Response

See EPA's response to comment 1.A.1.

1.A.15 Cook Inletkeeper (Doc. #2664-13, pp. 11–12)

My comments are formed by two decades of research and monitoring of freshwater habitat in Cook Inlet and Bristol Bay salmon streams. And perhaps more importantly, as an Alaskan who has seen the flagrant lies and political games played by the Pebble Limited Partnership and Northern Dynasty. Over the years, I implore the EPA to finalize the 404(c) process and protect Bristol Bay, and veto the Pebble Mine and all its potential iterations.

EPA Response

See EPA's response to comment 1.A.1.

1.A.16 Cook Inletkeeper (Doc. #2664-13, p. 12)

The science is clear about the foreseeable impacts of a massive copper pit mine in the headwaters of the most productive sockeye salmon fishery left in the world. The science is clear that perpetual treatment of toxic mining wastewater in a seismically active area is unattainable.

EPA Response

See EPA's response to comment 1.A.1.

1.A.17 Veto Pebble Mine (Doc. #2557, p. 1)

If built, Pebble Mine would permanently poison Bristol Bay's waters and imperil the greatest wild salmon fishery left on Earth.

EPA Response

See EPA's response to comment 1.A.1.

1.A.18 Ivan Weber (Doc. #1029, p. 1)

The proposed 'Pebble' copper-nickel-gold sulfide metals mine project in southern Alaska is far too poisonous and chemically damaging to be allowed to happen! This is true for many reasons, most of them revolving around the inevitably devastating impacts of selenium and selenium compounds, among copper sulfide ore leach products, on wildlife --- fish, bird and mammal --- reproduction:

* Inevitable ecological devastation to critical wildlife species and populations, especially sockeye salmon and other commercially valuable and non-commercial fish and aquatic life to populate --- as well as feed --- much of the Western Hemisphere. It is widely known that more than 50% of the world's sockeye salmon originate in Bristol Bay!

* Migratory waterfowl and shorebirds, constituting a wondrous, teeming world of avian species in breathtaking numbers.

* Cultural foundations for indigenous peoples reaching back many hundreds of years, if not thousands, encompassing huge geographic areas of dominance by systems defined by food --- nowhere more so than by sockeye salmon --- systems that also utilize mammalian and other non-aquatic wildlife species and types in complex and enduring traditional systems.

* Profound risks to pervasive economies that cannot be replicated or remediated once poisoned, systems that will be doomed forever when killed by the devastating impacts to reproductive systems up and down the wildlife food chains in a hypothetically mined and sterilized world.

Beyond biological/ecological impacts to wildlife reproduction documented in scientific literature, the almost countless litany of neurological and other physiological ill effects on humans should inform us about health risks with which we should be completely familiar. Parkinson's Disease, epilepsy, and a suite of nervous system disorders yet only partially diagnosed are appearing in unrelenting fashion in my own personal health portfolio. Why should this be so? Perhaps explanations lie in the scientific subtleties of Superfund and contamination geochemistry.

EPA Response

EPA agrees that discharges from the proposed mine would likely alter water chemistry, which may affect fish and wildlife. See EPA's responses to comments 1.A.1 and 8.0.1. See also EPA's response to comment 6.A.2. and Section 6 of the FD for EPA's discussion of wildlife.

1.A.19 Ivan Weber (Doc. #1029, p. 3)

Throughout the enormous informational body constituted by reports, studies and plans for mines, generally, and the Pebble Mine, particularly, there is a pervasive avoidance of biophilia --- avoidance of love of life. This is typical of descriptions of mines and other macro-scale extractive projects. Avoidance of biophilia is not appropriate for actions that affect such widespread statistical samples of life! Sockeye salmon would be enough to stop the Pebble project, were it to come down only to a single species. Indeed, EPA and other Federal Agencies (USACE, etc.) should block the project in its tracks due to salmon, alone. Recognition of ecosystems, regional/global biogeography, and the critical interdependence of macro-scale biogeography and global climate stability render the Pebble Project completely untenable.

EPA Response

See EPA's response to comment 1.A.1.

1.A.20 Ivan Weber (Doc. #1029, p. 3)

PERVASIVE CONSISTENCY OF SELENIUM AND SELENIUM IMPACTS IN METAL SULFIDE COMPOUNDS IS INESCAPABLE: Selenium accompanies sulfur in variable quantitative ways, particularly in copper/nickel/gold/silver, lead/zinc, uranium, and other sets of metals compounds. While it is true that Selenium varies significantly in biogeochemical form and quantity, it is also true that there is little chance of escaping it. There is also little chance of escaping the biogeochemical impacts of Selenium, either in ecological manifestations or in human health impacts. When you choose to release Selenium into the environment, you nearly always consign ecosystems, wildlife, domestic animals, and humans to Selenium's generally unrelenting impacts.

To choose such a release into one of the planet's few remaining, large-scale populations of sockeye salmon would be reprehensible in the extreme!

EPA Response

See EPA's response to comment 1.A.18.

1.A.21 Ivan Weber (Doc. #1029, pp. 3–4)

Much has been written summarizing the economic impacts that would be likely were the Pebble Mine to be built, but little if any of this descriptive text approaches capturing either the actual cultural destruction or the true economic devastation that will occur. It's hard even to imagine a significant diminishment of sockeye salmon populations, much less such a decrease for an extended period of time. Were such a decrease to occur, it would constitute a shift of wealth from one set of cultures to another cluster, a shift from which recovery would be unlikely over a broad landscape, causing change toward indifference to trends such as climate change, biogeochemical contamination, and overall environmental stability.

It follows that extensive research and inquiry into the nature of the proposed Pebble Mine's long-term, in-depth impacts is essential, on an ongoing basis. Even if it were repeated frequently, however, this inquiry would be extremely unlikely to be successful at a depth that could yield meaningful conclusions.

(...)

This SHOULD be a choice that is driven first and foremost by conscience, biological ethics, inter-cultural awareness, and last, by resource economics and technological strategies. Instead, a case has been presented to us to dismiss impacts on salmon, the salmon-based indigenous economy, wildlife and wildlife-based classic Alaskan lifestyle and economies, or the almost sacred necessity to maintain it all as a system.

EPA Response

Economic-related issues are discussed in the document entitled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b) (referenced in Section 4.4 of the FD).

See also EPA's response to comment 3.E.1 and responses in Topic 6.F.

1.A.22 Charles Borbridge (Doc. #2097, p. 1)

I completely oppose the Pebble mine in any form and support permanent protection of Bristol Bay. Development of a large mine creates a foot print that damages streams and construction activity causes further damage.

EPA Response

See EPA's response to comment 1.A.1.

1.A.23 Charles Borbridge (Doc. #2097, p. 2)

Past actions and results are the best predictor of future actions and results. Despite assurances and claims from people in suits, mine funded studies, or proclamations from politicians, the following will absolutely happen if the mine is built. The mine will pollute the head waters of both the Kvichak and Nushagak rivers. The Pebble will not provide

(...)

support to try to maintain any structures that help prevent pollution. Given the passage of time measured in millennia, any dam structure will fail.

The only way to properly or responsibly develop the Pebble deposit is not to develop it.

EPA Response

See EPA's response to comment 1.A.1. See Section 6 of the FD for EPA's discussion of spills and failures. Water quality effects are discussed in Appendix B of the FD.

1.A.24 Jan Hurst (Doc. #0596, p. 1)

It is important that the pebble mine not be allowed to proceed. At some point this country must protect our resources (bear habitat, clean water and salmon to name just a few)

EPA Response

See EPA's response to comment 1.A.1.

1.A.25 Alec Connah (Doc. #0599, p. 1)

No Pebble Mine please. Do not destroy this priceless habitat.

EPA Response

See EPA's response to comment 1.A.1.

1.A.26 Deliadee A. Quebec (Doc. #0602, p. 1)

Please PROTECT the BEARS from Pebble Mine at Bristol Bay! Do not go forward with this project!

EPA Response

See EPA's response to comment 1.A.1. See also EPA's response to comment 6.A.2. and Section 6 of the FD for EPA's discussion on wildlife.

1.A.27 Kathy Brandt (Doc. #0632, p. 1)

Please veto the harmful Pebble Mine project and avoid adverse impacts on the people and wildlife who depend on Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.28 Damian Cameola (Doc. #0673, p. 1)

We need to stop decimating our natural resources. Let's conserve our natural resources and use them wisely. Please stop the Pebble Mine project.

EPA Response

See EPA's response to comment 1.A.1.

1.A.29 Avram Chetron (Doc. #0540, p. 1)

Please take the initiative and follow that with the necessary steps to secure the PERMANENT protection of the Bristol Bay watershed and its sockeye salmon fishery, as well as the land of the indigenous people upstream. The Pebble Mine proposal must be denied forever. It would be an unconscionable destruction of the Bristol Bay environment for all life, animal and human, in the area.

EPA Response

See EPA's response to comment 1.A.1.

1.A.30 Jennifer Thies (Doc. #0513, p. 1)

With regard to docket number EPA-R10-OW-2022-0418 and the proposed Pebble Mine, please protect the vital resources that the mining effort would disrupt. Protect lands that belong to the indigenous peoples of Alaska. Protect their religion that centers the earth, and in some cases their livelihoods that require a healthy environment. Protect the tasty salmon runs. Protect Bristol Bay for the generations to come. Now is not the time to give up on the environment.

EPA Response

See EPA's response to comment 1.A.1.

1.A.31 Robert Smither (Doc. #0517, p. 1)

Please deny this mine with everything possible!

EPA Response

See EPA's response to comment 1.A.1.

1.A.32 Daniel Cox (Doc. #0521, p. 1)

The Pebble Mine SHOULD NOT BE DEVELOPED! The watershed is far too important to allow such an industrial endeavor such as mining. Thank you for putting this world class natural ecosystem off limits to mining interests.

EPA Response

See EPA's response to comment 1.A.1.

1.A.33 Lisa A. Wermes (Doc. #0416, p. 1)

NO to disposal sites for the discharge of dredged or fill material associated with mining the Pebble Deposit.

EPA Response

See EPA's response to comment 1.A.1.

1.A.34 Scott Lundgren (Doc. #0421, p. 1)

No Pebble Mine. Conserve America's wilderness and wildfire

EPA Response

See EPA's response to comment 1.A.1.

1.A.35 Wendy Muth (Doc. #0431, p. 1)

I am deeply opposed to mining anything at the Pebble Mine in Alaska. The environmental implications of mining in this region and violating indigenous lands would be catastrophic and widespread

EPA Response

See EPA's response to comment 1.A.1.

1.A.36 Margarethe Hoenig (Doc. #0396, p. 1)

The use of certain waters in the Bristol Bay watershed as disposal sites for the discharge of dredged or fill material associated with mining the Pebble Deposition needs to be prohibited. We strongly oppose mining in the area.

EPA Response

See EPA's response to comment 1.A.1.

1.A.37 Judy Alderson (Doc. #0402, p. 1)

I fully support the EPA in taking proactive measures to protect the Bristol Bay watershed. Thousands of acres of wetlands and miles of streams that support salmon and the entire ecosystem are at stake. I join with efforts of Indigenous leaders from the region as well as national and international conservation groups in urging EPA to stop the Pebble Mine in its tracks.

EPA Response

See EPA's response to comment 1.A.1.

1.A.38 Carol Clawson (Doc. #0117, p. 1)

I am writing to oppose the Pebble Mine and urge for the permanent protection the Bristol Bay region

EPA Response

See EPA's response to comment 1.A.1.

1.A.39 Les Gara (Doc. #0132, p. 1)

This is a rare case of a major project that the last two elected Presidents of the United States, from different parties, and their agencies, have opposed, underscoring the common assessment that this mine is a danger. That, you know. What you may not know is that the threat of this project has hung over the heads like a dark storm cloud for over a decade, and Alaskans want that to stop. I ask that you not delay a decision on this project, and recognize the uncertainty and stress this proposed project has caused many in the Bristol Bay region.

EPA Response

See EPA's response to comment 1.A.1.

1.A.40 Les Gara (Doc. #0132, p. 2)

Alaskans have supported responsible mining. This is not a responsible mine project. Both the actual proposal, and the one Pebble Partnership has pretended to "scale back", with public admissions that the full, vastly larger project will follow, violate legal clean water and fish protections.

EPA Response

See EPA's response to comment 1.A.1.

1.A.41 Les Gara (Doc. #0132, p. 4)

The vast majority of Alaskans oppose this mine. The vast majority of Bristol Bay Residents oppose this mine. Their fears toxic leakage and toxic damage to greatest remaining wild salmon runs on this earth are justified.

This mine should not move forward.

EPA Response

See EPA's response to comment 1.A.1.

1.A.42 Paula Harris (Doc. #0193, p. 1)

As a resident of Massachusetts, I write today to ask the EPA to protect the waters of Bristol Bay, AK and put an end to the prospect of Pebble Mine.

EPA Response

See EPA's response to comment 1.A.1.

1.A.43 Richard Brantley (Doc. #0210, p. 1)

I urge the EPA to block placement of spoils and extractive waste of the Pebble Mine in critical watersheds.

(...)

I urge the EPA to block the Pebble Mine. There are hundreds or thousands of active gold mining operations globally. We do not need another one atop a precious national resource which has, and can still, exist for millennia.

EPA Response

See EPA's response to comment 1.A.1.

1.A.44 Terri Yeager (Doc. #0213, p. 1)

PLEASE make a difference in our Now and most especially our FUTURE. Protect Bristol Bay and listen to the native people who have been the caretakers of our land. We are simply here for a finite time, but Bristol Bay can be here for eternity. Protect what we all love and need. PLEASE protect Bristol Bay!

EPA Response

See EPA's response to comment 1.A.1.

1.A.45 Mark Niver (Doc. #0237, p. 1)

Please put in restrictions on the proposed Pebble Mine that protect the clean waters of the Bristol Bay Watershed. No tailings stored on site, no disruptions of any salmon producing rivers, lakes or streams containing salmon. No discharge into waters.

EPA Response

See EPA's response to comment 1.A.1.

1.A.46 Kristen Caraher (Doc. #0243, p. 1)

Please vote to save the environment and block the pebble mine in Alaska! It is the reason I vote Please do the right thing and block the mine

EPA Response

See EPA's response to comment 1.A.1.

1.A.47 Bruce White (Doc. #0249, p. 1)

I hope this is a way to voice my concern and objection to the EPA granting approval for the Pebble Creek Mine discharge and potential watershed pollution into Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.48 Susan Enoch (Doc. #0250, p. 1)

Veto Pebble Mine!

EPA Response

See EPA's response to comment 1.A.1.

1.A.49 Megan Wilder (Doc. #0260, p. 1)

Please follow the science and block the Pebble Mine project. This pristine area is prime salmon habitat and should not be mined.

EPA Response

See EPA's response to comment 1.A.1.

1.A.50 David Waller Waller (Doc. #0283, p. 1)

Please do the responsible thing and stop the Pebble Mine Project. I don't have to go into detail on the adverse impact it will have on people, wildlife and and other natural resources because I'm sure you have heard them all. Just veto this project and hopefully it will go away forever.

EPA Response

See EPA's response to comment 1.A.1.

1.A.51 Janet Sherman (Doc. #0286, p. 1)

As a national park lover, I am very concerned about the risks to Alaska's wildlife, water, and people from proposals like the Pebble Mine.

EPA Response

See EPA's response to comment 1.A.1.

1.A.52 Patrick Nolan (Doc. #0319, p. 1)

Please do not allow the Pebble mine to start operating in Bristol Bay. We need this natural resource to stay pure for us and for the future generations to come.

EPA Response

See EPA's response to comment 1.A.1.

1.A.53 Tim Brainerd (Doc. #0324, p. 1)

I support your intent to finish the job to protect Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.54 Dakota Ramus (Doc. #2664-44, p. 32)

I work as a commercial pilot and I'm closely tied with remote communities outdoors and asking the EPA to consider permanent protections and very important to me to look beyond just first generation financial gains and small improvements to bring continued protections for years to come for fourth generations or more folks to have the resources that we have now and enjoy the environment as we can now. Look beyond short term financial gains for long term permanent protections.

EPA Response

See EPA's response to comment 1.A.1.

1.A.55 Santa Claus (Doc. #2664-27, p. 22)

The mine itself likely would cause the loss of more than 2000 acres of wetlands, and well over a hundred miles of rivers and streams that would be replaced by many billions of tons of mining waste. Why should what appears to be a foreign-owned mining company be permitted to expose Bristol Bay to the potential loss of as many as 14,000 jobs, tens of millions of stock eye salmon that help satisfy subsistence needs of Alaska native communities, and more than \$1 billion towards our economy? Based upon my understanding of the proposed mine, I would vote against permitting it. Clean Water Act 404C enables the U.S Environmental Protection Agency to protect Bristol Bay, supporting local fisheries, the Alaskan economy, and indigenous tribes.

EPA Response

See EPA's response to comment 1.A.1. Economic-related issues are discussed in the document entitled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska (EPA 2023b)* (referenced in Section 4.4 of the FD).

1.A.56 Tia Shoemaker (Doc. #2664-30, pp. 23–24)

And right now, the EPA has a job to do, and Alaskans are asking them to go ahead and do it. We're asking that the Environmental Protection Agency does what they need to do, and put the most rigorous protections in place for the Bristol Bay region. It's an incredibly special area, and one that the native people, everyone who has lived there, cares about. And it's incredibly important that the EPA goes ahead and does their job.

EPA Response

See EPA's response to comment 1.A.1.

1.A.57 Steve Kahn (Doc. #2664-31, p. 24)

I'm a lifelong Alaskan, live on Lake Clark, and I just want to go on the record of supporting the EPA to promote the using the 404(c) to protect this wonderful watershed, and I also wanted to let the EPA know that it's not only scientists that are opposed to this mine. I have a background in big game guiding, and commercial fishing, and subsistence fishing, and I can see what... The value of this resource is incredible, and needs to be protected, and we've been trying to strive for that for a very long time, so I want to encourage the EPA to act on this now, and this is the time to get going on this project.

EPA Response

See EPA's response to comment 1.A.1.

1.A.58 Marian Giannulis (Doc. #2664-4, p. 6)

I want to thank the EPA for understanding that that value is special enough to be protected and moving forward in securing protections for this place. From the 12 year history of trying to get Clean Water Act protections for this place, the science and the people have shown time and time again that this is the wrong place to have a mine, and I sincerely hope that these protections will bring a lasting security for the Bristol Bay region that can only be accomplished by preventing large scale hard rock mining in the area.

EPA Response

See EPA's response to comment 1.A.1.

1.A.59 Earthworks (Doc. #2664-11, p. 10)

I've been working on mining issues for well over 20 years, and the proposed Pebble Mine is the most egregious mine proposal I've seen, given the sheer magnitude of impacts, and the incredible ecological and economic value of the resource at risk, at Bristol Bay wild salmon fishery.

EPA Response

See EPA's response to comment 1.A.1.

1.A.60 Bristol Bay Regional Seafood Development Association (Doc. #2664-15, p. 13)

I have been working on fighting against the Pebble Mine since 2006, with a gentleman by the name of Bob Gillum from Alaska here. We have put on seminars, we've educated the state of Alaska, from the time of Pebble's inception of this mine. And we would like to see the Bristol Bay watershed protected, we'd like to see open pit mining of the size of Pebble to not be allowed. The corridors that they've been trying to establish with their mine plans, which have changed over the years, we asked that the EPA just put all this to a halt, protect the watershed.

EPA Response

See EPA's response to comment 1.A.1.

1.A.61 Bristol Bay Regional Seafood Development Association (BBRSDA) (Doc. #2062, p. 1)

BBRSDA is strongly of the view that the EPA should prepare a Recommended Determination, and ultimately a Final Determination, that provides for longterm protection against the development of the Pebble mine in the Bristol Bay headwaters.

EPA Response

See EPA's response to comment 1.A.1.

1.A.62 Les Gara (Doc. #2664-20, pp. 17, 18)

I was a legislator in the state of Alaska from 2003 to 2019. For most of my legislative career, I fought this project. For most of their adult lives, the people that I know in some of the communities in Bristol Bay have fought this project. This has been a cloud that has been hanging over people's heads for almost two decades at this point, and I ask that this cloud be removed. Normally I would look to state law to try to protect us, but our governor is one of the last people in the state who still supports this mine, in a state where the overwhelming majority of people in Bristol Bay and throughout Alaska oppose it. And that's because fish bind the people of Alaska.

(...)

And I would rather put this mine to rest under state law. It doesn't seem that we will be able to do that under our governor, so I have no other resort than to ask you to do this.

EPA Response

See EPA's response to comment 1.A.1.

1.A.63 Alana Kansaku-Sarmiento (Doc. #2667-19, p. 53)

But there's no way that the EPA could possibly know the impact that Pebble would have if - without being here, without being a part of the culture, without being in - a part of the families that have been here for generations, who will still be here to clean up the mess, to deal with the mess that Pebble will inevitably leave behind, like so many other mines, and so many other dams have. I urge you to protect this beautiful, sacred place, as soon as possible.

EPA Response

See EPA's response to comment 1.A.1.

1.A.64 Mass Mailing Campaign (Doc. #2537, p. 1)

As a national park lover, I am very concerned about the risks to Alaska's wildlife, water, and people from Pebble Mine. The Bristol Bay region needs permanent protection.

EPA Response

See EPA's response to comment 1.A.1.

1.A.65 Mass Mailing Campaign (Doc. #2550, p. 1)

Bristol Bay is a national treasure and deserves durable protections from one of the largest open pit mines in the world.

EPA Response

See EPA's response to comment 1.A.1.

1.A.66 Mass Mailing Campaign (Doc. #2562, p. 1)

Please help to stop mining in a precious environment to save it from becoming a wasteland for its many inhabitants.

EPA Response

See EPA's response to comment 1.A.1.

1.A.67 Patagonia (Doc. #2061, p. 1)

Patagonia opposes development of the Pebble Project due to the significant and long-lasting damage it would inflict on wildlife, critical salmon fisheries, recreation and Alaska's Native communities.

EPA Response

See EPA's response to comment 1.A.1.

1.A.68 Freshwaters Illustrated (Doc. #2210, p. 1)

Thank you for your careful consideration of the potential impacts of the Pebble Mine proposal on the Bristol Bay ecosystem. I am writing to urge you to finish the process, act in defense of the Clean Water Act, and protect this vital, intact ecosystem from the risks the Pebble Mine project would pose.

As you can appreciate, if we were a society that truly embraced sustainability and protecting the services and benefits that our ecosystems provide, most importantly clean water, we would not need an EPA. But we are not that society, and even after 50 years of Clean Water Act protections, the state of our Nation's waters are unfortunate testimony of risks that should have never been taken, promises that were never kept, and water quality problems that will take generations to address.

As someone who has been lucky enough to visit Lake Iliamna and witness the power of this rich, salmon-driven ecosystem, I implore you to make the right decision for Bristol Bay. Serve your mandate. Uphold the Clean Water Act. Bring the sensible resolution that so many stakeholders and our great grandchildren deserve.

EPA Response

See EPA's response to comment 1.A.1.

1.A.69 Luminous Device Technologies, Inc. (Doc. #2340, p. 1)

Pragmatically and ethically, we should not push all mining activity into countries where worker protections and environmental protections are weak, minimal, or non-existent.

But the Pebble Mine swindle would extract clean water and a habitat of abundance from our country, region, and world. It is a swindle of extinction by extraction. No compensation is even possible.

It is beyond ridiculous to consider mining in nurseries of life like this.

By comparison to other potential mining sites, the audacity of the investors and managers to demand we relinquish this one just boggles the mind.

The EPA must send a clear message of pragmatism to the investment industry and the mining industry: Not in nurseries. Not with old, dirty tech.

No.

EPA Response

See EPA's response to comment 1.A.1.

1.A.70 Theodore Roosevelt Conservation Partnership (TRCP) (Doc. #1614, p. 2)

The proposed Pebble Mine and other large-scale mines must never be allowed to threaten Bristol Bay's fish and wildlife habitat, jobs, and hunting and fishing traditions.

EPA Response

See EPA's response to comment 1.A.1.

1.A.71 Far Star Action Fund (Doc. #1649, p. 1)

As a professional and personal supporter of Alaska, Wild Salmon and our future as a country, I would like to strongly propose to prohibit and restrict the use of certain water within defined areas as disposal sites for the Pebble Mine and Deposit area, Southwest Alaska. History, past and present is teaching us the need to permanently protect the area and salmon species. For the second year, the Bristol Bay wild salmon have lived strong---their numbers continue to go up, and part of the reason is the place where they live, and breed is that place that remains protected from contamination. Please take heed to doing the right thing for personkind, not profit.

EPA Response

See EPA's response to comment 1.A.1.

1.A.72 The Nature Conservancy (Doc. #1741, p. 1)

EPA: It's Time to Protect Bristol Bay

(...)

Large-scale open-pit mining in Alaska's Bristol Bay would permanently damage this unique and irreplaceable landscape. Years of robust scientific study show that this is the wrong mine in the wrong place — and that now is the time to protect this unique region from the threat of the Pebble Mine.

EPA Response

See EPA's response to comment 1.A.1.

1.A.73 Alaska Wilderness League (Doc. #1743, p. 1)

They agree that Bristol Bay is one of the most productive ecosystems in the world; its headwaters are simply not the place for large-scale industrial mining.

EPA Response

See EPA's response to comment 1.A.1.

1.A.74 One Fish Foundation (Doc. #1792, p. 1)

So I ask you, on behalf of the thousands of students I've already taught, and the thousands more that I will teach, on behalf of the commercial fish harvesters and fishmongers in the Slow Fish community working in and around Bristol Bay, and on behalf of the thousands of Slow Food USA members from Alaska and the lower 48 who choose wild-caught Pacific salmon, I ask you to please finish the job. Please do your duty and end the threat of the Pebble Mine, and provide durable, long-lasting, and science-based safeguards to protect Bristol Bay and the communities, fishing families, businesses that depend on it.

EPA Response

See EPA's response to comment 1.A.1.

1.A.75 Gaia Massage & Yoga, LLC (Doc. #1349, p. 1)

I vehemently oppose the Pebble Mine. The region is one of the last pristine areas in the world where we have millions of sockeye salmon coming back to spawn. It is critical to save this wild space for the local communities of wildlife and the humans in this region. Not only do the locals depend on the health of the waters and fisheries for their own consumption but for the fishing commercial and tourism industries as well. Please make the ethically correct choice. #nopebblemine

EPA Response

See EPA's response to comment 1.A.1.

1.A.76 Alaska State Legislature (Doc. #0505, p. 1)

My name is Geran Tarr, and I am a Representative in the Alaska State Legislature. I am writing to voice my deep opposition to the Pebble Mine project. This project, and its potential to ruin one of Alaska's premiere fisheries in Bristol Bay, has been panned by policymakers, local tribes, fishermen, and even our own federal delegation here in Alaska. The Army Corps of Engineers rejected this plan, as an open-pit mine would unavoidably destroy the wildlife and fishery as we know it – leading to devastating economic, cultural, and subsistence impacts across the region and across the state.

EPA Response

See EPA's response to comment 1.A.1.

1.A.77 The Brodsky Charitable Foundation Trust (Doc. #0595, p. 1)

I am writing to you today to oppose the proposed Pebble Mine in Alaska's pristine brown bear habitat.

(...)

Please do not let this project move forward.

EPA Response

See EPA's response to comment 1.A.1.

1.A.78 Trout Unlimited Alaska (Doc. #0614, p. 1)

While a federal permit for the proposed Pebble mine has been denied, the people, fish, and fish based resources of Bristol Bay will remain at risk until upfront, permanent protections are put in place. Please support local residents, business owners and hunters and anglers as we pursue a future in Bristol Bay that protects clean water, healthy habitat, and the most productive wild sockeye run in the world.

EPA Response

See EPA's response to comment 1.A.1.

1.A.79 Seafood Harvesters of America (Doc. #0811, p. 2)

Unfortunately, Bristol Bay's highly productive and important salmon fisheries have been at risk for the last two decades. The threat of the proposed Pebble Mine has created uncertainty for the Alaskan Natives who depend on this area for subsistence, as well as the fishermen and seafood businesses that depend on the productivity and health of Bristol Bay's wild salmon. We cannot risk causing irreversible damage to a watershed that is not only an economic engine but also the cultural foundation for many Alaskan Native communities.

EPA Response

See EPA's response to comment 1.A.1.

1.A.80 Seafood Harvesters of America (Doc. #0811, p. 2)

The mine would also generate up to 10 billion tons of toxic mining waste. Simply put, this is the wrong mine in the wrong place. And now the EPA has a golden opportunity to protect these watersheds for generations to come, guaranteeing cultural access for the surrounding Native Alaskan Tribes and sustainable salmon for consumers around the world.

As the largest commercial fishing organization in the U.S., we echo the calls of Alaskan Natives, Bristol Bay residents, and the thousands of fishermen around the country who have already called for action to end the threat of the proposed Pebble Mine. Bristol Bay truly is a unique place that deserves exceptional protection.

EPA Response

See EPA's response to comment 1.A.1.

1.A.81 Choggiung Limited (Doc. #0815, p. 1)

Our Board of Directors strongly opposes the development of the Pebble Mine and mines like it for risks it poses to people, fish, water and the environment.

EPA Response

See EPA's response to comment 1.A.1.

1.A.82 Choggiung Limited (Doc. #0815, p. 1)

We support permanently protecting this national treasure from the threat of mines like Pebble.

EPA Response

See EPA's response to comment 1.A.1.

1.A.83 Choggiung Limited (Doc. #0815, p. 1)

The EPA cannot allow toxic mining waste to be stored at the headwaters of our fishery.

EPA Response

See EPA's response to comment 1.A.1.

1.A.84 Choggiung Limited (Doc. #0815, p. 2)

The threat of toxic large-scale hard rock mining, such as the proposed Pebble Mine, will continue to loom over Bristol Bay until real permanent protections are secured for the region. Years of scientific study and review and a robust administrative record all support the EPA protecting this national treasure.

(...)

Future generations should not have to live with the threat of mining that would devastate our cultures, communities, and sustainable economy. Please finish the job and ensure that Bristol Bay's pristine lands and waters are protected in perpetuity.

EPA Response

See EPA's response to comment 1.A.1.

1.A.85 Businesses for Bristol Bay et al. (Doc. #0827, p. 1)

Over the years, our businesses and organizations have stood with the communities of Bristol Bay in opposition to the proposed Pebble Mine. We continue to support their requests for strong and durable protections for Bristol Bay's headwaters from the Pebble Mine and any other similar large-scale mining. We urge you to include their recommendations when shaping protections for this region.

EPA Response

See EPA's response to comment 1.A.1.

1.A.86 Flint Hills EcoVenture, LLC (Doc. #0321, p. 1)

Water. Food. Nurturing people's physical and mental health through quality outdoor professions and recreation. Those three things are as vital to human civilization and our survival as anything today, and should be permanently protected; Bristol Bay is an international treasure providing those crucial resources.

Any negative impact to water quality and lack of protection of Bristol Bay will affect the ENTIRE WORLD. It provides a dominant food resource and supports both local and global economies. It's absolutely imperative to protect Bristol Bay in perpetuity.

EPA Response

See EPA's response to comment 1.A.1.

1.A.87 AFFTA Fisheries Fund (Doc. #0412, p. 1)

The AFFTA Fisheries Fund and our numerous allies in the fly fishing industry have worked long and hard at bringing the threat of Pebble Mine to a close on behalf of the communities of Bristol Bay and the sustainable natural resources on which they depend.

(...)

As a professional who has worked in natural resource conservation for over 40 years, I cannot recall a clearer case where a region's economic interest, that of the region's Indigenous nations, and the sustainable management of fisheries and wildlife combine into such a strong and undeniable positive accounting of the need to protect this region from the discharge of dredged or fill material associated with mining the Pebble deposit.

EPA Response

See EPA's response to comment 1.A.1.

1.A.88 RHR International LLP (Doc. #0271, p. 1)

I am writing to ask that you stop the pebble mine. Please do this for the local economy, the indigenous people and for the wildlife.

EPA Response

See EPA's response to comment 1.A.1.

1.A.89 Port of Seattle (Doc. #0159, p. 1)

Thank you for your leadership in protecting this essential anadromous fish habitat—as well as all of those who depend on this world class fishery—from unacceptable adverse impacts.

EPA Response

See EPA's response to comment 1.A.1.

1.A.90 All World Travel, Inc. (Doc. #0262, p. 1)

Please know that many members of the Travel Advisor community absolutely oppose the Pebble Mine project.

EPA Response

See EPA's response to comment 1.A.1.

1.A.91 Clean the Pacific and Recycle Hawaii (Doc. #0104, p. 1)

PLEASE! I've been fighting this awful mining project for decades. Do you want copper? There's thousands of miles fat copper communication cables all over the floor of Earth's oceans. That's more copper than will ever come out of this mine, already processed and ready to go. These cables are defunct, replaced by fiber optic. As the President of Recycle Hawaii and Founder of Clean The Pacific, I can tell you, we all would really appreciate it if you recycled all that copper.

Bristol Bay and the associated watershed is one of the last pristine ecosystems on Earth, which is a sphere floating in a sea of death. Earth isn't getting significantly bigger, so I think you can see the problem with ever expanding exploitation of wilderness habitat. If you really want to see the damage humanity has done, I recommend you take a break and open a new tab on your computer. Look at Google Earth satellite view so you can see the entirety of the U.S.A.. Now, zoom in on an area of forest you think is wilderness (hint: it's darkest green). You see, it's got roads, houses, it's being logged, mined, drilled, fracked, agriculture, industry... The problem is, capitalism is based on the exploitation of two things, labor and real estate. If you don't exploit land, then humanity sees that land as worthless. Unexploited land is not worthless, in fact, it's the most valuable thing on Earth, because it is quite literally, the only thing keep us alive. WE NEED WILDERNESS, A LOT OF WILDERNESS! We can't take any more, we have to start restoring wilderness, not taking.

Please, if you shut this mine down, the cheers of joy will be heard around the world. You'll be heroes! That cheering will drown out the piteous whining of the wealthy investors who will have to go somewhere else to stuff their bank accounts. Don't worry, they could all retire right now and be perfectly happy. This is an opportunity to do something good and feel good about yourself as you bounce your grandchildren on your knee.

EPA Response

See EPA's response to comment 1.A.1.

1.A.92 Curyung Tribal Council (Doc. #2667-51, p. 115)

I support permanently protecting our natural treasure from the threat of mines, especially Pebble. A toxic mining waste at the headwaters of our natural, self-sustaining fishery is insanity. Finalize the 404C process - prevent Pebble, and all other mines from scoring, or disposing of mine wastes here. Finalize the Clean Water Act protections. Develop strong and true security for us.

EPA Response

See EPA's response to comment 1.A.1.

1.A.93 Curyung Tribal Council (Doc. #2667-51, p. 115–116)

For decades, we've voiced over and over how concerned we are mentally, physically, spiritually, culturally that our waters and lands will be destroyed. Each plea, my people, Elder and youth, have given serious, honest, and valid voiced concerns that should be listened to. In this moment, I feel like a child in a dangerous and serious situation, crying out for someone to save me, and to save us.

Your actions, not just words, but your true actions to protect us are here, and have been here. Now is the time to act - not just to protect me, but to protect our future generations. Finalize this to ensure Bristol Bay's pristine lands, waters, and cultures, our way of life are protected forever.

EPA Response

See EPA's response to comment 1.A.1.

1.A.94 Curyung Tribal Council (Doc. #2667-53, pp. 117–118)

When we were here in 2019, we thought that this was going to be the last time that we were going to testify. And hopefully, this will be a closest to the last and we ask that you make the most, strongest protections that you can possibly make.

EPA Response

See EPA's response to comment 1.A.1.

1.A.95 Trout Unlimited (Doc. #2664-5, p. 6)

Trout Unlimited is a nationwide organization that is focused specifically on taking care of fish habitat. Here in Alaska we have a team of staff, but more importantly, 20,000 Alaskan supporters and members who have spoken up consistently in opposition to the proposed Pebble Mine and in support for using the Clean Water Act, section 404(c), to protect Bristol Bay. I would like to register my support for comprehensive and strong Clean Water Act protections for the North and South Fork of the Koktuli Rivers and Upper Talarik Creek.

EPA Response

See EPA's response to comment 1.A.1.

1.A.96 Deirdre Hill (Doc. #2664-6, p. 7)

Next is we have been fighting to protect this rich resource for almost a generation. I request that you finalize 404(c) action now, as the proposed Pebble Mine could have a massive detrimental impact on the salmon resource.

EPA Response

See EPA's response to comment 1.A.1.

1.A.97 Natural Resources Defense Council (Doc. #2664-9, p. 9)

I'm also here to support the communities and residents of Bristol Bay who have overwhelmingly opposed the proposed Pebble Mine and back permanent protections for Bristol Bay. Bristol Bay is a resource of national and global significance. I'd like to begin by thanking EPA for listening to the concerns of the people whose communities and livelihoods are threatened by the Pebble Mine and for responding to the decade old request of tribes, commercial fishermen, conservation groups, and others to protect the headwaters of Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.98 Earthworks (Doc. #2664-11, p. 10)

I'd like to thank the EPA for taking this important step forward, we urge the EPA to complete the 404(c) process as quickly as possible, and provide lasting comprehensive protections for the Bristol Bay watershed. EPA's final action should stop any version of the proposed Pebble Mine from being developed.

EPA Response

See EPA's response to comment 1.A.1.

1.A.99 Rochelle Harrison (Doc. #2664-32, p. 25)

I've been a resident of Bristol Bay for over 35 years. I also own a small business out there, and have successfully brought in many people into Bristol Bay to enjoy the scenery, the fishing, the hunting, and just eco tourists. We've been fighting this mine for over 10 years now, the proposed mine, to try and keep the area pristine and ready for just for the fishing, and hunting, and living. It just is incompatible with a large mine. This is a wrong mine in the wrong place, and I'm hoping that EPA will go ahead and give the strongest protection possible for this area, and that it will be the end of our struggling to protect our home, and where we live, and where we make a living.

EPA Response

See EPA's response to comment 1.A.1.

1.A.100 Ryan Coffman (Doc. #2664-33, p. 26)

I'm a lifetime Alaskan, and have spent time hunting and fishing in the Bristol Bay region. I'm asking the EPA to do their job and issue permanent protection for Bristol Bay. It'd be very heartbreaking to ever see this mine go through and destroy such a wonderful habitat.

EPA Response

See EPA's response to comment 1.A.1.

1.A.101 Taj Shoemaker (Doc. #2664-42, p. 31)

I am a lifelong Alaskan and a resident of Kodiak and Bristol Bay and I would just like to see the EPA make permanent protection for clean waters in Bristol Bay. It's very important to me and my family and the future for my children and grandchildren.

EPA Response

See EPA's response to comment 1.A.1.

1.A.102 Sarah Haskin (Doc. #2664-39, p. 29)

I've spent my summers as a child out in Bristol Bay and returned as an adult to work in the fishing industry. I feel Bristol Bay is a special part of Alaska and I want it to be protected. I'm asking the EPA to do their part and issue permit protection for Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.103 Wesley Tyrrell (Doc. #2664-41, p. 30)

I'm a lifetime Alaskan and I've spent a lot of time in the Bristol Bay region, hunting and fishing, and I'm asking the EPA to do their job and issue permanent protection for Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.104 Luke Tyrrell (Doc. #2664-43, p. 31)

I've been a commercial fisherman in Bristol Bay and I've hunted brown bears on the Alaska peninsula in Bristol Bay and I just want to voice my opinion that the EPA should issue permanent protection for this region. It's an important resource for not only Alaskans, but everybody so please follow through with the issue and permanent protection for this region.

EPA Response

See EPA's response to comment 1.A.1.

1.A.105 Cabot Pitts (Doc. #2664-45, p. 32)

My hunting operation is right there in the middle of Katmai National Preserve. I just wanted to say that I support the EPA issuing a permanent protection for the region. It's a critical thing. I've been there for close to 18 to 20 years and I think it's necessary to protect all the natural resources that we have in the area.

EPA Response

See EPA's response to comment 1.A.1.

1.A.106 Katmai Service Providers (Doc. #2666-7, pp. 23–24)

Thank you, EPA, for coming here and listening. Katmai Service Providers supports the proposed Determination, and encourages finalizing a strong and comprehensive Clean Water Act protections for the area as soon as possible. The businesses who bring a lot of jobs in the area and contribute a lot to the \$2 billion fishing industry rely on clean water, and a landscape that's intact, and a healthy fishery.

EPA Response

See EPA's response to comment 1.A.1.

1.A.107 Kimberly Sims (Doc. #0166, p. 1)

I am writing in strong support of the 404(c) Proposed Determination recently issued by the EPA

EPA Response

See EPA's response to comment 1.A.1.

1.A.108 Jonathan Deex (Doc. #0168, p. 1)

The Bristol Bay watershed is a precious natural resource and deserves the full measure of protections that can be applied to ensure it will never be contaminated by mining wastes or other sources of pollution. Put the Clean Water Act rules in place.

EPA Response

See EPA's response to comment 1.A.1.

1.A.109 Thomas G. Yocom (Doc. #0182, p. 3)

Pursuant to Section 404(c) of the Clean Water Act, it is appropriate for EPA to restrict, prohibit, or deny discharges associated with mining the Pebble Deposit on the basis of unacceptable impacts to fish and wildlife, as well as potentially to water supplies and recreational opportunities

EPA Response

See EPA's response to comment 1.A.1.

1.A.110 Angela Wilson (Doc. #0185, p. 1)

I support the EPA's decision to limit mine dumping in the Bristol Bay water shed

EPA Response

See EPA's response to comment 1.A.1.

1.A.111 Janine Spencer-Glasson (Doc. #0197, p. 1)

Please veto the destructive Pebble Mine project and avoid adverse impacts on the people and wildlife who depend on Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.112 Elana Kupor (Doc. #0209, p. 1)

Please use your authority to stop the proposed open pit Pepple Mine in Alaska's Bristol Bay.

(...)

I urge you to use your authority under section 404(c) of the Clean Water Act to stop this potential destruction.

EPA Response

See EPA's response to comment 1.A.1.

1.A.113 Maryjane Hadaway (Doc. #0224, p. 1)

Please veto the harmful Pebble Mine Project

EPA Response

See EPA's response to comment 1.A.1.

1.A.114 Heather Clark (Doc. #0227, p. 1)

I'm asking you to veto the harmful Pebble Mine project.

EPA Response

See EPA's response to comment 1.A.1.

1.A.115 Mike Bronson (Doc. #0238, p. 1)

Please make a determination to prohibit and restrict disposal into the Pebble salmon streams. Your proposed regulation is correct that a Pebble mining operation would create unacceptable adverse effects on fisheries.

(...)

Thanks in particular for adding to the proposal a discussion of related effects from dam failures and other mining elements involving effects "in perpetuity."

EPA Response

See EPA's response to comment 1.A.1.

1.A.116 Reid Kley (Doc. #0254, p. 1)

Please end this drama and give us a certain future we can depend on about the environmental uncertainties around this whole issue. Please exercise 404c protections for the Pebble deposit.

EPA Response

See EPA's response to comment 1.A.1.

1.A.117 Terry Karro (Doc. #0256, p. 1)

I write to strongly support the Section 404(c) Proposed Determination to prohibit and restrict the use of certain waters in the Bristol Bay watershed as deposit sites for the discharge of dredged or fill material associated with mining the Pebble Deposit.

EPA Response

See EPA's response to comment 1.A.1.

1.A.118 Barbara Francisco (Doc. #0326, p. 1)

I am writing to you to urge you to permanently protect the Bristol Bay region, using the authority under section 404c of the Clean Water Act's process. Please permanently protect the Bristol Bay region!

EPA Response

See EPA's response to comment 1.A.1.

1.A.119 Shanna Stein (Doc. #0348, p. 1)

I have read the executive summary and agree 100% that the mine should NOT be allowed to use that area as a disposal site

EPA Response

See EPA's response to comment 1.A.1.

1.A.120 Ken Hemphill (Doc. #0369, p. 1)

It is an absolutely no brainer for the EPA to permanently block the Pebble Mine! Please do this!

EPA Response

See EPA's response to comment 1.A.1.

1.A.121 Catherine Kappel (Doc. #0374, p. 1)

Therefore, I am writing to urge the EPA to veto this harmful Pebble Mine project. Please veto the harmful Pebble Mine project and avoid adverse impacts on the people and wildlife who depend on Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.122 Carol Ray (Doc. #0378, p. 1)

I'm writing to urge you to use your authority under section 404(c) of the Clean Water Act process to finalize the Proposed Determination and veto Pebble Mine, which would irreversibly poison the waters of Alaska's Bristol Bay.

(...)

Please veto the harmful Pebble Mine project and avoid adverse impacts on the people and wildlife who depend on Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.123 Katie Riley (Doc. #0401, p. 1)

One of the main things that the federal government can do to encourage young people to invest in the future of this region and the future of this fishery is to finalize Clean Water Act 404(c) protections to ensure that proposals like the proposed Pebble mine cannot threaten the resource in the future.

(...)

I want the assurance from the EPA through the Clean Water Act 404(c) process that Bristol Bay will be protected for future generations.

EPA Response

See EPA's response to comment 1.A.1.

1.A.124 Judith Leshner (Doc. #0406, p. 1)

Today I write to you asking that you use EPA's Section 404(c) of the Clean Water Act to permanently protect Bristol Bay from any mining operations and any other polluting operations which may be proposed in the future.

EPA Response

See EPA's response to comment 1.A.1.

1.A.125 Robert S. Osborne (Doc. #0440, p. 1)

Accordingly, I strongly support the recent revisions to the Proposed Determination and urge you to finalize Clean Water Act 404(c) protection as soon as possible.

EPA Response

See EPA's response to comment 1.A.1.

1.A.126 Marcia Kreeger (Doc. #0449, p. 1)

In support of Veto pebble Mine and protect Bristol. Protect the salmon spawn

EPA Response

See EPA's response to comment 1.A.1.

1.A.127 Betsy Darrah (Doc. #0456, p. 1)

I strongly support the revised Proposed Determination under Section 404(c) to prohibit and restrict the use of certain waters in the Bristol Bay watershed as disposal sites for material resulting from the proposed Pebble Bay mine.

EPA Response

See EPA's response to comment 1.A.1.

1.A.128 Rose Marie Wilson (Doc. #0457, p. 1)

I am writing to strongly support prohibiting and restricting the use of certain waters in the Bristol Bay watershed as disposal sites for the discharge of dredged or fill material associated with mining the Pebble Deposit. It is imperative that we keep Alaska and its wildlife safe.

EPA Response

See EPA's response to comment 1.A.1.

1.A.129 Mark Beaudin (Doc. #0474, p. 1)

Finish the job and protect Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.130 Leslie Hay (Doc. #0510, p. 1)

I respectfully plead for the EPA to invoke the 404 provision of the Clean Water Act and veto Pebble Mine from any permits.

EPA Response

See EPA's response to comment 1.A.1.

1.A.131 Diane Streck (Doc. #0525, p. 1)

I strongly support permanent protection for the Bristol Bay region in Alaska and your 2022 Proposed Determination. Thank you for doing your part to protect this vitally important region.

EPA Response

See EPA's response to comment 1.A.1.

1.A.132 Maria Segura (Doc. #0542, p. 1)

I strong proposed protections under the Clean Water Act to defend Bristol Bay from destructive mining by a foreign company.

EPA Response

See EPA's response to comment 1.A.1.

1.A.133 Bob Frankle (Doc. #0559, p. 1)

I am writing to express my support for the EPA's efforts to permanently protect Bristol Bay, Alaska, and its wildlife by preventing development of the proposed Pebble Mine.

EPA Response

See EPA's response to comment 1.A.1.

1.A.134 Stephanie and Martin Charles (Doc. #0585, p. 1)

I fully support strong proposed protection under the Clean Water Act to defend Bristol Bay from destructive mining of any sort, foreign or domestic.

EPA Response

See EPA's response to comment 1.A.1.

1.A.135 Barbara Stevens (Doc. #0587, p. 1)

I'm writing to endorse this EPA Clean Water Act rule making to save Bristol Bay by preventing Pepple Mine from establishing an operation in this area.

EPA Response

See EPA's response to comment 1.A.1. Note, EPA's action is not a rulemaking; see also EPA's response to comment 2.C.2 for further clarification.

1.A.136 Julie Turner (Doc. #0589, p. 1)

I strongly support the proposal to prohibit and restrict the use of certain waters in the Bristol Bay watershed as disposal sites for the discharge of dredged or fill material associated with mining the Pebble Deposit.

EPA Response

See EPA's response to comment 1.A.1.

1.A.137 Linda Crescione (Doc. #0593, p. 1)

During this time of public comment, I am urging your support for the permanent protection of the Bristol Bay region

EPA Response

See EPA's response to comment 1.A.1.

1.A.138 Hunter Hickok (Doc. #0656, p. 1)

It would be dope if you veto'd the harmful Pebble Mine project and avoid adverse impacts on the people and wildlife who depend on Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.139 Dougald Scott (Doc. #0662, p. 1)

Bristol Bay is a national treasure that should be preserved in its current, near pristine state. Please make sure that this ecosystem is preserved for future generations by applying the EPA's Clean Water Act 404(c) process.

EPA Response

See EPA's response to comment 1.A.1.

1.A.140 Vivian Mendenhall (Doc. #1615, p. 1)

The Proposed Determination is a very good document, with thorough research and analysis of complex aquatic ecosystems. I applaud both your descriptions of damage that would result from dredging and filling in the mine area, and your addition of further concerns outside that immediate area.

EPA Response

See EPA's response to comment 1.A.1.

1.A.141 Commercial Fishermen for Bristol Bay (Doc. #2559, p. 1)

Please use your authority under section 404(c) of the Clean Water Act to finalize the Proposed Determination and veto Pebble Mine. Finish the job and protect Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.142 United Tribes of Bristol Bay (Doc. #0109, p. 1)

I write on behalf of the United Tribes of Bristol Bay (UTBB) to thank you for moving the process forward to enact permanent Clean Water Act protections under section 404(c) for Bristol Bay from the threat of the Pebble Mine, and to urge EPA to stay on the current timeline to conclude the comment period on July 5, 2022– a date which is well within established requirements.

Our Tribes, commercial fishermen, and Bristol Bay communities are already participating in the public comment period to voice our support once again for EPA issuing a 404(c) determination for the Pebble deposit and protecting Bristol Bay's irreplaceable resources. The time EPA has provided the public for input is sufficient, as the science has been settled for years and is crystal clear. This process has already been drawn out for over a decade and the agency should not consider any request for delay by extending the comment period. An extension is not only unnecessary but further delays a process to protect the Bristol Bay region by the end of this year.

Earlier this week, we learned that Pebble Limited Partnership (PLP) [requested a comment period extension](#). We believe that this request is an attempt by the company to slow down the 404(c) Clean

Water Act process, bolster their efforts to build the destructive Pebble Mine, and further delay durable protections for the Bristol Bay region.

EPA Response

See EPA's response to comment 1.A.1. As detailed in Section 2 of the FD, the EPA Region 10 Regional Administrator found good cause to extend the comment period on the Proposed Determination (PD) by 60 days pursuant to 40 Code of Federal Regulations (CFR) 231.8. The extension notice was published in the *Federal Register*.

1.A.143 Izaak Walton League of America Public Lands Committee and League Alaskan (Doc. #0131, p. 1)

For over a decade, a broad coalition of stakeholders including local Tribes, a majority of Alaskans, commercial fishermen, and hunters and anglers from across the country have voiced their opposition to the proposed Pebble Mine and their desire to see Bristol Bay safeguarded for future generations. EPA must expedite the 404(c) process and conserve this landscape without delay. In order to do so, will protect several watersheds critical to the productivity of Bristol Bay, including the North Fork Koktuli, South Fork Koktuli and Upper Talarik Creek, all of which are under threat from the Pebble mine and other proposed largescale mines.

EPA Response

See EPA's response to comment 1.A.1.

1.A.144 Pacific Seafood Processors Association (PSPA) (Doc. #0137, pp. 1, 2)

On behalf of members of the Pacific Seafood Processors Association (PSPA), I am pleased to offer comments on the Environmental Protection Agency's (EPA) Clean Water Act (CWA) Section 404(c) Proposed Determination (PD) to prohibit and restrict the use of certain waters in the Bristol Bay watershed as disposal sites for the discharge of dredged or fill material associated with mining the Pebble Deposit. Given our role in Bristol Bay's communities and economies, PSPA members support the EPA's updated proposed action to effectively veto development of the Pebble Limited Partnership's (PLP) 2020 Mine Plan.

(...)

PSPA members, and the communities in which we operate, will rely on healthy and sustainable Bristol Bay salmon stocks long into the future. Therefore, we support the CWA Section 404(c) Proposed Determination for Bristol Bay watersheds and steps to finalize this PD.

EPA Response

See EPA's response to comment 1.A.1.

1.A.145 World Wildlife Fund (WWF) (Doc. #0138, pp. 1, 2)

On behalf of World Wildlife Fund (WWF)'s US Arctic Program, I am pleased to submit these comments on the Environmental Protection Agency (EPA) Proposed Determination issued under Section 404(c) of the Clean Water Act (CWA) to prohibit and restrict the use of waters of the proposed Pebble mine site as disposal sites. WWF urges the EPA to issue a Final Determination that prohibits or restricts past, current, and future plans for the Pebble deposit and also permanently protects Bristol Bay's headwaters from porphyry mining like that proposed for the Pebble deposit. We support EPA in completing the 404(c) process as quickly as possible.

(...)

WWF's comments echo the voices of the United Tribes of Bristol Bay, Bristol Bay Native Association, Bristol Bay Native Corporation, and Bristol Bay Economic Development Corporation. There is no question that the EPA has the support of the people of Bristol Bay to move quickly and diligently to implement the Proposed Determination.

(...)

WWF fully supports the EPA's Proposed Determination to ensure protection for the watershed and people of Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.146 United Tribes of Bristol Bay (Doc. #0145, p. 1)

EPA has the authority to stop Pebble Mine. Please finalize the 404(c) Clean Water Act process to veto the mine before Bristol Bay's fishermen head out on the water for another fishing season.

EPA Response

See EPA's response to comment 1.A.1.

1.A.147 Port of Seattle (Doc. #0159, p. 1)

I am writing on behalf of the Port of Seattle to support the United States Environmental Protection Agency (EPA) Region 10's proposed determination to prohibit and restrict the use of certain waters within the Bristol Bay region as disposal sites for the discharge of material associated with the mining of the Pebble deposit.

EPA Response

See EPA's response to comment 1.A.1.

1.A.148 Trillium Asset Management LLC (Doc. #0162, p. 1-2, 4)

For over 10 years, Trillium has provided comments to the Environmental Protection Agency (EPA) expressing concerns about large-scale mining in the Bristol Bay region of Alaska. During that time, we have continually voiced our support for the science based EPA Bristol Bay Section 404(c) Process [<https://archive.trilliuminvest.com/2014/09/17/investors-urge-epa-protect-bristol-bay-alaska-proposed-pebble-mine/>] With the Proposed Determination having been released this year we wish to urge the EPA to issue a final determination and thereby provide long-term protections for this important national resource.

(...)

We believe the EPA record shows that these protections are necessary to safeguard the Bristol Bay wild salmon fishery, and the robust economy and vibrant cultures that it supports.

We therefore urge the EPA to finalize the 404(c) process and issue a Final Determination this year to provide meaningful and durable protection for Alaska's Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.149 Conservation Committee; and National and Legislative Affairs Committee, Garden Club of America (Doc. #0188, p. 1)

We write on behalf of the non-partisan Conservation and National and Legislative Affairs Committees of the Garden Club of America to request that the Environmental Protection Agency, pursuant to section 404(c) of the Clean Water Act, prohibit and restrict the use of certain waters in the Bristol Bay watershed as disposal sites for the discharge of dredged or fill material associated with mining the Pebble Deposit.

EPA Response

See EPA's response to comment 1.A.1.

1.A.150 Trout Unlimited (Doc. #0190, p. 1)

I support the protections put forward in the revised Proposed Determination for Bristol Bay, and respectfully request that the EPA quickly finalizes Clean Water Act 404(c) protections to ensure that proposals like the proposed Pebble mine cannot threaten the resource in the future.

(...)

I want the assurance from the EPA through the Clean Water Act 404(c) process that Bristol Bay will be protected for future generations.

EPA Response

See EPA's response to comment 1.A.1.

1.A.151 Bristol Bay Native Corporation (BBNC) (Doc. #0191, p. 1)

I am a shareholder or shareholder descendant of Bristol Bay Native Corporation (BBNC) with ancestral ties to Bristol Bay, Alaska. I am writing to urge the Environmental Protection Agency (EPA) to permanently protect Bristol Bay from the proposed Pebble Mine by finalizing strong and durable Clean Water Act Section 404(c) protections.

(...)

The vast majority of BBNC shareholders and Bristol Bay residents support EPA action to end the threat of the proposed Pebble Mine and want to see the region protected for good. The threat that the proposed Pebble Mine poses to the people and resources of Bristol Bay has loomed over Bristol Bay for far too long. We thank EPA for restarting the Clean Water Act Section 404(c) process and urge it to take effective, durable, and timely action to protect the North Fork Koktuli, South Fork Koktuli, and Upper Talarik Creek watersheds from the threats posed by large-scale hard rock porphyry mining.

EPA Response

See EPA's response to comment 1.A.1.

1.A.152 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 1–2)

More than a decade of scientific study and review from EPA and a robust administrative record—including a Section 404 permitting process and analysis of impacts under the National Environmental Policy Act (NEPA)—support EPA protecting Bristol Bay's headwaters. The proposed Pebble mine project poses unacceptable risks to Bristol Bay's salmon fisheries and the economic and subsistence benefits those fisheries provide. As the Army Corps correctly decided in the culmination of its permitting process in 2020, Pebble mine cannot be permitted under the Clean Water Act. Because of its location, size, and type, the project poses unacceptable risks to Bristol Bay's pristine waters, salmon fishery, and way of life. For example, as proposed by the Pebble Limited Partnership (PLP) in its permit application to the Army Corps, the proposed 20- year mine would destroy more than 100 miles of streams and 2,100 acres of wetlands, completely decimating the headwaters critical to sustaining Bristol Bay's salmon fishery. Such impacts, proposed to occur in the state's most valuable and robust salmon ecosystem, are unprecedented in the history of resource development projects in Alaska.

EPA Response

See EPA's response to comment 1.A.1.

1.A.153 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 10, 11)

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%. [<https://www.bbnc.net/bbnc-shareholders-voice-strong-opposition-to-pebble-mine-in-recent-survey/>.] 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.

[Bar Graph of BBNC Shareholders Firmly Opposed to the Project included in submission here]

(...)

BBNC maintains its long-standing position that the proposed Pebble Mine Project, in any iteration of the proposed alternatives discussed in the Section 404 permitting process, is the wrong mine for the wrong place. As 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." [<https://www.bbnc.net/our-corporation/pebble-mine/> (emphasis original).]

EPA Response

See EPA's response to comment 1.A.1.

1.A.154 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 70)

BBNC supports timely final 404(c) action to protect Bristol Bay from the threats posed by mining the Pebble deposit. The threat of proposed Pebble Mine the resources and people of Bristol Bay has loomed over the region for far too long.

EPA Response

See EPA's response to comment 1.A.1.

1.A.155 IMARK Group (Doc. #0251, p. 1)

I agree strongly with the new EPA regulations to protect the waters and fishery in Bristol Bay. Keep up the good work!

EPA Response

See EPA's response to comment 1.A.1.

1.A.156 Sensiba San Filippo LLP (SSF) (Doc. #0482, p. 1)

Sensiba San Filippo LLP (SSF) stands with the people of Bristol Bay and the majority of Alaskans who support EPA action to protect Bristol Bay from the disastrous effects of the Pebble Mine.

(...)

SSF urges the EPA to follow the science and listen to the communities of Bristol Bay to protect this beautiful and unique resource. Please act swiftly and ensure that Bristol Bay will be protected for generations.

EPA Response

See EPA's response to comment 1.A.1.

1.A.157 Alaska State Legislature (Doc. #0505, p. 1)

In summation, please use your authority under section 404 c of the Clean Water Act process to finalize the Proposed Determination and veto Pebble Mine. Finish the job and protect Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.158 The Brodsky Charitable Foundation Trust (Doc. #0595, p. 1)

I care about brown bears and the wild habitat they depend upon, and support the permanent protection of the Bristol Bay region. The Pebble mine would have "unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas"

EPA Response

See EPA's response to comment 1.A.1. See also EPA's response to comment 6.A.2. and Section 6 of the FD for EPA's discussion on wildlife.

1.A.159 Trout Unlimited et al. (Doc. #0608, pp. 1, 2)

The undersigned entities, representing hundreds of thousands of businesses, hunters, anglers, and outdoor enthusiasts, applaud your leadership and efforts to provide longstanding protection for the Bristol Bay fishery and the people who depend on it. We greatly support a strong and comprehensive Proposed Determination, and respectfully request that Clean Water Act 404c safeguards be finalized as quickly as possible. Clean Water Act protections for Bristol Bay would ensure that projects like the formerly proposed Pebble mine could not return, and that the hunting, fishing and outdoor heritage that is deeply valued in southwest Alaska can continue to thrive for generations to come.

(...)

Two years ago, outdoor businesses and organizations came together to request the key federal permit for the proposed Pebble mine be denied. As businesses and organizations that rely on Bristol Bay's intact watershed, we have weighed in heavily and supported the local communities and hunting and fishing business owners who loudly and clearly said "no" to the formerly proposed Pebble mine for nearly two decades. Now, we stand behind local people once again in asking you to finalize Clean Water Act 404(c) safeguards to prevent Pebble – or another mining company – from returning to this region in the future.

Thank you again for your strong leadership on this issue and we look forward to weighing in and further supporting the advancement of Clean Water Act safeguards.

EPA Response

See EPA's response to comment 1.A.1.

1.A.160 Midgard Environmental Services LLC (Doc. #0616, pp. 1, 1–2)

Thank you for the opportunity to comment on the proposed Section 404(c) determination for the Pebble Mine. I strongly support the proposed determination to prohibit and restrict the use of certain waters in the Bristol Bay watershed as a disposal site for the discharge of dredged or fill material associated with the Pebble ore body.

(...)

I believe that the EPA should only exercise its Section 404c veto authority sparingly and only in exceptional circumstances. However, given the large unavoidable impacts and the high risk posed by the Pebble mine to the world-class Bristol Bay fishery and ecosystem, a Section 404c veto is clearly justified in this case. There are many other copper ore bodies in the United States and the world that could be developed or expanded with much lower environmental harm and risk to support our nation's transition to a renewable energy future.

EPA Response

See EPA's response to comment 1.A.1.

1.A.161 Choggiung Limited (Doc. #0815, p. 1)

We are calling on the Environmental Protection Agency (EPA) to fulfill its responsibility to complete Section 404 (c) of the Clean Water Act process and reach a Final Determination for Bristol Bay this year.

EPA Response

See EPA's response to comment 1.A.1.

1.A.162 Choggiung Limited (Doc. #0815, p. 1)

It is time for the EPA to expedite the 404(c) process and finalize protections this year. The 404(c) protections should prevent Pebble, and other potential large mining operations like it, from storing or disposing of mining waste at the headwaters of our fishery.

EPA Response

See EPA's response to comment 1.A.1.

1.A.163 Johns Hopkins Center for a Livable Future (Doc. #0822, p. 1)

We appreciate the work of the U.S. Environmental Protection Agency (EPA) in undertaking this determination and support both the proposed prohibition and proposed restriction laid out in this determination as critical protections needed not only for the survival of the Bristol Bay sockeye salmon fishery, but also the larger public, environmental, and economic health of the region.

EPA Response

See EPA's response to comment 1.A.1.

1.A.164 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 11)

Comments regarding whether the EPA Region 10 Regional Administrator should prepare a recommended determination for review by the Assistant Administrator for the Office of Water.

In my opinion, the EPA Region 10 Administrator should prepare a recommended determination for review by the Assistant Administrator for the Office of Water. The science summarized in this and the previous PD, the BBWA, the FEIS, and dozens if not hundreds of technical public comments in their regard clearly demonstrate that development of the proposed Pebble Mine would cause unacceptable adverse effects to the globally unparalleled Bristol Bay fishery.

EPA Response

See EPA's response to comment 1.A.1.

1.A.165 Alaska Wildlife Alliance (AWA) (Doc. #0836, pp. 1, 7)

Thank you for the opportunity to comment in support of the U.S. Environmental Protection Agency's (EPA) Proposed Determination to prohibit and restrict the use of certain waters in the Bristol Bay watershed as a disposal site for the discharge of dredged or fill material associated with mining at the Pebble deposit, May 26, 2022 (FR 32021).

(...)

Alaska Wildlife Alliance agrees with the agency's conclusion in support of the proposed prohibition described in the 2022 Proposed Determination. For the sake of Bristol Bay's unique wildlife and habitat

- resources our members and fellow Americans depend upon and enjoy - we urge the agency to adopt this critically important determination.

EPA Response

See EPA's response to comment 1.A.1.

1.A.166 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 2)

More than a decade of scientific study and review from EPA and the U.S. Army Corps and a robust administrative record-including a Section 404 permitting process and analysis of impacts under the National Environmental Policy Act (NEPA)-support use of EPA's use of its 404(c) Clean Water Act authority to permanently protect the Bristol Bay fishery from large-scale hard rock mining.

EPA Response

See EPA's response to comment 1.A.1.

1.A.167 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 3)

Given the clear science supporting EPA's 404(c) Proposed Determination, we support EPA's use of its 404(c) Clean Water Act authority to permanently protect the Bristol Bay fishery from large-scale hard rock mining.

EPA Response

See EPA's response to comment 1.A.1.

1.A.168 Environmental Protection Network (EPN) (Doc. #0857, p. 2)

[B]ased on our review of the process followed, the historical record, and the 2022 Proposed Determination and supporting documents, we agree with the findings in the 2022 Proposed Determination as presented by Region 10. The mine proposed in the Section 404 permit application, as reflected in the 2020 Mine Plan, should be prohibited and any other mining in the identified watershed that would have the same, similar, or greater level of impacts should be restricted.

EPA Response

See EPA's response to comment 1.A.1.

1.A.169 Anchorage Audubon Society (Doc. #0864, pp. 1, 2)

We urge the EPA to adopt its Proposed Determination, which would prohibit dredging and filling at the site where the Pebble Mine is planned.

(...)

In conclusion, please adopt the Proposed Determination, and thereby protect the Nushagak ecosystem from damage or obliteration caused by the proposed mine.

EPA Response

See EPA's response to comment 1.A.1.

1.A.170 Great Old Broads for Wilderness (Doc. #0878, p. 1)

In reference to the proposed ban for the Bristol Bay Area near the Pebble Mine in Alaska, docket number EPA-R10-OW-2022-0418, I would like to be on the record as supporting restrictions on the use of waters in the area as disposal sites. As a leader in Montana of the national group Great Old Broads for Wilderness, my colleagues and sisters in Alaska have asked for our support in prioritizing the health of area waters, fisheries and native communities over the benefit of good jobs for some people for some period of time. Our planet is finite, and we must prioritize planet health over human demands for exploitative mining, while there is still any unspoiled areas left.

EPA Response

See EPA's response to comment 1.A.1.

1.A.171 NY4Whales (Doc. #0891, p. 1)

We are writing on behalf of the officers, staff and membership of NY4Whales, a 501(c)(3) not for profit environmental organization. We find the wild salmon life cycle and waterways of Bristol Bay a critical component of the health of the environment and especially marine life of this Southwest Alaska region. Bristol Bay and its waterways support a heirarchy of wildlife from whales, grizzly bears, large and small mammals to bald eagles, fish and other wildlife throughout the important ecosystem. The EPA's proposal would block Pebble Mine's plan to dump mining waste and toxic pollutants into Bristol Bay, an act that would degrade the waterways and essential salmon spawning grounds, devalue the fishing industry, ecotourism and the economic stability of the region. Environmental and local community well-being depend on maintaining this area of Alaska as the largest remaining wild salmon fishery in the world. We strongly support the EPA's proposal to protect the Bristol Bay watershed by implementing the proposed rule that would ban dumping toxic mining industry waste into its waterways.

EPA Response

See EPA's response to comment 1.A.1. Note, EPA's action is not a rulemaking; see also EPA's response to comment 2.C.2 for further clarification.

1.A.172 Howling For Wolves (Doc. #0901, p. 1)

We support the EPA's proposed rule to prohibit and restrict the use of certain waters within the defined areas as disposal sites in the Pebble Deposit area. Many Howling For Wolves members have personally visited Alaska and have been awestruck by the wildlife and the pristine environment of the area where this mine is proposed. Bristol Bay is the largest remaining salmon fishery in the world. The salmon

provide food for grizzly bears, bald eagles, orcas and many other marine mammals in Alaska and likely even wolves. America must keep these types of unbelievable grandeur that supports so much life. The salmon fishery alone supports many people's livelihoods and provide high quality wild food which is a rarity in this world now. Please continue to restrict these waters from mining in and around Bristol Bay. The Pebble Mine would threaten all this with mine waste, toxic discharges, and general destruction of the river system that provides spawning grounds for the sockeye salmon. EPA is proposing a rule to prohibit dumping and mine tailings in this fragile watershed, ending the prospects for the Pebble Mine.

EPA Response

See EPA's response to comment 1.A.1. Note, EPA's action is not a rulemaking; see also EPA's response to comment 2.C.2 for further clarification.

1.A.173 Theodore Roosevelt Conservation Partnership (TRCP) (Doc. #1614, p. 1)

The TRCP strongly supports the revisions in the revised Proposed Determination and applauds your leadership for expanding the area that would be conserved under these protections to include the North Fork Koktuli, South Fork Koktuli and Upper Talarik Creek. These watersheds are critical to the productivity of Bristol Bay, which draws hunters, anglers and outdoor enthusiasts from around the world. It is time for the EPA to expedite the 404(c) process and conserve this landscape without delay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.174 Oceana (Doc. #1738, p. 1)

I support permanently protecting Bristol Bay as a unique place that must be free from the threat of mining now and into the future.

The majority of Alaskans support EPA action to end the threat of the Pebble Mine and there is broad public support for Bristol Bay to be permanently protected. It is time for the EPA to expedite the 404(c) process and finalize protections as quickly as possible. The EPA's action must protect several critical sub watersheds: the North Fork Koktuli, South Fork Koktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon and are under threat from the Pebble Mine.

Please finish the job and ensure that Bristol Bay's pristine lands and waters are protected in perpetuity.

EPA Response

See EPA's response to comment 1.A.1.

1.A.175 National Wildlife Federation Action Fund (Doc. #1740, p. 1)

urging you to quickly finalize the Proposed Determination with additional restrictions to permanently protect Bristol Bay's vital headwaters from the 2020 Pebble Mine plan and any other large-scale mine.

(...)

The Proposed Determination and its vast record clearly support both the proposed restrictions and more stringent safeguards to permanently protect Bristol Bay—and its communities—from the ravages of large-scale mining.

National Wildlife Federation Action Fund members stand with the people of Bristol Bay in calling on you to permanently protect Bristol Bay and its communities by quickly issuing a Final Determination that protects this incredible ecosystem from the 2020 Pebble Mine plan and any other large-scale mine.

EPA Response

See EPA's response to comment 1.A.1.

1.A.176 The Nature Conservancy (Doc. #1741, p. 2)

I'm adding my name to The Nature Conservancy's call for the EPA to use its authority under section 404(c) of the Clean Water Act to stop the proposed open-pit Pebble Mine because it would irreparably damage the salmon, lands, waters and communities in Bristol Bay.

Countless scientific assessments have shown that development of the Pebble Deposit would be devastating to the region, irreversibly harming thousands of acres of wetlands, one of the world's last great wild salmon runs, and the Indigenous communities who have relied on the salmon for thousands of years. It is with this information in mind that the signees support the EPA in completing the Section 404(c) process and urge the agency to finalize comprehensive protections swiftly.

We commend the EPA on their work in Bristol Bay under the 404(c) Clean Water Act process and look forward to supporting final agency action that offers durable and comprehensive protections.

EPA Response

See EPA's response to comment 1.A.1.

1.A.177 Alaska Wilderness League (Doc. #1743, p. 1)

We urge you to act now to protect one of the largest wild sockeye salmon runs in the world, a lifeline for the people of Bristol Bay and all those who depend on its immense cultural and economic value. We have enclosed the following 9141 signatures from our supporters who are equally concerned about protecting Bristol Bay and wild Alaska salmon for generations to come. They have each signed a petition stating:

Millions of Americans and the majority of Alaskans support EPA action to end the threat of Pebble and want to see Bristol Bay protected for good. It is time for the EPA to expedite the 404(c) process and finalize protections this year. The EPA's action must protect several critical sub watersheds: the North Fork Kaktuli, South Fork Kaktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon and are under threat from Pebble and large-scale mines like it.

EPA Response

See EPA's response to comment 1.A.1.

1.A.178 Natural Resources Defense Council (NRDC) (Doc. #1744, p. 1)

Please accept these 20,347 public comments from members and online activists of the Natural Resources Defense Council (NRDC), urging you to stop the dangerous Pebble Mine project for good and to finalize strong, durable protections for Bristol Bay.

(...)

The Proposed Determination under Section 404(c) of the Clean Water Act is moving in the right direction to stop the Pebble Mine, but the EPA can do more. We urge you to listen to the science and people of Bristol Bay to finalize strong, permanent protections for the region by the end of this year. The EPA must expeditiously conclude the 404(c) process and close the door on large-scale mining in Bristol Bay. The people and wildlife of Bristol Bay deserve a permanent solution.

EPA Response

See EPA's response to comment 1.A.1.

1.A.179 National Audubon Society (Doc. #1745, pp. 1, 2)

As someone who cares deeply about our country's natural heritage, I'm writing to urge you to use your authority under section 404(c) of the Clean Water Act process to finalize the Proposed Determination and veto Pebble Mine, which would irreversibly poison the waters of Alaska's Bristol Bay.

(...)

Please veto the harmful Pebble Mine project and avoid adverse impacts on the people and wildlife who depend on Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.180 Environment America (Doc. #1746, pp. 1, 2)

We, the undersigned, urge the Environmental Protection Agency to veto Pebble Mine and protect Bristol Bay.

(...)

Mining activities will introduce pollutants, debris, and fractured habitats putting an incredible place at great risk. It's past time to permanently protect these waters. Only a comprehensive Final Determination will ensure the bay's salmon and other amazing wildlife will have a chance to survive and thrive for

decades to come. On behalf of tens of thousands of members, we urge you to promptly issue a Final Determination and protect Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.181 Earthworks Action (Doc. #1748, p. 1)

I am in strong favor of lasting protection for Alaska's Bristol Bay, an ecosystem of unparalleled ecological value, supporting the largest and most productive wild salmon fishery on earth, with more than 75 million wild salmon expected to return in 2022.

(...)

The science is clear. Two decades of scientific study have determined that the disposal of mine waste in Bristol Bay's headwaters would cause irreparable harm. It is time for the EPA to expedite the 404(c) process and finalize protections this year.

(...)

Please use your authority under section 404(c) of the Clean Water Act to finalize the Proposed Determination this year and veto Pebble Mine.

EPA Response

See EPA's response to comment 1.A.1.

1.A.182 Backcountry Hunters & Anglers (BHA) (Doc. #1749, p. 1)

For decades, local tribes, Alaskans, commercial fishermen, and hunters and anglers from across the country have voiced their opposition to Pebble Mine and their desire to see Bristol Bay protected for good. It is time for the EPA to expedite the 404(c) process and finalize protections this year.

(...)

Please finish the job now and ensure that Bristol Bay's pristine lands and waters are protected in perpetuity.

EPA Response

See EPA's response to comment 1.A.1.

1.A.183 Friends of the Earth (Doc. #1751, p. 1)

I write to ask the EPA to take immediate action under Section 404(c) to finish the job it started in 2014 and protect Bristol Bay from large-scale mining like the Pebble Mine.

(...)

Given what's at stake, there is no question that EPA has the support of the people to move diligently and quickly under Section 404(c) to protect Bristol Bay from large-scale mining like the Pebble Mine. And given the clear science and existing administrative record supporting immediate 404(c) action—there is no question that EPA's decision to resume the 404(c) process is the right one.

I look forward to seeing swift EPA action and a robust administrative process that ensures the people of Bristol Bay can continue future fishing seasons with durable 404(c) Clean Water Act protections in place.

EPA Response

See EPA's response to comment 1.A.1.

1.A.184 Forever Wild Seafood (Doc. #1866, p. 1)

I join millions of like-minded and like-spirited US citizens in urging the EPA to use all of its power within the Clean Water Act to prohibit and restrict the use of defined areas as disposal sites, as defined by the Pebble Deposit Area in Southwest Alaska.

EPA Response

See EPA's response to comment 1.A.1.

1.A.185 Californians for Western Wilderness (Doc. #1903, p. 1)

We strongly urge you to finalize your determination under Clean Water Act §404(c), prohibiting and restricting the use of the defined waters in the watershed of Bristol Bay for disposal and discharge of dredged or fill mining materials that might come from an operational gold and copper mine in the "Pebble Deposit.

EPA Response

See EPA's response to comment 1.A.1.

1.A.186 Silver Bay Seafoods (Doc. #1910, p. 1)

On behalf of Silver Bay Seafoods, please accept these comments on the Environmental Protection Agency's (EPA) Clean Water Act Section 404(c) Proposed Determination to prohibit and restrict the use of certain waters in the Bristol Bay watershed as disposal sites for the discharge of dredged or fill material associated with mining the Pebble Deposit. Silver Bay Seafoods supports the EPA's updated proposed action to veto development of the Pebble Limited Partnership's (PLP) 2020 Mine Plan.

(...)

As harvesters of a renewable, sustainable resource, we rely heavily on sound science to guide long-term protections of these fisheries, our investments, and our livelihoods. After years of recorded scientific review and analysis by the EPA, we agree with your determination that PLP's proposed Pebble Mine

project would not be compatible with the sustainable fisheries in the Bristol Bay watershed due to its proximity to sensitive salmon habitat. We support the Clean Water Act Section 404(c) Proposed Determination for Bristol Bay watersheds and steps to finalize this Proposed Determination.

EPA Response

See EPA's response to comment 1.A.1.

1.A.187 Tribal Operations Committee (RTOC) (Doc. #2009, pp. 1, 2)

The Tribal Caucus has consistently supported EPA's determination pursuant to Section 404(c) for the Pebble Deposit Area. The Tribal Caucus previously requested that EPA exercise its authority under §404(c) of the Clean Water Act to take necessary action to limit or restrict the implementation of the project if it proves harmful to fish, wildlife, water supply, or other resources.

(...)

Given the serious impacts of the project on tribal communities that depend upon the watershed's salmon, the Tribal Caucus reiterates its previous recommendation that EPA continue to move forward in exercising its authority under CWA §404(c). The Tribal Caucus believes that the discharge of any dredged material should be prohibited absent conclusive, peer-reviewed findings that the discharge of materials will not adversely impact the health of the watershed and the salmon upon which many communities depend.

EPA Response

See EPA's response to comment 1.A.1.

1.A.188 Patagonia (Doc. #2061, pp. 1, 2)

I am writing to express Patagonia's strong support for the EPA to use section 404(c) of the Clean Water Act to permanently protect Bristol Bay from the threat of mines like the proposed Pebble Mine.

(...)

The majority of Alaskans support EPA action to end the threat of the Pebble Project and want to see Bristol Bay protected for good. It is time for the EPA to expedite the 404(c) process and finalize protections this year. The 404(c) protections should prevent Pebble, and other potential large mining operations like it, from storing or disposing of mining waste at the headwaters of the fishery.

(...)

Patagonia supports the EPA in completing the 404(c) process as swiftly as possible and we call on the agency to finalize comprehensive protections by the end of 2022. The scientific research and extensive administrative record overwhelmingly support a final 404(c) determination that protects Bristol Bay from not only the mine plan proposed by Pebble Limited Partnership in 2020, but any future large-scale mining like the Pebble Mine.

EPA Response

See EPA's response to comment 1.A.1.

1.A.189 Wild For Salmon (Doc. #2506, p. 1, 1)

We at Wild For Salmon support strong and comprehensive protections for Bristol Bay, and respectfully request that the EPA quickly finalizes the proposed Clean Water Act 404(c) protections to ensure that projects like the Pebble mine cannot threaten the resource in the future.

(...)

We want the assurance from the EPA through the Clean Water Act 404(c) process that Bristol Bay will be protected for future generations. From the young fishermen like our own children who caught their first fish in Bristol Bay this year, to the adults who have been fighting for decades alongside their families to keep Bristol Bay untouched and flowing with its incredible abundance of sockeye, we must ensure protection of this incredible renewable resource in every way we can.

EPA Response

See EPA's response to comment 1.A.1.

1.A.190 Mass Mailing Campaign (Doc. #2546, p. 1)

We greatly support the revisions in the Proposed Determination and thank you for expanding the area that would be protected under these safeguards. We respectfully request that Clean Water Act 404(c) be finalized as quickly as possible. Clean Water Act protections for Bristol Bay would ensure that projects like the formerly proposed Pebble mine could not return, and that the hunting, fishing and outdoor heritage that is deeply valued in southwest Alaska can continue to thrive for generations to come.

(...)

As businesses and organizations that rely on Bristol Bay's intact watershed, we have weighed in heavily and supported the local communities and hunting and fishing business owners who loudly and clearly said "no" to the formerly proposed Pebble mine for nearly two decades. Now, we stand behind local people once again in asking you to finalize Clean Water Act 404(c) safeguards to prevent Pebble – or another mining company – from returning to this region in the future.

Thank you again for your strong leadership on this issue and we look forward to weighing in and further supporting the advancement of Clean Water Act safeguards.

EPA Response

See EPA's response to comment 1.A.1.

1.A.191 Mass Mailing Campaign (Doc. #2549, p. 1)

Southwest Alaska's Bristol Bay region. I urge you to adopt the proposed protections that would keep this pristine region off-limits to risky large-scale mining development.

(...)

For over a decade, a broad coalition of stakeholders including local Tribes, a majority of Alaskans, commercial fishermen, and hunters and anglers from across the country have voiced their opposition to the proposed Pebble Mine and their desire to see Bristol Bay safeguarded for future generations. It is time for the EPA to expedite the 404(c) process and conserve this landscape without delay.

(...)

Please finish the job now and ensure that Bristol Bay's pristine lands and waters are protected in perpetuity.

EPA Response

See EPA's response to comment 1.A.1.

1.A.192 Mass Mailing Campaign (Doc. #2550, p. 1)

As you finalize the Proposed Determination for Section 404(c) of the Clean Water Act, we ask that you establish permanent protections against the Pebble Mine in order to protect the world's most valuable sockeye salmon fishery. We request that the agency use its authority under the 1972 Clean Water Act to ban the disposal of mining waste in the Bristol Bay watershed.

(...)

Opposition from Alaska Native communities, conservationists and the fishing industry has been loud and consistent for decades. It is time to finally grant permanent and durable protections to Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.193 Mass Mailing Campaign (Doc. #2553, p. 1)

As someone who depends on Bristol Bay's fishing industry, I respectfully request that the EPA take swift action to establish Clean Water Act protections for Bristol Bay's world-class wild salmon fishery. For two decades, Bristol Bay's communities and fishermen have lived under the shadow of the Pebble Mine and have fought to save our jobs and way of life. It's time for the EPA to use its authority under the Clean Water Act's Section 404(c) to establish long-term protections for Bristol Bay and thousands of American fishing families.

(...)

As fishermen whose livelihoods are fully dependent on the future health of Bristol Bay's wild salmon, we need the EPA to establish Clean Water Act protections.

(...)

It is time to establish lasting protections for Bristol Bay and its wild salmon runs and put an end to the uncertainty that has been hanging over Alaska's fishing industry and thousands of American fishing families for far too long. Please make Bristol Bay a top priority for your agency and move quickly to establish Clean Water Act protections for Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.194 Alaska Environment (Doc. #2558, p. 1)

I urge the Environmental Protection Agency to veto Pebble Mine and protect Bristol Bay.

(...)

The EPA should veto the mine and take steps to permanently protect this unique ecosystem.

EPA Response

See EPA's response to comment 1.A.1.

1.A.195 Mass Mailing Campaign (Doc. #2560, p. 1)

I am writing to urge the EPA to proceed with finalizing Clean Water Act 404(c) protections to prevent mining waste from damaging Bristol Bay.

(...)

Please proceed with finalizing the Proposed Determination under 404(c) of the Clean Water Act, and ensure Bristol Bay remains healthy for the next generation of anglers and sportsmen.

EPA Response

See EPA's response to comment 1.A.1.

1.A.196 Mass Mailing Campaign (Doc. #2562, p. 1)

Please finalize your determination under Clean Water Act section 404(c) to prohibit and restrict the use of certain waters in the Bristol Bay watershed as disposal sites for the discharge of dredged or fill material associated with mining the Pebble Deposit.

(...)

Please use your authority to veto the proposed Pebble Mine, and to designate the Bristol Bay watershed as off limits to all mining that would damage this precious resource.

EPA Response

See EPA's response to comment 1.A.1.

1.A.197 Bristol Bay Defense Fund (Doc. #2661, p. 1)

The majority of Alaskans and millions of Americans support EPA action to end the threat of Pebble. We want to see Bristol Bay protected for good. It's time for the EPA to expedite the 404(c) process and finalize protections this year.

(...)

I urge you to listen to the communities of Bristol Bay when shaping protections for this region. The Clean Water Act 404(c) process must provide true protections to the headwaters, not just limitations based on past mine plans. I urge you to move swiftly and finish this process quickly.

Please finish the job and ensure that Bristol Bay's pristine lands and waters are protected in perpetuity.

EPA Response

See EPA's response to comment 1.A.1.

1.A.198 Bristol Bay Native Corporation (Doc. #2667-7, p. 24)

I'm the Chairman of the Board of the Bristol Bay Native Corporation. All 12 members of the Board stand firmly against the Pebble Mine project, and we're all for the EPA 404C restrictions. We've had thousands and thousands, or millions of comments come into EPA in the past. I hope those are all still relevant today. I don't know of anybody that's changed their mind. Certainly, we haven't changed our mind on the project, and that we hope that you'll institute those restrictions this year. And, and we've been waiting for over a decade now, and, and it's going on two decades.

So we, we really appreciate you guys working on it. We really urge you to push this over the line this year.

EPA Response

See EPA's response to comment 1.A.1.

1.A.199 Kim Williams (Doc. #2667-17, pp. 48-49)

I want to thank you for this Proposed Determination, and it is completely - it is better than the last one - by far, it is, because you've taken into account Pebble's own Mine Plan. So I want to thank you for, for looking at the science, and looking at their own Mine Plan. But we, we need to finalize this. We need to get it done. We need to put it in place. And we need to do it by the end of the year. And I don't support any further comment extensions on this project - on this Proposed Determination. Let's get it done. We have enough time. We've taken time out of our busy lives to come in and testify. And I think our - get this done, and let's get it finalized by the end of the year.

EPA Response

See EPA's response to comment 1.A.1.

1.A.200 Peter Andrew (Doc. #2667-27, p. 65)

On behalf of my generation that came before me, and on behalf of the generations that are yet to come, this job the EPA is going to perform, this 404C, needs to be as strong as possible, get done as quickly as possible, so that we can enjoy our lives.

When we started this process, believe it or not, I had black hair. Alana, was in high school. Many of our mentors that are - that have helped us, are gone, sadly. They believed in this resource. They believed in looking to the future for our generations that are yet to come. They must enjoy this as much as our generations that have come before us. This is the most important, critical decision the EPA can make.

EPA Response

See EPA's response to comment 1.A.1.

1.A.201 Thomas Tilden (Doc. #2667-28, p. 66)

And you know, I, I was just looking back, and looking at the document that the six villages sent to EPA on May 10th in 2010, requesting 404C be implemented. And it seems as though that the, when you read the Clean Waters Act, and you see that the three protections that are needed - water, which is plentiful up in the mine area; fish, which is also plentiful up in the mine area; and community water wells, which the mine area drains into, and where Igiugig gets its water supply. So it seems as though that the - this was an ideal place to implement 404C.

EPA Response

See EPA's response to comment 1.A.1.

1.A.202 Daniel Schindler (Doc. #2667-31, pp. 72-73)

And last, I want you to consider who you've been hearing from today. These are people who are testifying based on their passions, not because they're paid to take a position on this. They have sacrificed their personal time with their families, from their jobs, from their lives, to continue this fight. These Pebble Mine hearings are getting boring. You know, I'd - many of these people have, have testified for over a decade. We hear the same thing at every testimony - at, at every hearing.

So, the bottom line is, it's time for the EPA to stand behind the good piece of work that you've done, and move ahead with strong protection for Bristol Bay watersheds.

EPA Response

See EPA's response to comment 1.A.1.

1.A.203 Pueblo of San Felipe (Doc. #0127, p. 1)

The Pueblo of San Felipe hereby submits our support to the United Tribes of Bristol Bay (UTBB) seeking permanent protection for Bristol Bay's headwaters from the Pebble Mine project and any other similar large-scale mining. It is our understanding that UTBB is asking the Environmental Protection Agency (EPA) to complete its Clean Water Act Section 404(c) process to reach a Final Determination for Bristol Bay by the end of 2022. If the mine is fully built, it would produce up to 10.2 billion tons of toxic waste and be devastating for the UTBB, as well as long-term economic health of our country.

EPA Response

See EPA's response to comment 1.A.1.

1.A.204 Mass Mailing Campaign (Doc. #2537, p. 1)

The science is clear, if built, Pebble Mine would permanently poison Bristol Bay's waters and imperil salmon and the incredible brown bears of the Bear Coast. Please use your authority under section 404 c of the Clean Water Act process to finalize the Proposed Determination and veto Pebble Mine.

Finish the job and protect Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.205 National Fisheries Institute (NFI) (Doc. #0854, pp. 1, 3)

NFI supports EPA's updated, Proposed Determination to veto development of the Pebble Limited Partnership's 2020 Mine Plan. If finalized, EPA's Determination would protect the Bristol Bay watersheds and rivers that support the world's largest and most economically and ecologically valuable sockeye salmon fishery, a fishery that in the most recent harvest accounted for 57 percent of the world's sustainable wild salmon harvest. The Pebble Mine project poses a significant threat to the Bristol Bay fishery. The project as proposed by the Pebble Limited Partnership ("PLP") should not proceed.

(...)

The Pebble Mine proposal has generated widespread opposition from Alaska Natives, Tribes, Bristol Bay residents, commercial fishermen, seafood processors, and environmental advocates. Bristol Bay must be permanently safeguarded to ensure it can continue to provide jobs, revenue, cultural traditions, and sustainable seafood for Americans and consumers around the world. Accordingly, NFI urges EPA to finalize permanent CWA protections for Bristol Bay.

EPA Response

See EPA's response to comment 1.A.1.

1.A.206 Tribal Operations Committee (RTOC) (Doc. #2009, p. 2)

EPA's Determination has broad support. More than 65 percent of Alaskans, 80 percent of Bristol Bay residents and Native communities, and 85 percent of commercial fishermen oppose the Pebble Mine. Because of its great, ecological, economic, and cultural value, we continue to support the 404(c) Determination.

EPA Response

See EPA's response to comment 1.A.1.

1.A.207 Teresa Capa (Doc. #2662-1, pp. 4-5)

And so if, if we lose our - if, if - not only is Alaska, the salmon income the biggest producer of income for the state of Alaska - also, we are in the Ring of Fire. We're in the, the greatest amount of earthquakes, and the greatest amount of volcanos, in an active, volatile region. So why would not the State of Alaska stand up and say, 'Hey, this is like a two year old decision here. Let's protect our fishing industry. Let's build it, and you know, rise against this.'

So my biggest thing is, I'm so grateful for the EPA, and that they keep - I loved how the gentleman, last speaker out there just called that, 'You're the champions.' And I'm like, that really speaks to me - because who, who but a champion is going to rise, and stand in. And so I, I literally, because it's a spiritual matter, it's - and I wanted to somehow say this in the group - that let's pray for EPA. Let's pray for this protection of our area, because it is a spiritual battle. And if we can pray, and move by faith that God is going to move, as long as we're acknowledging Him as sovereign, that He will release the spirit of wisdom and might in the people that are protecting our, our region.

EPA Response

See EPA's response to comment 1.A.1.

1.A.208 Joe Chythlok (Doc. #2667-36, p. 85)

I am a hundred percent have been opposed to Pebble Mine. And we've been before EPA many times. And the last Administration, we had some EPA folks that listened to our Bristol Bay leaders. When they got back to Washington DC, after they told us they were going to do everything they can for us, they changed their mind. But I know you won't, because you work for the right Administration. And I hope that you realize that, that our people have depended on it.

EPA Response

See EPA's response to comment 1.A.1.

1.A.209 Cody Larson (Doc. #2662-2, pp. 6–7)

I live here in Dillingham, Alaska. I've lived here for 15 years, and in that time gained an appreciation for the way of life here in Bristol Bay. And I want to thank the EPA for being here, and thank you for your public service in working for the good of the people.

The community leaders here in this room are carrying the voices of those that are no longer with us. If you are hearing this testimony, or reading this transcription, it's now your responsibility to fulfill this promise to protect the people, and the land that they eat from, the air they breathe, and the water they drink.

This mine plan was an effort to get a foot in the door. Recognize that the door is not open, will not open. The door to mining in Bristol Bay does not exist. Now, let's finalize this protection, and start working on the next.

EPA Response

See EPA's response to comment 1.A.1.

1.A.210 Bristol Bay Native Association (Doc. #2667-41, pp. 95–97)

You know the science. Thank you for being here to hear our hearts. EPA's mission is to protect human health and the environment, by ensuring that Americans have clean air, land, and water. For two decades the people of Bristol Bay have gathered to speak to the EPA, and describe themselves as stewards and caretakers of the land, a responsibility that indigenous residents have undertaken since time immemorial.

Meanwhile, during those two decades, humans collectively have been, and continue to be the primary drivers of environmental changes, such as deforestation, climate change, ocean acidification, and pollute - and the pollution of fragile ecosystems through activities such as the proposed Pebble Mine.

According to many leading scientists, humans are on a trajectory to cause extinction of the majority of all species on Earth, a scale that throughout geological history has only ever been caused by giant meteor impacts, and continent-sized vulcanism. That is how destructive we are becoming, with reckless endeavors like Pebble.

I don't want to be an alarmist, but the ramifications of the proposed Pebble Mine are very alarming. If we had listened to messages that indigenous ecological knowledge has to offer about sustainability and respecting the land, maybe we wouldn't be facing environmental distress throughout the world at this moment.

If EPA's mission is really to protect human health and the environment, now is the time to prove it. Listen to the message that the stewards of these lands have continually spoken. Their message is as clear as the science. The Pebble Mine would be devastating to the ecosystems of Bristol Bay, and to its people's way of life, and a continuation of the havoc we are wreaking on this planet.

I urge the EPA to finalize 404C protections for the Bristol Bay watershed as quickly as possible, and let Bristol Bay continue to be an example of prioritizing the health and sustainability of the environment, and be a sliver of hope for what remains wild and pristine in this world. Or, continue to disregard the health of the land, of the Earth, of our home, and leave our descendants with a Bay, and with an Earth made desolate from the selfishness, greed

(...)

and passivity of their parents' and their grandparents' generations

EPA Response

See EPA's response to comment 1.A.1.

1.A.211 United Tribes of Bristol Bay (Doc. #2667-43, pp. 100–101)

We are asking the EPA to finalize strong protections that make sure that our kids and grandkids do not have to do this again for 20 years; that we don't have young people growing up in times of extreme stress, a wartime, basically. And we want you to think about what that does to our region, being held hostage by this - by this project for almost 20 years, and having the very core of who we are be threatened and in jeopardy day, after day, after day. So, please use your power to finalize strong protections that actually stop this threat for good.

EPA Response

See EPA's response to comment 1.A.1.

1.A.212 Greta Goto (Doc. #2664-14, pp. 12–13)

I also want to thank the EPA for going to the region and taking public comments in person and virtually during this webinar, this issue is incredibly important to my region. There continues to be strong support for 404(c) action among the tribes, commercial and sport fishing interests, residents and other stakeholders. Opposition to Pebble among BBNC shareholders is 70 to 80%, and greater than 80% are concerned about the impacts Pebble could have on our fishery. In releasing the proposed revisions EPA stated, as one of its justifications, the need to avoid another multi-year NEPA and CWA section 404 review process for future mine plans. Thank you for acknowledging the great burden that this puts on the people of Bristol Bay. Our people need finality, as we have been engaged in and distracted by this effort for over two decades. I'd like to thank you again for listening, for coming out to our region, and for taking action.

EPA Response

See EPA's response to comment 1.A.1.

1.A.213 Mike Bianchi (Doc. #2664-21, p. 18)

I strongly encourage you to support and endorse and follow through with protections under the 404(c). Pebble Mine has shown time and again that they are untrustworthy,

(...)

From the Pebble tapes to operating outside their permits, to not holding to their word at every turn, and every chance, Pebble Mine has shown they are untrustworthy when it comes to the care, safety, and preservation of a fishery, a way of life, a region, and a culture. There needs not be any more comment period. There needs not be any more facilitating Pebbles desires. They need to be shut down, and the region preserved in perpetuity. Thank you.

EPA Response

See EPA's responses to comments 1.A.1. and 1.A.142.

1.A.214 Doug Morgan (Doc. #2664-34, p. 26)

lifelong Alaska resident, lifelong Bristol Bay fisherman. I would ask that the EPA follows through on it this time, and put this to bed for good. It's been a long fight. We appreciate the help. Thank you very much for your time, and hopefully this brings this to an end.

EPA Response

See EPA's response to comment 1.A.1.

1.A.215 William Petrik (Doc. #0241, p. 1)

The battle against Pebble is for obvious reasons and has been going on for years. It is time to finally make a determination against its development. The design and location of Pebble mine is a mistake. I urge the U.S.E.P.A. to halt construction of it and issue Section 404(c) Proposed Determination, a ban for the project to dispose of dredged material into streams or wetlands.

EPA Response

See EPA's response to comment 1.A.1.

1.A.216 Flint Hills EcoVenture, LLC (Doc. #0321, p. 1)

There is absolutely NO SANE reason to contemplate hard rock mining or oil and gas drilling in Bristol Bay. Never. Protect Bristol Bay in perpetuity under section 404(c) of the Clean Water Act.

EPA Response

See EPA's response to comment 1.A.1.

1.A.217 Eileen Rothschild Nelson (Doc. #0601, p. 1)

Please pass Section 404(c) Proposed Determination to prohibit and restrict the use of certain waters in the Bristol Bay watershed as disposal sites for the discharge of dredged or fill material associated with mining the Pebble Deposit. The Bristol Bay watershed in southwestern Alaska supports the largest sockeye salmon fishery in the world, and it is home to 25 federally recognized tribal governments. If finalized, EPA's Section 404(c) determination would help protect the Bristol Bay watershed's rivers, streams, and wetlands that support the world's largest sockeye salmon fishery and a subsistence-based way of life that has sustained Alaska Native communities for millennia

EPA Response

See EPA's response to comment 1.A.1.

1.A.218 Californians for Western Wilderness (Doc. #1903, p. 1)

Protecting the area from development might also contribute to eventually reaching the Administration's 30x30 goal of protecting 30% of America's land and waters by 2030.

EPA Response

See EPA's response to comment 1.A.1.

1.A.219 Stephen Sullivan Designs (Doc. #0267, p. 1)

As for the proposed mining of Bristol Bay for the purpose of resource extraction, the EPA will commit a great sin against the most valuable resource of our Alaska Wilderness: the unpolluted natural resource of clean water, and forest land. In a time when the climate time-bomb is threatening the stability of our region, and our world, our most valuable resource is wilderness undisturbed.

The fish, the water, and the untouched land are what we humans need: not more gold, copper and minerals.

EPA Response

See EPA's response to comment 1.A.1.

1.A.220 Swaggy Swan (Doc. #0273, p. 1)

Ravaging an ecosystem forever for the sake of a foreign company's mining profits while simultaneously ruining devastating salmon, conservation, and tourism jobs makes no logical sense to anyone. This is not political, it's 1,000% common sense. Do the right thing.

EPA Response

See EPA's response to comment 1.A.1.

1.A.221 Rebecca Dameron (Doc. #2195, p. 1)

The construction and aftermath of the construction and use of this mine has the potential to destroy the livelihood of about 15,000 people, the life of the waters in Bristol Bay and the lives of millions of Salmon.

I come to Alaska at least once a year and would like to continue to come and spend my \$ there. I want to be able to come to an area that is lively + aliveWorld Travellers (Doc. #0274, p. 1)

You cant' do this

HUMANS HAVE TAKEN ENOUGH OF WHAT IS NOT OURS

Good god, what the hell does it take to protect a species that we need to protect yet we continue to take their homes Stop stop STOP –

It's not necessary –

THEY NEED THE SALMON TO SURVIVE

Have we not taken enough and created enough industrialization ? ENOUGH IS ENOUGH

Protect what we have This is just BS –

Such sort term human interruption again will cause such long term damage STOP ! JUST BLOODY STOP !!!

EPA Response

See EPA's response to comment 1.A.1.

1.A.222 Jim Gilbert (Doc. #0407, p. 1)

Keep Bristol Bay clean! Do not allow dredging operations, or tailings or discharges from the proposed mine. Make penalties for any infractions high enough to strongly penalize the mining company and to cover all clean up costs.

EPA Response

See EPA's response to comment 1.A.1. Comments regarding potential future penalties for infractions are outside the scope of this action.

1.A.223 SumOfUs (Doc. #1750, p. 1)

TO: EPA and Congress

Protect Alaskan fisheries by restricting mine waste disposal from Pebble via the 404(c) authority under the Clean Water Act and drop the legislation (h.r. 1179) to eliminate the EPA's authority under 404(c).

EPA Response

See EPA's response to comment 1.A.1. Comments regarding legislative changes to EPA's CWA 404(c) authority are outside the scope of this action.

1.A.224 Gods' Grace Outreach Ministries, International (Doc. #2369, p. 1)

Whether one is a person of faith , an outdoors enthusiast or wildlife lover , good stewardship calls and is a sacred responsibility.

We do not own the present but manage it for future generations.

Clean water supply and well maintained wilderness contributes to the life of humanity ,as well as all flora and fauna.

With this in mind , please strive to not allow the misuse or pollution of said locations.

EPA Response

See EPA's response to comment 1.A.1.

1.A.225 Mass Mailing Campaign (Doc. #2565, p. 1)

The precious metals the mine wants to extract are not going anywhere, so let's wait for a better future and better technology.

EPA Response

See EPA's response to comment 1.A.1. As articulated in Section 5 of the FD, future proposals to develop the Pebble deposit will be evaluated in the context of the prohibition and restriction. See also Section 5.3 regarding when a future proposal is not subject to the FD.

1.A.226 Dagen Nelson (Doc. #2667-47, p. 108)

I ask that each and every one of you who have heard my feelings to ask yourself these four questions. One, am I responsible for the condition I leave the land for future generations? Two, do I really need the money that is being used as a tool to abuse our traditional and great way of life? Three, can we really develop the Pebble Mine without dividing our people? And Four, am I not the caretaker of our lands, air, and water that are essential to a quality life for everyone today and tomorrow? And that is not just for here. It's worldwide. And we need to start someplace, and clean up messes we've created, and not create more messes. And I really believe that we can do it.

EPA Response

See EPA's response to comment 1.A.1.

1.A.227 Dagen Nelson (Doc. #2667-47, p. 108)

And - you were here before, right? The EPA? Five years ago? And I'll tell you what, for five years, every time I hear the Pebble Mine, I think my lifespan is getting shorter, because they say stress is really bad for you.

EPA Response

See EPA's response to comment 1.A.1.

1.A.228 Fritz Johnson (Doc. #2664-38, p. 28)

some of the frustration comes from the fact that the proponents of this mine have demonstrated both their arrogance and their dishonesty so for us to believe that there might be some way that this mine could be developed in a way that would not hurt our fisheries resources, it's absurd.

(...)

This mine is poison, it's toxic, in more ways than one.

EPA Response

See EPA's response to comment 1.A.1.

1.A.229 Frank Woods (Doc. #2667-48, pp. 109–110)

And that way is regulatory process, and industries, and control of our region. Mining is a bad idea. I believe we live in America, where one person can stand up. If the laws ain't working, we can help change them laws, and make a difference in our country. At least, that what was told me growing up, learning the Western way of, of education - that the Constitution of the United States to bodies that follow under it, were there for a purpose - to protect our rights as people, as Americans, as Alaska Natives.

EPA Response

See EPA's response to comment 1.A.1.

1.B Requests for Stronger Protections**1.B.1 Natural Resources Defense Council et al. (Doc. #0617, pp. 1–2, 3)**

On behalf of the 122 undersigned organizations, representing tens of millions of members and supporters from across the country, we write to commend the U.S. Environmental Protection Agency (EPA) for issuing the Proposed Determination for the Pebble Deposit Area under Section 404(c) of the Clean Water Act[33 U.S.C. § 1344(c),] that, if finalized, would prohibit the Pebble Mine and restrict future mining of the Pebble deposit.[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

(May 2022), <https://www.epa.gov/system/files/documents/2022-05/Pebble-Deposit-Area-404c-Proposed-Determination-May2022.pdf>.] We urge EPA to promptly issue a Final Determination that not only prohibits or restricts past, current, and future plans for the Pebble deposit but also protects Bristol Bay's headwaters from large-scale porphyry ore mining like that proposed for the Pebble deposit. We support EPA in completing the 404(c) process as swiftly as possible and call on the agency to finalize comprehensive protections by the end of 2022.

Our comments support and amplify requests from United Tribes of Bristol Bay (UTBB), Bristol Bay Native Association (BBNA), Bristol Bay Native Corporation (BBNC), Bristol Bay Economic Development Corporation (BBEDC), and Commercial Fishermen for Bristol Bay (CFBB) urging EPA to finalize strong and durable protections for Bristol Bay this year.[BBEDC, BBNA, BBNC, CFBB, and UTBB Press Release, Bristol Bay Leaders call on EPA to finalize comprehensive protections this year (June 1, 2022), <https://www.utbb.org/press-releases>.] We join the economic, cultural, and social leaders of Bristol Bay calling on EPA to issue a Final Determination that provides comprehensive protections for Bristol Bay and the people who depend on it:

(...)

Our groups stand by to support final agency action that ensures the people of Bristol Bay can end the year with strong, durable, and comprehensive 404(c) Clean Water Act protections in place.

EPA Response

EPA is acting under CWA Section 404(c), which is an important part of the CWA Section 404 regulatory structure as contemplated by Congress, to prevent unacceptable adverse effects on anadromous fishery areas. See 33 United States Code (USC) 1344(c). EPA alone has authority to act under CWA Section 404(c). EPA's CWA Section 404(c) action does not regulate mining or mineral development. EPA's action limits USACE's ability to specify certain waters of the United States as disposal site for certain discharges of dredged or fill material.

The FD prohibits the specification of and restricts the use for specification of certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit that EPA has determined will have unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD provides the basis for EPA's determination that discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD. Section 5 of the FD is also clear that not all future proposals to develop the Pebble deposit may be subject to this FD and that "[p]roposals to discharge dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to this

determination remain subject to all statutory and regulatory authorities and requirements under CWA Section 404.”

EPA has revised Section 5 of the FD as a result of public comments. See EPA’s responses to comments 5.A.1, 5.A.7, 5.B.1, 5.A.8, 5.C.60.

The FD exclusively focuses on discharges of dredged or fill material associated with developing the Pebble deposit. See EPA’s responses to comments 4.B.27, 4.B.50, 5.A.7, and 7.0.1.

With respect to the request for EPA to expedite final agency decision-making, EPA has conducted its CWA Section 404(c) review process within the regulatory timeframes specified in EPA’s implementing regulations (40 CFR 231.5(a)).

With respect to comments comparing the 2014 PD to the 2022 PD, see EPA’s response to comment 7.0.1.

See also EPA’s response to comment 1.A.1.

1.B.2 Natural Resources Defense Council (NRDC) (Doc. #0839, pp. 2–4)

Comments regarding whether the EPA Region 10 Regional Administrator should withdraw the proposed determination or prepare a recommended determination for review by the Assistant Administrator for the Office of Water.

EPA’s Region 10 Administrator should immediately prepare a Recommended Determination, and EPA should, by the end of 2022, issue a Final Determination under Section 404(c) of the Clean Water Act that protects Bristol Bay from the ongoing threat of the Pebble Mine, as well as from future threats of large-scale porphyry ore mining of the Pebble deposit.

Bristol Bay is a “national treasure” of unparalleled ecological and economic value. [Press Release, U.S. Dep’t of the Interior, Secretary Salazar Announces Comprehensive Strategy for Offshore Oil and Gas Development and Exploration (Mar. 31, 2010), https://www.doi.gov/news/pressreleases/2010_03_31_release [<https://perma.cc/BTJ6-MLLD>].] It is surrounded by two national parks (Katmai National Park and Preserve and Lake Clark National Park and Preserve), several national wildlife refuges (Togiak National Wildlife Refuge and Becharof National Wildlife Refuge), and the largest state park in the United States (Wood- Tikchik State Park). The Bristol Bay watershed provides habitat for more than twenty-nine fish species (all five species of Pacific salmon found in North America), forty terrestrial mammal species, and 190 bird species. [Id.]

Bristol Bay’s fishery has sustained Indigenous peoples in Alaska for over 4,000 years, and the Yup’ik and Dena’ina are two of the last intact, salmon-based cultures in the world.[EPA, 910-R-14-001A, An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska ES-8 (2014), <https://www.epa.gov/sites/default/files/2015->

[05/documents/bristol_bay_assessment_final_2014_es.pdf](#) [<https://perma.cc/9UFV-3887>] [hereinafter “Watershed Assessment”].] Salmon are the lifeblood of Indigenous culture, providing not only food and subsistence-based livelihood, but also a foundation for their language, spirituality, and social structure. [Id. at ES-8.]

EPA Administrator Regan described the Bristol Bay watershed as “a shining example of how our nation’s waters are essential to healthy communities, vibrant ecosystems, and a thriving economy.” [Press Release, EPA, EPA Proposes to Protect Bristol Bay’s Salmon Fishery, Subsistence Fishing for Alaska Natives (May 25, 2022), <https://www.epa.gov/newsreleases/epa-proposes-protect-bristol-bays-salmon-fishery-subsistence-fishing-alaska-natives-0>] Radhika Fox, EPA Assistant Administrator for the Office of Water, called Bristol Bay “essential to the livelihood and the community well-being of many Alaskan tribes [and] one of the most productive salmon fisheries in North America.” [Dino Grandoni & Joshua Partlow, EPA to Protect Alaska’s Bristol Bay, Blocking Major Gold Mine, Washington Post (Sept. 9, 2021, 4:45PM), <https://www.washingtonpost.com/climate-environment/2021/09/09/biden-bristol-bay-gold-mine/> <https://perma.cc/LE25-K5ME>.] Indeed, Bristol Bay supports the world’s greatest wild salmon fishery with average runs of thirty to fifty million fish annually. [News Release, Alaska Dep’t of Fish & Game, 2019 Bristol Bay Salmon Season Summary (2019), <https://www.adfg.alaska.gov/static/applications/DCFnewsrelease/1114049452.pdf> [<https://perma.cc/8NNZ-E7N2>].] For the past several years, the runs have been record-breaking. The 2020 sockeye salmon run totaled 58.2 million fish, [Id.] the 2021 run totaled 67.7 million fish, [Advisory Announcement, Div. of Com. Fisheries, 2021 Bristol Bay Salmon Season Summary (2021), <https://www.adfg.alaska.gov/static/applications/DCFnewsrelease/1337414316.pdf> [<https://perma.cc/HPE3-MAVW>].] and the 2022 run totaled 78.4 million fish. [Alaska Dep’t of Fish & Game, Bristol Bay Daily Run Summary (2022), <https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.harvestsummary>.] This is exceptional given the declines in other salmon fisheries across Alaska and in the lower 48. [Jim Robbins, How Long Before These Salmon Are Gone? Maybe 20 Years, Washington Post (Sept. 16, 2019) <https://www.nytimes.com/2019/09/16/science/chinook-salmon-columbia.html> [<https://perma.cc/DMB3-HYVR>].]

Bristol Bay’s wild salmon are the linchpin of the region’s economy. In 2013, researchers at the University of Alaska valued the Bristol Bay commercial salmon fishery at \$1.5 billion annually, making it the most valuable wild salmon fishery in the world. [Gunnar Knapp et al., Univ. of Alaska Anchorage Inst. of Soc. & Econ. Research, The Economic Importance of the Bristol Bay Salmon Industry (Apr. 2013), https://iseralaska.org/static/legacy_publication_links/2013_04-TheEconomicImportanceOfTheBristolBaySalmonIndustry.pdf [<https://perma.cc/6FJM-YD3Z>].] Researchers also found that Bristol Bay supplied half the world’s sockeye salmon and supported 14,000 jobs as well as other vital economic sectors, including sport and subsistence fishing and hunting, tourism, and recreation. In 2021, the McKinley Research group strengthened those findings in a comprehensive study titled “The Economic Benefits of Bristol Bay Salmon.” [McKinley Rsch. Grp., The Economic Benefits of Bristol Bay Salmon (Feb. 2021), <https://stoppebbleminenow.org/wp->

content/uploads/2021/03/Final-Economic-Benefit-of-Bristol-Bay-Salmon-3_17_21.pdf

[<https://perma.cc/3ZKJ-ABPF>.] According to McKinley, the Bristol Bay wild salmon fishery generates \$2.2 billion in annual revenue, supports 15,000 full time jobs, and supplies fifty-seven percent of the world's sockeye salmon. [Id.]

Given its extraordinary and irreplaceable ecological and economic value, Bristol Bay is simply the wrong place for large-scale porphyry ore mining like the Pebble Mine. And given its location at the headwaters of the Bristol Bay watershed, any economically-feasible mining of Pebble's copper and gold would put salmon—which are highly sensitive to even the slightest increases in copper—at great risk. Absent Section 404(c) safeguards, the mining industry will continue to seek to industrialize and exploit the minerals that remain embedded in the upper watershed of Bristol Bay—whether the applicant is Northern Dynasty Minerals or some future, yet unknown mine developer. In a declaration, mining industry expert Richard Borden, former Head of Environment for Rio Tinto's Copper, Copper & Diamonds and Copper & Coal Product Groups, described the reality and urgency—the inevitability—of the industry's continuing interest in Bristol Bay. Borden's analysis was informed by his participation in more than twenty financial and technical assessments of new major capital projects and potential acquisitions, as well as environmental and permitting work at over fifty mines, projects, and operations. He warned that future development, absent 404(c) protection, is not a matter of if but when:

[T]he Pebble ore body will pose a continuing and nearly irresistible temptation to future developers despite the longstanding, broad-based opposition, technical challenges, and significant, unavoidable environmental impacts that would be associated with the mine. Major, mid-level, and junior mining companies will continue to periodically monitor and review the status of the ore body, looking for a political, economic, and social window of opportunity. [Declaration of Richard K. Borden (April 16, 2021) (hereinafter "Borden Decl.").]

Under these circumstances, EPA should exercise its Section 404(c) authority to prohibit and restrict large-scale porphyry ore mining on the Pebble deposit. According to Borden, Bristol Bay is an "exceptional circumstance" warranting 404(c) action now. [Letter from Richard Borden, Midgard Environmental Services LLC, to Casey Sixkiller, EPA 10 Regional Administrator (Aug. 12, 2022) at 1.]

[G]iven the large unavoidable impacts and the high risk posed by the Pebble mine to the world-class Bristol Bay fishery and ecosystem, a Section 404(c) veto is clearly justified in this case. There are many other copper ore bodies in the United States and the world that could be developed or expanded with much lower environmental harm and risk to support our nation's transition to a renewable energy future. [Id. at 1-2.]

EPA should act immediately using its authority under Section 404(c) of the Clean Water Act to protect Bristol Bay.

EPA Response

Section 4 of the FD provides the basis for EPA's determination that discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse

effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. The administrative record supports EPA's FD.

EPA agrees that the Bristol Bay watershed is an area of unparalleled ecological value, boasting salmon diversity and productivity unrivaled anywhere in North America. EPA also agrees that the streams, wetlands, and other aquatic resources of the Bristol Bay watershed provide the foundation for world-class, economically important commercial and sport fisheries for salmon and other fishes. See Section 3 of the FD for more information about Bristol Bay's ecological resources. Also see *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b) (referenced in Section 4.4 of the FD) for more information about EPA's consideration of cost-related issues.

EPA agrees the region's salmon resources have supported Alaska Native cultures for thousands of years and continue to support one of the last intact salmon-based cultures in the world. See EPA's response to comment 6.E.9 and also Sections 3 and 6 of the FD for more information about the importance of the region's fishes as a subsistence resource.

Regarding the commenter's recommendation to "prohibit and restrict large-scale porphyry ore mining on the Pebble deposit," see EPA's responses to comments 4.B.27 and 5.A.7.

See also EPA's response to comment 1.B.1.

1.B.3 Trustees for Alaska et al. (Doc. #0831, p. 2)

Comments regarding any corrective action that could be taken to reduce adverse impacts on aquatic resources from discharges of dredged or fill material associated with mining the Pebble deposit.

Any large-scale hardrock mining in the headwaters of Bristol Bay would have unacceptable adverse effects to the aquatic ecosystem. Avoidance and minimization efforts, including adjustments to details like the type and location of tailings storage facilities, design changes to tailings dams, relocation of the mine pit or changes to water discharge plans will not change this fact. The 2020 Mine Plan Pebble Limited Partnership (PLP) put forward was a "small" mine plan, widely regarded as uneconomic and infeasible without subsequent expansion, and yet even it would have unacceptable adverse effects, as EPA notes in the revised PD. Even drastically reducing the size of the mine itself is unlikely to be sufficient. As the Bristol Bay Watershed Assessment found, even a significantly smaller mine than proposed in the 2020 Mine Plan would have extensive impacts, [U.S. Environmental Protection Agency. 2014. An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska. Region 10, Seattle, WA. EPA 910-R-14-001 (hereinafter "BBWA") at ES-15.] which EPA reasonably characterized as unacceptable. [U.S. Environmental Protection Agency, 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 at 5-1 (2014) (hereinafter "2014 PD").]

In addition, EPA must review any proposed corrective actions submitted by PLP with scrutiny, as PLP and NDM have a history of not being forthright regarding their actual intended plans. In September of 2020, the Environmental Investigation Agency (EIA) released a series of recorded conversations between EIA investigators and the Chief Executive Officers of PLP and its parent company, Northern Dynasty Minerals (NDM). These conversations, referred to as “the Pebble Tapes,” reveal that PLP submitted an application that fundamentally misrepresents the ultimate intended scale and timeframe for the project, undermining not only the environmental analysis under the National Environmental Policy Act (NEPA), but the legitimacy of the application under the CWA. [See Letter from Brian Litmans, Legal Director, Trustees for Alaska to Shane McCoy, Program Manager, Regulatory Division, U.S. Army Corps of Engineers, Sept. 28, 2020 (Ex. 126) and Letter from Brian Litmans, Legal Director, Trustees for Alaska to Shane McCoy, Program Manager, Regulatory Division, U.S. Army Corps of Engineers, Nov. 17, 2020, with attachments. (Ex. 135)] Because representatives from both PLP and NDM indicated to EIA investigators, posing as would-be investors, that the mine would be much larger than that presented in their CWA permit application, any representations by either company regarding new corrective actions must be thoroughly vetted to ensure they are genuine and economically viable options. Further, any attribution of initially diminished impacts due to “corrective action” must be viewed in context: not of the fictitious smaller mine proposed by Pebble, but rather in relation to its actual long-term plan for a 200-year operation that would extract the entire 10+ billion-ton ore body, as articulated by the CEOs of PLP and NDM in the Pebble Tapes. The statements of representatives of PLP and NDM in the Pebble Tapes also make clear that only the larger, longer-term project is economically viable. PLP and NDM cannot be allowed to secure an initial permit on the basis of misrepresentations as to the eventual scale or environmental impacts of the final project they intend to pursue.

EPA Response

See EPA’s response to comment 2.A.2 regarding how the potential future mine expansion was addressed in the FD.

The CWA Section 404(c) implementing regulations at 40 CFR 231.6 require the Administrator or their designee to initiate consultation with the United States Army Corps of Engineers (USACE), the owner(s) of record, and, where applicable, the State and the applicant. The purpose of this consultation is to provide these entities the opportunity to notify EPA of their intent to take corrective action to prevent unacceptable adverse effect(s). Consistent with 40 CFR 231.6, EPA initiated this consultation on December 2, 2022. EPA has considered the information contained in the responses from each of these entities and the administrative record supports EPA’s FD (see Section 2.2.2 of the FD for a summary of this consultation process).

1.B.4 Bristol Bay Native Association (BBNA) (Doc. #0802, pp. 1, 5)

The Bristol Bay Native Association (BBNA) is writing in support of the Environmental Protection Agency’s (EPA) proposed action to apply Clean Water Act section 404(c) protections to the Pebble deposit, located in Bristol Bay, Alaska. BBNA supports much of the content of the Revised Proposed

Determination (RPD) published by EPA Region 10 on May 26, 2022. We do, however recommend that EPA include several improvements and clarifications to the RPD which will provide certainty to the Bristol Bay region, and also request that EPA move as expeditiously as possible to final 404(c) action.

(...)

Bristol Bay Tribes have been engaged through tribal consultation during this RPD. As outlined in the EPA Policy on Consultation and Coordination for Indian Tribes, there will be a final phase to this process and our member tribes look forward to hearing from a senior EPA official on how the tribes input was considered for the final action [Environment Protection Agency, May 4, 2011. EPA POLICY ON CONSULTATION AND COORDINATION WITH INDIAN TRIBES]. BBNA would like to thank the EPA for its efforts in understanding and acknowledging our position through enacting these modifications to the prohibitions in the RPD. These additions provide protections in sustaining clean and healthy waterways, which are essential in maintaining our Way of Life. The importance of finalizing the section 404(c) process cannot be overstated. It is critical for EPA to expeditiously move forward with a Recommended and Final Determination. Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 9)

In general in my opinion, the Proposed Determination (PD) constitutes the most thorough and accurate summary of best available science describing unacceptable adverse effects of the proposed Pebble Mine footprint written to date by any government agency specifically in regard to project permitting. The document aptly summarizes the cultural, ecological, and economic values of the Bristol Bay watershed, the Nushagak and Kvichak drainages, and their headwater streams that would undoubtedly be impaired by mine development. In particular, EPA's recognition and descriptions of the critical importance of headwater streams, biocomplexity, and the portfolio effect supporting Bristol Bay's globally unparalleled sockeye salmon fishery and one of the world's largest Chinook salmon fisheries clearly demonstrate the unacceptable adverse effects mine development would unavoidably cause.

EPA Response

See EPA's response to comment 1.B.1.

EPA has listened to and respects the diverse perspectives of all Alaska Natives in the Bristol Bay area. Section 6 of the FD discusses EPA's consultations with tribal governments. A summary of EPA's tribal consultations can be found at Docket No. EPA-R10-OW-2022-0418, available online at [regulations.gov](https://www.regulations.gov).

1.B.5 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 2)

EPA's proposed prohibition and restrictions are appropriate responses to the threat to Bristol Bay from the proposed Pebble mine. Indeed, it is hard to envision a project more suited for 404(c) action than Pebble. BBNC therefore supports EPA's proposal, and in the attached comments offers recommendations in line with EPA's intent as expressed in the 2022 Proposed Determination and which would add strength to EPA's proposed prohibition and restrictions.

The vast majority of BBNC shareholders and Bristol Bay residents support EPA action and want to see Bristol Bay protected for good from the threat of the proposed Pebble mine. The project has loomed over Bristol Bay for far too long. We thank EPA for restarting the Clean Water Act Section 404(c) process and request that EPA finalize protections before the end of this year.

EPA Response

See EPA's response to comment 1.B.1.

1.B.6 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (BBFA) (Doc. #0830, p. 1)

With respect to future mine plans, the 2022PD is much weaker than EPA Region 10's proposed determination in 2014. It does not do the necessary job of protecting waters around the Pebble deposit or in the greater Bristol Bay watershed. The 2022 PD is so weak that it invites a revised mine plan being submitted under a more sympathetic federal administration, and that is likely to result in a permit for Pebble mine and the harms so many seek to avoid. EPA needs to do a much better job of protecting salmon habitat and commercial, subsistence and sport fisheries. Otherwise, EPA will in effect give us Pebble mine and probably other mines in the Bristol Bay watershed.

EPA Response

EPA's action does not prohibit or restrict all mining of the Pebble deposit, nor does it address other types of discharges. As explained in Appendix A of the PD, the 2020 Mine Plan is based on new assumptions, higher-resolution aquatic resource mapping, additional environmental baseline data (PLP 2018a) and water resource impact information (i.e., analyses included in the FEIS), and more sophisticated modeling than the analysis in the 2014 PD. Given the evolution of the scientific and technical record since 2014, EPA determined that it was appropriate to develop the 2022 PD using the most current information available to EPA, including the 2020 Mine Plan and the FEIS.. See EPA's responses to comments 5.A.1 and 7.0.1.

See also EPA's response to comment 1.B.1.

1.B.7 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (BBFA) (Doc. #0830, p. 24)

CONCLUSION

Although we support the post-application prohibition of the 2020 Mine Plan, we cannot support the pre-application portion of the 2022 PD. The pre-application portion is by far the most important portion of the 2022 PD because that portion applies to future mine plans for the Pebble deposit. However, it is so weak that it will allow this dispute to go on forever. It will result a revised mine plan, which a future federal administration may permit. In that respect, the pre application portion of 2022 PD is likely to

result in a Pebble mine. Therefore, we cannot support the most important part, i.e., the pre-application portion, of the 2022 PD.

We will support a much stronger pre-application portion. The proposed limits in the pre application portion of the 2022 PD are so weak because they are based on the levels of four categories of harms which would have been caused by the 2020 Mine Plan. As we showed at the outset, those limits are far less protective than corresponding limits in the 2014 PD.

EPA provides no express or implied explanation for proposing weaker standards other than that they are the product of the 2020 Mine Plan. In effect, that allows PLP to set the standards. If the harms under the 2020 Mine Plan had been a few points higher, then presumably the standards would be a few points even less protective. Section 404(c) cannot be interpreted to allow a past application to effectively set the standards for a pre-application 404(c) determination applicable to future mine plans. EPA makes that determination, not the past applicant. EPA needs to determine how much harm to the ecosystem is unacceptable independent of any previously denied application.

EPA Response

See EPA's responses to comments 1.B.1, 4.B.27, 7.0.1, and 7.0.2.

1.B.8 Terry Mann (Doc. #2667-50, pp. 113–114)

I don't believe in the Pebble Mine. From the first moment I heard them speak and talk about dumping tailings in the pristine Iliamna Lake, to their talk of a smaller, safer mine. It's all smoke. There is no small, viable mine in the middle of our paradise, so salmon, fish, bears, wildlife, and our way of life.

It's been almost 20 years, and we are keeping up the fight. We have our brightest people fighting, and expending precious time and energy to protect the land, and our way of life. Salmon, clean water, and uninterrupted land is our lifeblood. Please join us, and give us the protections to the land, water, animals, and - people deserve permanent protection.

I've heard this one time, and it stuck with me. I believe it's from some women in India, protecting their land from overdevelopment. I'm not quite sure on the quote, but it makes sense to me. And it is - it is that ecology is permanent economy. Ecology is permanent economy.

EPA Response

See EPA's responses to comments 1.B.1 and 1.B.2.

1.B.9 National Wildlife Federation (Doc. #0129, pp. 1, 2)

On behalf of the Federation, I would like to thank EPA staff for all their work in developing this important Proposed Determination that would protect Bristol Bay from the 2020 Mine Plan. The Federation urges EPA to quickly finalize this Determination with additional restrictions that would also permanently protect Bristol Bay's vital headwaters from any other large-scale mine.

(...)

In short, any hardrock mine guarantees unacceptable destruction—and toxic poisoning—of this pristine ecosystem.

The National Wildlife Federation again urges EPA to quickly issue a Final Determination that protects this incredible ecosystem from the 2020 mine and any other large-scale mine.

EPA Response

See EPA's response to comment 1.B.1.

1.B.10 Washington State Attorney General Office (Doc. #0183, pp. 1, 4)

As Attorney General of a state with close cultural and economic ties to Alaska and an important economic stake in the Alaska salmon fishery, I support EPA Region 10's Proposed Determination to establish reasonable limits on mining at the Pebble deposit in the Bristol Bay watershed.[U.S. Environmental Protection Agency, 2022. Proposed Determination of the U.S. Environmental Protection Agency Region 10 Pursuant to Section 404(C) of the Clean Water Act, Pebble Deposit Area. Region 10, Seattle, WA ("Prop. Determination").] I encourage EPA to take the strongest possible action to protect the extraordinary Bristol Bay ecosystem and its iconic salmon runs for current and future generations. Bristol Bay is a priceless resource that will remain vibrant and productive for generations – but only if we take care of it today.

(...)

Mining in any part of the Bristol Bay watershed, whether at the Pebble deposit or elsewhere, poses a grave threat to Washington's economy and culture. I cannot stand by and witness the destruction of the priceless resource that is Bristol Bay. I have participated in the Pebble Mine environmental review process in the past,[Letter from Attorney General Ferguson, commenting on the Pebble Limited Partnership Draft Environmental Impact Statement (EIS No. 20190018), July 1, 2019.] and will continue to oppose any development threatening Bristol Bay's environment. I urge EPA Region 10 to act to preserve the irreplaceable Bristol Bay watershed, by forwarding to EPA Headquarters a recommended determination consistent with the Proposed Determination.

EPA Response

See EPA's response to comment 1.B.1.

1.B.11 SalmonState (Doc. #0858, pp. 1, 5)

SalmonState submits the following comments in strong support of EPA providing protections for the headwaters of Bristol Bay pursuant to the agency's authority under CWA § 404(c). SalmonState further urges EPA to publish a Final Determination to prohibit and restrict the use of waters within the

headwaters of the Bristol Bay watershed as a disposal site for the discharge of dredge and fill material from porphyry hardrock mining.

(...)

SalmonState is in strong support of the EPA's proposal to prohibit and restrict the discharge of dredge and fill material from mine development of the Pebble deposit into the headwaters of Bristol Bay. Thank you to EPA for recognizing this ecologically unique and important region and exercising its authority to protect the waters, wildlife, and fish of Bristol Bay from toxic pollutants.

EPA Response

See EPA's response to comment 1.B.1.

1.B.12 Mass Mailing Campaign (Doc. #2540, p. 1)

EPA must listen to the calls from the United Tribes of Bristol Bay, Bristol Bay Native Association, Bristol Bay Native Corporation, Bristol Bay Economic Development Corporation, and Commercial Fishermen for Bristol Bay urging EPA to finalize strong and durable protections for Bristol Bay this year. I echo them in urging the EPA to swiftly adopt a final 404(c) determination that permanently protects Bristol Bay's headwaters from not only the mine plan that the Pebble Limited Partnership proposed in 2020, but any future large-scale porphyry mining like it.

(...)

There is no question that the Pebble Mine or any large-scale porphyry mine in the watershed would result in "unacceptable adverse effects" to fishery areas, recreational areas, and wildlife, and therefore must be prohibited and restricted under Section 404(c) of the Clean Water Act. Please act quickly to put permanent, comprehensive protections in place.

EPA Response

See EPA's response to comment 1.B.1.

1.B.13 Mass Mailing Campaign (Doc. #2552, p. 1)

The Clean Water Act 404(c) process must provide true protections to the headwaters, not just limitations based on past mine plans. Please finish the job and protect Bristol Bay.

EPA Response

See EPA's response to comment 1.B.1.

1.B.14 World Wildlife Fund (WWF) (Doc. #1739, pp. 1, 2)

WWF urges the EPA to issue a Final Determination that not only prohibits or restricts past, current, and future plans for the Pebble deposit but also permanently protects Bristol Bay's headwaters from

porphyry mining like that proposed for the Pebble deposit. We support EPA in completing the 404(c) process as quickly as possible.

(...)

WWF's comments echo the voices of the United Tribes of Bristol Bay, Bristol Bay Native Association, Bristol Bay Native Corporation, and Bristol Bay Economic Development Corporation. There is no question that the EPA has the support of the people of Bristol Bay to move quickly and diligently to implement the Proposed Determination.

(...)

WWF fully supports the EPA's Proposed Determination to ensure protection for the watershed and people of Bristol Bay.

EPA Response

See EPA's response to comment 1.B.1.

1.B.15 Loren Ebner (Doc. #0618, p. 1)

I would like to encourage the EPA to permanently protect Bristol Bay under section 404(c) of the Clean Water Act. I adamantly oppose the development of any further mining activities in the Bristol Bay watershed, including, but not limited to pit mines and dredging

EPA Response

See EPA's response to comment 1.B.1.

1.B.16 Frances Nelson (Doc. #2667-21, pp. 57–58)

I've also served my tribe, and upriver villages. In everything I do, I am effective. I know and understand the people that I serve. We are Region 10, and we want permanent protection for this entire region. I hope that you will advocate, and fight for us, for we are the people that you serve.

I hope that you will go back and wholeheartedly represent and speak for us. Be as effective as we are, in protecting and caring for this beautiful place we call home. This is the perfect time, and the perfect place - permanent protection for Bristol Bay.

EPA Response

See EPA's response to comment 1.B.1.

1.B.17 Earthjustice, Earthworks, Friends of the Earth U.S., and the Center for Biological Diversity (Doc. #0835, p. 1)

We support EPA's proposal to prohibit the Pebble Limited Partnership's (PLP) 2020 proposed mine plan ("2020 Mine Plan"). We encourage EPA to strengthen the protections against the risk of a future mine

proposal by broadening and clarifying the proposed restrictions. And we urge EPA to complete the section 404(c) process and finalize comprehensive protections by the end of 2022.

EPA Response

See EPA's response to comment 1.B.1.

1.B.18 Richard Gustafson (Doc. #2664-19, p. 16)

And I encourage you to go ahead and complete this 404(c) finding now, and probably do it a little bit more comprehensive, because we've been fighting Pebble for a long time, and I have little faith in the state of Alaska and their ability to protect the waters.

EPA Response

See EPA's response to comment 1.B.1.

1.B.19 Ekuk Village Council (Doc. #0816, pp. 1, 3)

The Ekuk Village Council writes in support of the Environmental Protection Agency's (EPA) proposed action to apply Clean Water Act section 404(c) protections to the Pebble deposit, located in Bristol Bay, Alaska. While the Ekuk Village Council supports much of the content of the Revised Proposed Determination (RPD) published by EPA Region 10 on May 26, 2022, we write not only to encourage the EPA to move forward in the process to a Recommended Determination (RD), but to also to recommend that EPA include several improvements and clarifications to the RPD which will provide certainty to the Bristol Bay region.

(...)

The Ekuk Village Council again wishes to extend its thanks to EPA for its effort to protect the headwaters of our fishery through the Clean Water Act section 404(c) process. This effort is something the Region and its people have been working toward for over a decade. The importance of finalizing the section 404(c) process cannot be overstated. It is critical for EPA to move forward with a Recommended and Final Determination. The value of the Bristol Bay watershed is world renowned, and it is imperative to protect it for future generations of the Region's residents.

EPA Response

See EPA's response to comment 1.B.1.

1.B.20 Commercial Fishermen for Bristol Bay (CFBB) (Doc. #2064, pp. 1, 3)

As members of Bristol Bay's sustainable fishing industry, we thank the U.S. Environmental Protection Agency (EPA) for issuing the Revised Proposed Determination (RPD) for the Pebble Deposit Area under Section 404(c) of the Clean Water Act. We write to provide comment to this proposal and request the agency move to finalize protections which would prohibit the Pebble Mine and any future mining of the

Pebble deposit. We urge the EPA to promptly complete the CWA § 404(c) process and recommend that EPA include several improvements and clarifications in its Final Determination that would permanently protect Bristol Bay's headwaters from porphyry mining like that proposed for the Pebble deposit. We support the EPA in completing the CWA § 404(c) process as swiftly as possible and call on the agency to finalize comprehensive protections by the end of 2022.

(...)

CFBB again extends our thanks to the EPA for its effort to protect the headwaters of our fishery through the Clean Water Act section 404(c) process. This effort is something the Bristol Bay Region and fishing industry have been working toward for over a decade. The importance of finalizing the CWA § 404(c) process cannot be overstated.

EPA Response

See EPA's response to comment 1.B.1.

1.B.21 Sara Hersh (Doc. #2664-35, p. 26)

I support the EPA's proposed determination, and think it should be stronger. Bristol Bay is full of incredible wildlife, and that's due to being spared from harsh industrialization like open-pit mines. The salmon, Native communities, and ecosystem as a whole depend on continued clean water. Please take Pebble Mine entirely off the table as quick as possible.

EPA Response

See EPA's response to comment 1.B.1.

1.B.22 Kelsey Lamp (Doc. #2664-36, p. 27)

I think it's deeply important that we protect Bristol Bay, and the ocean life, and animals that call it home. I grew up in rural Northern Nevada, and was surrounded by large mines, and saw what it can do to ecosystems on land, and can only imagine the damage that large mining operations would have on the clean waters and important salmon fisheries that call Bristol Bay home, so I urge you to protect Bristol Bay from the Pebble Mine, and quickly finalize the proposed determination, and make it more comprehensive in the process, so that we can have this beautiful place for generations to come.

EPA Response

See EPA's response to comment 1.B.1.

1.B.23 Thomas Pebler (Doc. #0189, p. 1)

Please use all authority within the 404 (c) provision of the Clean Water Act to deny the use of North Fork Kuktuli and South Fork Kuktuli as well as Upper Talalrik wetlands for mine tailings storage and related mining construction. Please use the authority of the EPA to deny large-scale sulfide

mining construction in all pertinent watersheds in the Bristol Bay Region including Nusagak, Kvichak, Mulchatna, Illiamna and all associated tributaries.

EPA Response

See EPA's response to comment 1.B.1.

1.B.24 Jean Naples (Doc. #0282, p. 1)

Dear Environmental Protection Agency, I am writing as an American who strongly supports full protection for Alaska's Bristol Bay, which is part of our country's natural heritage, from any invasive and destructive mining or drilling. At this time, I completely urge you to please use your authority under section 404(c) of the Clean Water Act process to finalize the Proposed Determination and veto Pebble Mine, because approval of this mining project will irreversibly poison the waters of Alaska's Bristol Bay.

(...)

I completely support the Proposed Determination and its vast record clearly support both the proposed restrictions and more stringent safeguards to permanently protect Bristol Bay, and its communities, from the ravages of large-scale mining. I stand with the people of Bristol Bay in strongly urging you to please permanently protect Bristol Bay and its communities by quickly issuing a Final Determination that protects this incredible ecosystem from the 2020 Pebble Mine plan and any other large-scale mine.

EPA Response

See EPA's response to comment 1.B.1.

1.B.25 Carol Belenski (Doc. #0518, p. 1)

I agree 100% with the EPA proposed restrictions that would block plans for the proposed Pebble copper and gold mine in Alaska's Bristol Bay region. No discharges of dredged or fill material should be allowed into waters of Alaska

EPA Response

See EPA's response to comment 1.B.1.

1.B.26 Peter Lauterback (Doc. #1610, p. 1)

[This snippet was translated from German using Google]

I concur with them in urging the EPA to swiftly pass a final 404(c) rule that protects the Bristol Bay headwaters permanently, not just from the mine plan the Pebble Limited Partnership announced in 2020, but also ahead of any future large-scale porphyry mining. Bristol Bay is home to the world's largest wild salmon fishery. It generates \$2.2 billion annually, supports 15,000 American jobs, feeds 57 percent of the world's wild salmon, and sustains Indigenous communities as it has done since time immemorial. The wild salmon that return to Bristol Bay each year provides an Alaskan Native way of

life, providing subsistence food, livelihoods and the lifeblood of the culture. But the Pebble Mine would risk everything. If fully developed, the Pebble mine would generate up to 10 billion tons of toxic mining waste. Even the first 20 years of mining proposed in the Pebble Limited Partnership's 2020 plan would destroy about 100 miles of streams and 2,100 hectares of wetlands and completely decimate areas vital to Bristol Bay's salmon fishery. But the Pebble Limited Partnership has bigger plans. Undercover videotapes by top executives of the partnership and its parent company, Northern Dynasty Minerals, have confirmed Pebble's true plan: to exponentially expand mining operations in the region for the next 180 to 200 years. Adding to these threats is that our mining laws have remained unchanged for 150 years and currently lack strong environmental and community protections. There is no question that the Pebble mine or a large porphyry mine in the watershed would cause "unacceptable adverse effects" on fisheries, recreational areas and wildlife and therefore should be prohibited and restricted under Section 404(c) of the Clean Water Act. Please act quickly to implement permanent, comprehensive protective measures.

EPA Response

See EPA's response to comment 1.B.1.

1.B.27 Maine Rivers (Doc. #1537, p. 1)

We are writing to voice our strongest support for the highest level of protections for Bristol Bay, its tremendously valuable wild sockeye populations and the critical headwaters of the system. Many of us in Maine are working to rebuild the once prolific Atlantic salmon runs of our state. Our efforts in Maine include nearly every form of action, from community-based collaboration, to scientific research, to lawsuits. It's extraordinarily difficult and expensive to rebuild salmon runs, and success is not guaranteed. We know from our experiences that healthy headwaters are profoundly important to marine populations. We write therefore to support of permanent prohibitions and restrictions for industrial mining in the waters of Bristol Bay. Wild salmon is a precious resource, valuable to ours and all future generations. Nothing should be done to threaten the wild salmon populations of Bristol Bay.

EPA Response

See EPA's response to comment 1.B.1.

1.B.28 Californians for Western Wilderness (Doc. #1903, p. 1)

Protecting the area from development might also contribute to eventually reaching the Administration's 30x30 goal of protecting 30% of America's land and waters by 2030.

So again, we urge you to protect the watershed of Bristol Bay by vetoing the proposed Pebble Mine and not allowing any type of mining in the watershed.

EPA Response

See EPA's response to comment 1.B.1.

1.B.29 United Tribes of Bristol Bay (UTBB) (Doc. #0823, pp. 1, 8)

On behalf of its member Tribal governments, the United Tribes of Bristol Bay (UTBB) submits these comments on the U.S. Environmental Protection Agency's (EPA) Proposed Determination for the Pebble Deposit Area, Docket ID No. EPA-R10-OW-2022-0418 (hereinafter "RPD"). UTBB fully supports the EPA's action to use section 404(c) of the Clean Water Act to prohibit and restrict the use of dredge and fill material associated with mining the Pebble deposit. UTBB firmly believes this action is necessary to protect the Bristol Bay wild salmon fisheries and the subsistence way of life tied so closely to those fisheries. UTBB strongly encourages EPA not only to move the RPD forward in the process to a Recommended Determination (RD), but to also include several improvements and clarifications to the RPD which will provide certainty to the Bristol Bay region.

(...)

UTBB again wishes to extend its thanks to EPA for its effort to protect the headwaters of our fishery through the Clean Water Act section 404(c) process. This effort is something the Region and its people have been working toward for over a decade. The importance of finalizing the section 404(c) process cannot be overstated. It is critical for EPA to move forward with a Recommended and Final Determination. The value of the Bristol Bay watershed is world renowned, and it is imperative to protect it for future generations of the Region's residents.

EPA Response

See EPA's response to comment 1.B.1.

1.B.30 Pueblo of San Felipe (Doc. #0127, p. 1)

The Pueblo of San Felipe asks the EPA to protect Bristol Bay's headwaters from all mining at the headwaters of Bristol Bay, not just the small section of the Pebble deposit as identified in the Revised Proposed Determination. Bristol Bay's future generations should not have to live with the threat of mining that would devastate their cultures, communities, and a sustainable economy.

EPA Response

See EPA's response to comment 1.B.1.

1.B.31 Jerry Ince (Doc. #0410, p. 1)

Do not allow any such polluting schemes such as pebble mine. Frankly most any development in this last pristine, God-given environment should be outlawed permanentl[y].

EPA Response

See EPA's response to comment 1.B.1.

1.B.32 Bob Paine (Doc. #0413, p. 1)

Please restrict all mining in the Bristol Bay. We only have 1 chance to keep things original and pristine.

EPA Response

See EPA's response to comment 1.B.1.

1.B.33 Casey Gilles (Doc. #0453, p. 1)

Please follow the research/science and provide permanent protection for the Bristol Bay Watershed Region. Too much is at stake for our environment to waver on this issue. Protection now!

EPA Response

See EPA's response to comment 1.B.1.

1.B.34 Keith Hallman (Doc. #0462, p. 1)

I hereby register my strong approval of any and all attempts to prevent mining in the watershed of Bristol Bay, Alaska.

EPA Response

See EPA's response to comment 1.B.1.

1.B.35 Anonymous (Doc. #0481, p. 1)

I would like to see Pebble Bay protected for all time. Do not allow any mining in this area. We must protect the Wildlife

EPA Response

See EPA's response to comment 1.B.1.

1.B.36 Druscilla Keenan (Doc. #0527, p. 1)

I am writing to you to urge the U.S. Environmental Protection Agency (Agency) to act quickly to secure the protection of Bristol Bay in perpetuity from the Pebble Mine project and any other such projects.

EPA Response

See EPA's response to comment 1.B.1.

1.B.37 Dawn Waters (Doc. #0537, p. 1)

Please protect the Bristol Bay Area and all of the wildlife that depend on this natural area!\

EPA Response

See EPA's response to comment 1.B.1.

1.B.38 John Dolan (Doc. #0570, p. 1)

I support permanent protection of the Bristol Bay region. Please stop current and future development of the Pebble Mine.

EPA Response

See EPA's response to comment 1.B.1.

1.B.39 Brenda Dolan (Doc. #0581, p. 1)

Please do not allow mining in Bristol Bay.

EPA Response

See EPA's response to comment 1.B.1.

1.B.40 Maria Welch (Doc. #0590, p. 1)

I support strong permanent protection for the Bristol Bay Area from mining, and permanent protection for the brown bears.

EPA Response

See EPA's response to comment 1.B.1. See also EPA's response to comment 6.A.2. and Section 6 of the FD for EPA's discussion on wildlife.

1.B.41 Mary Sincavage (Doc. #0594, p. 1)

Please protect Bristol Bay from mining interests. The purity of this pristine area needs to be protected for all who come after us. We need to preserve nature!

EPA Response

See EPA's response to comment 1.B.1.

1.B.42 New Stuyahok Tribal Council (Doc. #2667-2, p. 17)

And I am here to testify on what I really love, and hope to continue the way of life with my kids and my grandkids. I would urge the EPA to read through the Pebble Mine, and make the protection stronger, and permanent, and not to base them on Pebble Mine's Plan for 2020.

EPA Response

See EPA's response to comment 1.B.1.

1.B.43 New Stuyahok Tribal Council (Doc. #2667-2, p. 18)

The Elders that have passed on, or the ones that can't make it here now would say don't let Pebble Mine, or any mine go through. We, we know who we are. We know where we come from. And we know what we are fighting for. Stop all mines in Bristol Bay.

EPA Response

See EPA's response to comment 1.B.1.

1.B.44 James Rauch (Doc. #0325, p. 1)

I hope the EPA will finally put a stop to any mining to take place at all.

(...)

End Pebble Mine now once and for all!

EPA Response

See EPA's response to comment 1.B.1.

1.B.45 Nina Minsky (Doc. #0344, p. 1)

Please help protect the bears and other wonderful creatures that live in the forest by preventing mining.

EPA Response

See EPA's response to comment 1.B.1.

1.B.46 Evelyn Alvarez (Doc. #0357, p. 1)

I support the permanent protection of the Bristol Bay region.

EPA Response

See EPA's response to comment 1.B.1.

1.B.47 Bee Maston (Doc. #2194, p. 1)

Such a pristine environment as the Alaska Peninsula cannot be fragmented, degraded or polluted by industry in any form or fashion in the name of progress. It is not progress to destroy species and habitat at any price. These resources cannot be replaced when they have been decimated by industry.

EPA Response

See EPA's response to comment 1.B.1.

1.B.48 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, pp. 2, 3)

In our initial comments of June 10, 2022, we made clear our conclusion that the 2022 PD is so weak that it is likely to result in a Pebble mine. Compared to EPA's 2014 Proposed

(...)

Determination (2014 PD), the 2022 PD greatly increases, by as much as five fold, each of the four types of limits on potentially allowable adverse effects which EPA would use to restrict discharges associated with future mine plans. Those increased limits allow PLP - or whoever in the future owns or controls mineral interests at the Pebble deposit [I use the phrase "or whoever in the future owns or controls mineral interests at the Pebble deposit" because these comments will discuss, in Part II below, how the combination of the increased limits in the 2022 PD and certain ideas for legislation could complicate EPA's use of § 404(c) regarding a revised mine plan.] - to revise the 2020 Mine Plan to be within the increased limits, and apply for and obtain a § 404 discharge permit under a future federal administration favorable to a Pebble mine. Therefore, our initial comments show:

PLP - or whoever in the future owns or controls mineral interests at the Pebble deposit could revise the 2020 Mine Plan to escape the limits by moving the bulk tailings storage facility (TSF) either (a) outside the defined area of the proposed restriction, such as PLP's TSF site Nos. 4, 25, and 26, or (b) to TSF sites, such as TSF2 and TSF 3, within the defined area, south of the footprint of the 2020 Mine Plan, and which may have less impacts than the proposed increased limits of the 2022 PD.

The limits should be much lower than those of the 2014 PD, because the 2022 PD shows that the science has progressed substantially, particularly in recent years and continues to do so, regarding the importance of how fine-scale habitat diversity, fine-scale genetic diversity, and fine-scale immunological diversity produce fine-scale population structures that create the "portfolio effect" which stabilizes salmon returns and keeps the commercial and recreational fishing industries, subsistence, and the ecology afloat.

EPA Response

See EPA's responses to comments 1.B.1, 4.B.49, 5.C.1, and 7.0.1.

1.B.49 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, pp. 23–24)

III. PROMPT AGENCY AND LEGISLATIVE ACTIONS ARE NECESSARY TO KEEP THIS SITUATION FROM BEING COUNTERPRODUCTIVE.

A. EPA should issue a revised 2022 PD that rewrites Chapters 4 and 5 to be much stronger, and engage in a renewed public process that corrects EPA's errors and omissions and their consequences, and allows the public to comment more usefully.

EPA needs to get out in front of this situation because it is about more than errors, omissions, and consequences. For EPA's purposes, it is about at least the bases for the prohibitions and restrictions in a § 404(c) determination. In that respect, it helps to revisit the Ninth Circuit's explanation in *Trout Unlimited v. Pirzadeh* that -

Whether "unacceptable" adverse effects are "likely" is a flexible standard that draws considerably on the agency's expertise and judgment. Cf. 44 Fed. Reg. at 58078 ("[W]hat is required is a reasonable likelihood that unacceptable adverse effects will occur-not absolute certainty but more than mere guesswork.").

1 F.4th at 759 (emphasis added).

EPA Response

See EPA's responses to comments 2.D.6 and 5.C.1.

1.B.50 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0807, p. 6)

CONCLUSION

Our prior letters of June 10, June 23, August 5, and this letter, reflect our criticisms that the 2022 PD is (1) too weak because its standards allow as much a five times the amount of harm that would have been allowed under the 2014 PD, (2) too narrow because it is limited to the Pebble deposit, (3) too vulnerable to several potential legal claims, (4) likely to be difficult to implement because it relies wholly on numerical standards that will give rise to disputes as to whether or not a proposal meets those standards, and (5) not creative enough because it ignores potential prohibitions based on non-numerical facts. EVC and BBFA have proposed many potential non-numerical standards for EPA to consider. The toughest to draft seems to be one that uses the precautionary approach. So, we have attempted to draft such a proposed standard.

EPA Response

See EPA's responses to comments 1.B.1, 4.J.14, 5.A.1, 5.C.1, and 7.0.1.

1.B.51 United Tribes of Bristol Bay (Doc. #0615, pp. 1, 2)

On behalf of Chinik Eskimo Community, I write to call upon the Environmental Protection Agency (EPA) to fulfill its responsibility to complete its Clean Water Act Section 404(c) process and reach a Final Determination for Bristol Bay by the end of 2022. Chinik Eskimo Community supports the Tribes of Bristol Bay in their efforts to permanently protect this national treasure from the threat of large-scale

mines like Pebble. The EPA cannot allow toxic mining waste to be stored at the headwaters of the Bristol Bay region.

(...)

Bristol Bay Tribes first petitioned the EPA to prohibit mines like Pebble in the region more than a decade ago, and in the years since, the science, history, and facts show how detrimental this project would be to the Bristol Bay region. As Chinik Eskimo Community, we support Bristol Bay Tribes in their efforts to protect their lands and waters that have sustained their indigenous way of life, their livelihoods, and their communities since time immemorial.

(...)

The threat of toxic large-scale hard rock mining, like the Pebble deposit, will continue to loom over Bristol Bay until permanent protections are secured for the region. Years of scientific study and a robust administrative record all support the EPA finalizing strong protections by the end of 2022. Chinik Eskimo Community asks the EPA to protect Bristol Bay's headwaters from all mining at the headwaters of Bristol Bay, not just the small section of the Pebble deposit as identified in the Revised Proposed Determination. Bristol Bay's future generations should not have to live with the threat of mining that would devastate their cultures, communities, and sustainable economy. Please finish the job and ensure that Bristol Bay's pristine lands and waters are truly protected in perpetuity. Businesses for Bristol Bay et al. (Doc. #0827, p. 1)

As businesses that are concerned for and invested in the future productivity of the Bristol Bay watershed, we are writing with regards to the Environmental Protection Agency's Section 404(c) Proposed Determination for Bristol Bay. The undersigned businesses, trade groups, and organizations have a common interest in seeing Bristol Bay protected, which is shared across many sectors of the economy including the fishing, recreation, tourism, and food service industries.

Home to the world's largest and most valuable wild salmon fishery, Bristol Bay has been at risk due to the proposed Pebble Mine for the last two decades. That threat has created uncertainty for the businesses and industries that depend on the productivity and health of Bristol Bay's wild salmon. At a time of great instability in our supply chains, our industries cannot continue to carry that burden, and therefore request that the EPA move swiftly to finalize Clean Water Act 404(c) protections that are durable and ensure the long-term sustainability of Bristol Bay's wild salmon runs.

(...)

The Clean Water Act 404(c) process must provide true protections to the headwaters, not just limitations based on past mining plans. We support EPA in completing the 404(c) process as swiftly as possible and call on the agency to finalize comprehensive protections by the end of 2022. The indisputable facts, clear science, and extensive administrative record overwhelmingly support a final 404(c) determination that protects Bristol Bay from not only the mine plan proposed by PLP in 2020, but any future large-scale mining like the Pebble Mine.

We thank the EPA for recognizing that Bristol Bay is an exceptional place that deserves exceptional protection, and for restoring science and public trust in the 404(c) process. Our companies and organizations support final 404(c) Clean Water Act protections that advance the long-term economic health of our country, defend thousands of renewable American jobs, and ensure that the people of Bristol Bay can live without the Pebble Mine overshadowing their future.

EPA Response

See EPA's responses to comments 1.B.1 and 1.C.11.

1.B.52 Bristol Bay Native Corporation (Doc. #2667-12, pp. 37–38)

As you proceed with the 404C process, you need to hire the best lawyers and scientists the US has to offer. You need to control the massive disposal discharge sites that's gonna happen. I know 404C is not going to protect our people in Bristol Bay. There's some asshole politician that's gonna try to break the 404C process. What we need is your, EPA's response, on the 404C process. We'll go get the legislation in DC. Those two combined will seal Bristol Bay from mining. That's what needs to happen - because in a White man's world, the only thing that matter is a George Washington. This is our culture. This is who we are. And we're never going to give it up. Nobody is going to build a mine up there - nobody. I'll be there, like I said - when Pebble first came into town - I'll be up there with my shotgun, along with everybody in Bristol Bay, along with over a million people who commented to you.

I want to thank the people that helped us in Bristol Bay. I've been around for quite a while, and I know that they were going to roll right over the top of us, because they had such powerful money, and powerful financial backing. But America stepped up, and helped my people. We are gonna win, folks. Thank you.

EPA Response

See EPA's response to comment 1.B.1.

1.B.53 Trustees for Alaska et al. (Doc. #0831, pp. 1–2)

Comments regarding whether the EPA Region 10 Administrator should withdraw the proposed determination or prepare a recommended determination for review by the Assistant Administrator for the Office of Water.

The EPA Region 10 Administrator should prepare a recommended determination for review by the Assistant Administrator for the Office of Water and, ultimately, EPA should exercise its authority under Section 404(c) of the Clean Water Act (CWA) to protect Bristol Bay from the threat of large-scale mining. If developed, the proposed Pebble Mine would industrialize the headwaters of the world's largest remaining sockeye salmon fishery. The watershed supports more than 190 species of birds, 40 species of animals, 29 species of fish, and a thriving subsistence culture. If approved, the proposed Pebble Mine would be one of the most damaging, if not the most damaging, project ever permitted under the CWA. [Matthew Schweisberg, Compliance with Section 230.10(c) of the 404(b)(1) Guidelines at 1 (June 11,

2019) (Ex. 44).] For years, scientists have evaluated the potential impacts of developing a mine in the headwaters of Bristol Bay, and repeatedly reached the same conclusion: large-scale mining would irreparably impact the area’s wetlands, waters, and the fish that depend on them. This extensive scientific work demonstrates the need to put an end to the threat to Bristol Bay. Bristol Bay is one of the most productive marine ecosystems in the world; its headwaters are simply not the place for large-scale industrial mining.

EPA Response

See EPA’s responses to comments 1.B.1 and 1.B.2.

1.B.54 Earthjustice, Earthworks, Friends of the Earth U.S., and the Center for Biological Diversity (Doc. #0835, pp. 1–3)

EPA should promptly finalize the 404(c) process

As EPA scientists and others have documented over the past decade, it is critically important to protect the unbroken network of pristine rivers and streams that support Bristol Bay’s remarkably productive wild salmon fishery. Bristol Bay boasts more than 190 species of birds, 40 species of animals, 29 species of fish, and a subsistence culture that has thrived for thousands of years. The watershed is home to one of the last great intact wild salmon fisheries on earth and is a “globally significant resource.” [Revised PD at ES-1.] It supplies over 50 percent of the world’s sockeye salmon, generating \$2 billion a year and 15,000 jobs. [McKinley Research Group, The Economic Benefit of Bristol Bay Salmon at ES-2 & 16, Tbl. 9 (Feb. 2021). We do not attach sources we are aware others have already submitted to this docket.] Incredibly, despite warming waters that threaten salmon everywhere, Bristol Bay’s 2022 sockeye salmon run yet again shattered previous records, with over 78 million fish returning. [Bernton, H., Alaska’s biggest salmon run is booming despite warming water, and scientists are trying to understand why, ADN (Aug. 28, 2022), <https://www.adn.com/alaska-news/2022/08/28/the-salmon-mystery-of-bristol-bay/>.] Bristol Bay’s Chinook salmon run is also often the world’s largest. [Revised PD at ES-1.] This peerless fishery owes its resilience and fecundity to a vast network of pristine headwaters flowing unbroken to the sea across an undeveloped, water-rich landscape.

The Pebble Mine, if developed, would damage that network, jeopardizing the Bristol Bay watershed’s resilience and abundance. As proposed in 2020, the mine would entail an open pit over a mile-long, a mile-wide and 200 meters deep, destroying approximately 100 miles of streams and 2,100 acres of wetlands. And that only includes waters directly displaced by mine facilities, not the thousands more acres that would be fragmented, dewatered, and covered with dust from the mine. The Pebble Mine would produce more than 10 billion tons of mining waste that would need to be stored—in perpetuity—in the highly porous, seismically active headwaters of Bristol Bay. If permitted, it would be one of the largest projects, and likely the most damaging project, ever permitted under the CWA. [Schweisberg, M., Pebble Mine Final Environmental Impact Statement (FEIS): Anticipated Adverse Impacts to Wetlands at 2 (Aug. 22, 2020).]

Although the U.S. Army Corps of Engineers (Corps) denied PLP's CWA section 404 permit application in November 2021, the Bristol Bay region remains vulnerable to large-scale mining. PLP has appealed the Corps' denial, and even if the appeal is unsuccessful, PLP or another operation could submit a new permit application at any time.

We commend EPA for exercising its authority under section 404(c) of the CWA to address unacceptable adverse effects on anadromous fishery areas in the Bristol Bay watershed that would result from discharges of dredged or fill material associated with such mining. EPA should finalize its determination to do so without delay. EPA correctly observes that if it acts now, EPA, the Corps, and the regulated community "can avoid unnecessary expenditure of resources." [Revised PD at ES-17.] In addition, acting promptly will limit costs and burdens for the tribes, tribal organizations, nongovernmental organizations, and members of the public who are participating in this process after over a decade representing their interests against the threat of the Pebble Mine.

As EPA notes, the proposed mine and its potential effects on aquatic resources have been the subject of study for nearly two decades. [Id. at ES-1.] Following a multi-year rigorous, peer-reviewed scientific study of how important the watershed is and why, the agency found that even the smallest Pebble Mine would irreversibly damage the Bristol Bay ecosystem. [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) (2014 PD).] Yet it is only after years of litigation by PLP that EPA has been able to proceed with the section 404(c) process. More than two years ago, President Biden recognized the threat of the Pebble Mine and pledged to protect Bristol Bay:

Bristol Bay has been foundational to the way of life of Alaska Natives for countless generations, provides incredible joy for recreational anglers from across the country, and is an economic powerhouse that supplies half of the world's wild sockeye salmon. It is no place for a mine. The Obama- Biden Administration reached that conclusion when we ran a rigorous, science-based process in 2014, and it is still true today. As President, I will do what President Trump has failed to do: listen to the scientists and experts to protect Bristol Bay—and all it offers to Alaska, our country, and the world. [Biden, J., Presidential Candidate, My Statement on Bristol Bay, MEDIUM (Aug. 8, 2020), <https://medium.com/@JoeBiden/statement-by-vice-president-joe-biden-on-bristol-bay-1a83d60a2986> (last visited Sept. 2, 2022).]

Therefore, in addition to the following comments and recommendations, we ask EPA to fulfill President Biden's promise swiftly. We support calls by the United Tribes of Bristol Bay, Bristol Bay Native Association, Bristol Bay Native Corporation, Bristol Bay Economic Development Corporation, and Commercial Fishermen for Bristol Bay to finalize strong and durable protections for Bristol Bay in 2022.

EPA Response

EPA agrees with the commenter that the administrative record clearly demonstrates that the proposed mine would have unacceptable adverse effects on anadromous fishery areas. See EPA's response to comment 1.B.1.

1.B.55 Natural Resources Defense Council (NRDC) (Doc. #0839, pp. 4–5)

Comments regarding any corrective action that could be taken to reduce adverse impacts on aquatic resources from discharges of dredged or fill material associated with mining the Pebble deposit.

Any large-scale porphyry ore mine in the headwaters of Bristol Bay will result in unacceptable adverse effects and significant degradation to the aquatic ecosystem given the location, ore deposit, and scale. No amount of corrective action can change these basic facts.

Further, any corrective action proposed by the Pebble Limited Partnership’s (“PLP”) must be viewed with skepticism, as PLP and its parent company Northern Dynasty Minerals (collectively “Pebble”) have an undeniable history of duplicity around their true intentions for the Pebble Mine. Undercover videotapes secretly recorded by the nonprofit Environmental Investigation Agency (“EIA”) [Environmental Investigation Agency, Pebble Tapes, <https://eia-global.org/reports/20200921-the-pebble-tapes>.] and released in September 2020 documented the underlying deceit of Pebble’s application for a 20-year mine permit when, in fact, as the tapes confirmed through the words of PLP CEO Tom Collier and Northern Dynasty CEO Ronald Thiessen, Pebble’s intention has always been for a mine plan of 180 to 200 years. Under the company’s actual plan, the environmental consequences of that 200-year mine plan would never be meaningfully examined, thereby undermining both the National Environmental Policy Act (“NEPA”) and Clean Water Act. Pebble’s ultimate purpose was to secure a permit for a project of just ten percent of the ore body that, as proposed, was not economically feasible.

The fundamental issue for Pebble is economic viability and, more specifically, the lack of it for a project at the scale of the 2020 Mine Plan. The substantial likelihood that expenses will significantly exceed revenue was confirmed by former Head of Environment for Rio Tinto’s Copper, Copper & Diamonds and Copper & Coal Product Groups Richard Borden, whose analysis was informed by his participation in more than twenty financial and technical assessments of new major capital projects and potential acquisitions, as well as environmental and permitting work at over fifty mines, projects, and operations. Borden described the Pebble project as “an extremely large and risky capital investment,” finding the mine plan as proposed in the EIS “will make roughly 15 billion dollars less profit from the sale of concentrate than the smallest 2011 mine scenario [Wardrop Engineering Inc., a Tetra Tech Company (“Wardrop”), Preliminary Assessment of the Pebble Project, Southwest Alaska (Feb. 17, 2011), report to Northern Dynasty Minerals Ltd. (reviewing engineering and technical studies undertaken by PLP and Northern Dynasty and describing the potential economic value of three mine development cases comprising 25, 45 and 78 years of open pit mining). Deviating from clear industry standards and practice, Pebble had not published any preliminary or economic feasibility studies before or during the permitting process.] and is likely to have a strongly negative net present value (NPV)” of \$3 billion. [Letter from Richard K. Borden to Shane McCoy, United States Army Corps of Engineers—Alaska District (Mar. 28, 2019), <https://www.nrdc.org/sites/default/files/mccoy-pebble-mine-economics-letter-20190328.pdf>.] (emphasis added).]

Borden explained that disregard of economic feasibility is not just an academic concern but has important practical implications for potential developers of the project, leading necessarily to expansion of the project, its impacts, and its risk:

[In] order to create a profitable operation they would either need to 1) immediately begin a new EIS for a larger economically viable mine plan or 2) knowingly permit, fund and build an uneconomic mine in the hopes that a later EIS and permitting process would allow a larger, economically viable operation. [Id. at 5.]

Given Pebble's history of misrepresentation, any corrective action proposed by PLP or Northern Dynasty must be viewed not only with skepticism but also in the context of an actual long-term plan to construct a 180 to 200-year mine that would extract more than 10 billion tons of ore—not the fictitious, economically infeasible 20-year mine plan proposed during the U.S. Army Corps of Engineers' ("Army Corps") Pebble Mine permitting process.

EPA Response

Section 2.2.2 of the FD describes the information that Pebble Limited Partnership (PLP) provided in response to EPA's December 2, 2022 letter initiating consultation regarding corrective action pursuant to 40 CFR 231.6.

EPA is aware of conflicting information in the record regarding whether the 2020 Mine Plan would be economically viable. Economic-related issues are discussed in the document entitled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b) (referenced in Section 4.4 of the FD).

As explained in Section 4 of the FD, EPA's determination that construction and operation of the 2020 Mine Plan will have unacceptable adverse effects on fishery areas is based on the discharges of dredged and fill material proposed in PLP's permit application and the predicted impacts of those discharges. EPA took the information in the administrative record about the proposed project and predicted impacts at face value.

See EPA's response to comment 2.A.2 for how potential mine expansion is addressed in the FD. EPA disagrees with the commenter that if the 2020 Mine Plan were not economically viable, then it would lead "necessarily to expansion of the project, its impacts, and its risk." Neither the 2020 Mine Plan nor its expansion are foregone conclusions. PLP's permit application for the 2020 Mine Plan was denied by USACE in November 2020, and EPA's FD prohibits the specification of waters of the United States within the Defined Area for Prohibition as disposal sites for the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan.

1.B.56 Loren Karro (Doc. #0847, p. 3)

Not covered in this Proposed Determination is the subject of reuse and recycling of minerals such as copper. Before defining any national needs for minerals, especially when considering the ‘valuable minerals’ needed for new technology and renewable resource technology, the Government should invest serious time and money into studying, forming a plan for and implementing recycling of these minerals. A cyclical system of use should be initiated and have priority over and be factored into any needs for development of proposed new mining sources.

The Bristol Bay region is situated in Southwest Alaska, and holds a vast and unique landscape of ecological, cultural, and economic importance to local residents, state of Alaska, and the United States. This area is a highly prized location to visit by both United States and international visitors for its breathtaking landscapes, pristine fresh and marine waters, wildlife viewing, and world-class fishing.[CC1] It serves as the foundation of one of the last remaining salmon-based indigenous cultures and is the source of tens of thousands of renewable resource-based jobs. Alaska Natives and new residents alike rely upon the natural resources of Bristol Bay for their work, recreation, and subsistence. This Wisconsin sized watershed contains myriad rivers, lakes and streams that serve as the spawning grounds for the world’s largest commercial sockeye salmon fishery as well as an internationally renowned sport fishing resource. The fresh and ocean waters of this region have long been an integral part of Alaska’s economy and have provided sustainable jobs, subsistence foods and other benefits to Alaskans for generations. Adjacent wild lands are habitat for caribou, moose, waterfowl and other important subsistence species as well as one of the world’s greatest concentrations of brown bears.

In addition to ecological functions of the region, Bristol Bay supports local and state economies through commercial fishing, sport fishing, hunting, and recreation. Commercial fishing of the world-renowned salmon runs of Bristol Bay provides jobs and financial security to many local, state, and out of state residents. The Bristol Bay sockeye salmon fishery is one of the last sustainable sources of wild salmon and the largest run of sockeye salmon in the world. [BBWA, at 9.] “Approximately half of Bristol Bay’s sockeye salmon production is from the Nushagak and Kvichak River watersheds,” [BBWA, at 7.] directly downstream from the applicant’s proposed project site. The Alaska seafood industry employs more individuals than any other private sector in Alaska. [Economic Value of Alaska’s Seafood Industry, McDowell Group, September 2017, 4. <http://www.alaskaseafood.org/wp-content/uploads/2015/10/AK-Seafood-Impacts-September-2017.pdf>] Bristol Bay accounts for “44 percent of the world’s sockeye harvest over the past 25 years.” [McDowell, Sept. 2017, 18.] A 2013 study by the University of Alaska’s Institute for Social and Economic Research estimated the current combined annual value of the Bristol Bay fishery is roughly \$1.5 billion and supports over 14,000 jobs including commercial fishermen, processors, lodge owners, guides, tourism operators and more. Of this total, recreation and tourism spending in Bristol Bay brings \$90 million annually to the state in the form of taxes and licenses through the 37,000 fishing trips taken to the region each year and supports 846 full and part-time jobs, accounting for \$27 million in total wages and benefits paid to employees and proprietors. For sport and freshwater fishing, “the Bristol Bay region is especially renowned for the size and abundance of its rainbow trout.” [BBWA, at 7.]

Today, the Bristol Bay region of Southwest Alaska is home to approximately 8,500 people living in 31 year-round communities. Roughly 85 percent of the region's residents are Alaska Native and are mostly Central Yup'ik Eskimos and Dena'ina Athabascan Indians, with Alutiiq-speaking people (known as Aleut or Suspialq) along the coast of Bristol Bay, and represent some of the last intact, sustainable, salmon-based cultures in the world." [BBWA, at 8.] There is a strong emphasis on maintaining Alaska Native culture and values and instilling them in the next generation through dance, sport, art, language and traditional practices. Throughout Bristol Bay, subsistence hunting, fishing and gathering continues to be an important part of daily life and serves as a critical link to the past for peoples who first arrived not long after the retreat of the glaciers of the last ice age 10,000 years ago. [BBWA, at 9.] More than 150 species of wild plants and animals are gathered over the course of the year, contributing significantly to diet and nutrition and cultural activities. "Salmon are integral to these cultures' entire way of life via the provision of subsistence food and subsistence- based livelihoods, and are important foundation for their language, spirituality, and social structure." [[BBWA, at 9.] These unacceptable impacts to the Bristol Bay watershed were acknowledged by EPA in both the 2014 and 2022 Proposed Determinations. [2014 Proposed Determination ("2014 PD"), at 5-1.] Therefore, EPA should move forward with the preparation of a Recommended Determination for review by the Assistant Administrator for the Office of Water that prohibits and restricts the disposal of dredge or fill material in the headwaters of Bristol Bay.

EPA Response

See EPA's response to comment 1.B.1.

1.B.57 Loren Karro (Doc. #0847, pp. 3-4)

I spend many months a year in a tiny, predominantly Aleut village on the Alaska Peninsula and I was speaking with a friend about the proposed Pebble Mine. She had grown up in the village and lived there for most of her life. She told me that it was a difficult subject: it would provide good jobs for local people, but the real issue was that it would cause irreparable harm to the Bristol Bay fisheries, a major source of both income and subsistence harvest for this village and most other villages in Southwest Alaska. She brought up the fact that the Pebble people had claimed that the proposed earthen mine was not a risky endeavor as there were few earthquakes, and recently the area was hit with a pretty good quake!

A few days later I was in Iliamna, another small southwest village where the Pebble Partnership mining conglomerate is locally headquartered, and I thought of the local people who would soon be out of jobs as I watched their trucks running back and forth through the village. But I also thought of the beautiful wilderness around me, the mountains, the grasslands, the tundra, the huge passage of migrating birds, the local swans and cranes and ducks and geese, the king and silver salmon and the arctic char and other fish we so love to catch and eat, the huge brown bear who rely on the spawning salmon, the caribou and lynx and wolverine and wolves who rely on the pristine environment for their food supplies, the seals and whales and sea otters that feed just yards offshore in the Bay. I thought of the potential damage to this wonderful land of blue waters and green tundra and yellow grasses and snow covered peaks, and there was just no balance in the judgement. The mining jobs would be for a limited few for a limited

time; the wildlife and environment could be damaged forever, and cause long term fishing, hunting and recreational job loss, as well as revenue and food supply loss to the local peoples.

EPA Response

See EPA's responses to comments 1.B.1 and 1.B.2.

1.B.58 Les Gara (Doc. #0132, pp. 3–4)

Other questions remain beyond the breach of a dam and the removal of water from these streams.

How many earthquakes can be expected in the future, and or what magnitude?

How much pyrite dust will blow into flowing waters in this often windy region from the mine? That is not assessed.

Also, how safe is transporting ore across a windy, pristine Lake Iliamna? That is not assessed.

EPA Response

EPA considered all information in the administrative record about potential effects of the 2020 Mine Plan, including effects along the proposed transportation corridor, but the determination of unacceptable adverse effects is based on the predicted aquatic resource impacts at the mine site. See Section 2 of the FD for a description of the scope of the 2020 Mine Plan, and see Section 6 of the FD for a discussion of spills and failures.

The FEIS did consider local seismic conditions and did assess the impacts of fugitive dust to aquatic resources. PLP's 2017 permit application proposed an access route that included a ferry across Lake Iliamna. This alternative was assessed in the FEIS, and USACE determined that the ferry option was not the least environmentally damaging practicable alternative to access the mine site. PLP's 2020 permit application was amended to reflect a road and pipeline access corridor along the eastern and northern sides of lake Iliamna.

1.B.59 Les Gara (Doc. #2664-20, pp. 17–18)

This mine is a danger to Lake Iliamna, it's a danger to the Kvichak River that flows out of Lake Iliamna. It's a danger to the first village that will be hit by a toxic spill, which is the village of Igiugig, where I have friends who have battled this mine for over a decade. It's a danger to the Torok Creek drainage, to the Koktuli, to the Mulchatna, to Nushagak Bay, to the largest remaining wild sockeye runs in the world, to the largest king runs remaining in the state of Alaska. And this is a state that is losing salmon run after salmon run to outside interests already. These are some of the last remaining amazing fish runs that we have, not only in the world, but in this state. It's a danger even to some of the world's greatest rainbow trout populations in the world.

(...)

This is a pyrite mine, it's a sulfur mine, it's a potential sulfuric acid mine. It's a threat to a way of life in Bristol Bay, it's a threat to those of us who don't live in Bristol Bay, but appreciate this region. And I travel to this region, but I don't have a stake in this region, like the people who live there.

EPA Response

See EPA's response to comment 1.B.1. See also Section 6 of the FD for EPA's discussion of spills and failures.

1.B.60 Midgard Environmental Services LLC (Doc. #0616, p. 2)

Unless a much smaller mine is proposed, there is very little that could be done to substantially reduce the impacts on aquatic resources if the ore body is still developed via the open pit mining method. Even a surface mine that removes half as much ore as the one detailed in the 2020 Pebble Mine Plan would likely result in only an incremental reduction in impacts to wetlands and streams. A smaller surface mine would still require an open pit; ex-pit storage of waste rock, pyritic tailings and bulk tailings; very large water storage facilities and disturbance associated with all other mining related infrastructure. Given the 20-year starter mine evaluated in the FEIS is unlikely to be financially viable, a smaller surface mine would also be even less likely to be economically feasible (see attached comment letter to the Army Corps of Engineers on EIS project economics dated March, 28 2019).

EPA Response

See EPA's responses to comments 1.B.1 and 2.A.2.

EPA is aware of conflicting information in the record regarding whether the 2020 Mine Plan would be economically viable. Economic-related issues are discussed in the document entitled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b) (referenced in Section 4.4 of the FD).

1.B.61 Wild For Salmon (Doc. #2506, p. 1)

The people of Bristol Bay have been clear from the beginning that large mines like the proposed Pebble mine are unwanted. Science clearly shows a large mine would unacceptably harm the fishery, the region's irreplaceable water resources, and its economy and culture. When the 2014 Proposed Determination was released, more than 1.5 million people, including tens of thousands of Alaskans, commented that they supported protections for the Bristol Bay region.

EPA Response

See EPA's response to comment 1.B.1.

1.B.62 Caleb Merendino (Doc. #0468, p. 1)

The indisputable facts, clear science, and extensive administrative record overwhelming support a final 404(c) determination that permanently protects Bristol Bay's headwaters from not only the mine plan proposed by PLP in 2020, but any future porphyry mining like that proposed for the Pebble deposit.

EPA Response

See EPA's response to comment 1.B.1.

1.B.63 Mass Mailing Campaign (Doc. #2565, pp. 1, 2)

I can't believe that we are still fighting to protect this area from the Pebble Mine. I wholeheartedly support permanently protecting Bristol Bay from the threat of mines like Pebble. The EPA cannot allow toxic mining waste to be stored at the headwaters of this important fishery.

(...)

The majority of Alaskans support EPA action to end the threat of Pebble and want to see Bristol Bay protected for good. It is time for the EPA to expedite the 404(c) process and finalize protections this year.

(...)

The threat of toxic large-scale hard rock mining, such as the proposed Pebble Mine, will continue to loom over Bristol Bay until permanent protections are secured for the region. Years of scientific study and review and a robust administrative record all support the EPA protecting this national treasure. Please finalize Clean Water Act protections for the region this year. Future generations should not have to live with the threat of mining that would devastate their cultures, communities, and sustainable economy. Please finish the job and ensure that Bristol Bays pristine lands and waters are protected in perpetuity.

EPA Response

See EPA's response to comment 1.B.1.

1.B.64 Seattle Aquarium (Doc. #0134, p. 1,2)

As an organization dedicated to inspiring conservation of our marine environment, the Seattle Aquarium writes today in strong support of the Proposed Determination under Clean Water Act Section 404(c) to prohibit and restrict the use of certain waters in the Bristol Bay watershed as disposal sites for the discharge of dredged or fill material associated with mining the Pebble Deposit. This determination would help permanently protect the Bristol Bay watershed's rivers, streams, and wetlands that support the world's largest sockeye salmon fishery and subsistence fishing.

(...)

Thank you for recognizing the “unparalleled ecological value” of the Bristol Bay watershed and the “unacceptable adverse effects on anadromous fishery areas” that could result from mining. We appreciate your leadership in protecting this area and all its inhabitants, as well as those to come in future generations. We urge you to finalize this proposed determination as quickly as possible.

EPA Response

See EPA’s response to comment 1.B.1.

1.B.65 Sitka Conservation Society (Doc. #0464, p. 3)

We encourage you to protect the waters of Bristol Bay under the Clean Water Act 404(c) from future mining development to secure the health of ecosystems in the region, the continued productivity of the Bristol Bay fishery, the economic prosperity that the seafood industry brings to all Alaskans, and the cultural importance of clean and lively waters to Western Alaska’s indigenous population.

EPA Response

See EPA’s response to comment 1.B.1.

1.B.66 Seafood Harvesters of America (Doc. #0811, p. 2)

We support EPA in completing the 404(c) process as swiftly as possible and call on the agency to finalize comprehensive protections by the end of 2022. The facts are indisputable, and the science is clear: a final 404(c) determination must protect Bristol Bay from not only the mine plan proposed by PLP in 2020, but any future large-scale mining like Pebble Mine.

EPA Response

See EPA’s response to comment 1.B.1.

1.B.67 Blue Ribbon Task Force Culinaricians, et al. (Doc. #0829, p. 1)

As culinary leaders and chefs from across the country – business owners, educators, and food system advocates – we are writing regarding the Environmental Protection Agency (EPA) Region Ten’s revised Proposed Determination to protect the Bristol Bay watershed from the harmful effects of mine waste disposal. We urge EPA to promptly issue a Final Determination that not only prohibits or restricts past, current, and future plans for the Pebble deposit but also permanently protects Bristol Bay’s headwaters from mining like that proposed for the Pebble deposit. We support the EPA in completing the 404(c) process as swiftly as possible and call on the agency to finalize comprehensive protections by the end of 2022.

EPA Response

See EPA’s response to comment 1.B.1.

1.B.68 Natural Resources Defense Council (NRDC) (Doc. #0839, pp. 1–2)

On behalf of the Natural Resources Defense Council (“NRDC”) and its 3 million members and activists, we submit these comments in support of final agency action under Section 404(c) of the Clean Water Act to protect Bristol Bay, Alaska from the proposed Pebble Mine or other large-scale porphyry ore mining of the Pebble deposit. [33 U.S.C. § 1344(c).] For more than two decades, the proposed Pebble Mine has threatened Bristol Bay’s legendary waters, wildlife, and wild salmon fishery—and put at risk the lives and livelihoods of Alaska Natives, commercial fishermen, and communities of Bristol Bay. This summer alone, a record-shattering 78 million sockeye salmon returned to Bristol Bay, supporting a \$2.2 billion annual commercial fishery, 15,000 jobs, and Alaska Native communities. Consistently, this single fishery supplies over 50 percent of the world’s sockeye salmon. Yet the specter of the proposed Pebble Mine continues to hover over Bristol Bay like the Sword of Damocles, despite overwhelming local and national opposition to the mine and support for 404(c) action.

According to Environmental Protection Agency (“EPA”) Region 10 Administrator Casey Sixkiller:

Two decades of scientific study show us that mining the Pebble Deposit would cause permanent damage to an ecosystem that supports a renewable economic powerhouse and has sustained fishing cultures since time immemorial. Clearly, Bristol Bay and the thousands of people who rely on it deserve the highest level of protection. [Press Release, U.S. Environmental Protection Agency (“EPA”), EPA Proposes to Protect Bristol Bay’s Salmon Fishery, Subsistence Fishing for Alaska Natives (May 25, 2022), <https://www.epa.gov/newsreleases/epa-proposes-protect-bristol-bays-salmon-fishery-subsistence-fishing-alaska-natives-0>.]

We fully support the Regional Administrator’s statement and urge EPA to act expeditiously under Section 404(c) of the Clean Water Act by issuing a Recommended Determination followed by a Final Determination that protects Bristol Bay from the threat of large-scale porphyry ore mining like the Pebble Mine. Our comments in support of immediate 404(c) action are organized as responses to the questions posed by the agency in Section 7 of the revised Proposed Determination released in May 2022. [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 (May 2022), <https://www.epa.gov/system/files/documents/2022-05/Pebble-Deposit-Area-404c-Proposed-Determination-May2022.pdf> (hereinafter “Revised Proposed Determination”).]

We urge EPA in its Section 404(c) Final Determination to ensure that the specter of the Pebble Mine—and any large-scale mining plan substantially similar or greater, not just in scale but in ecological impacts—is definitively removed from the region, precluded by EPA action that is defensible, timely, and durable in protecting the region, its people, and its wildlife from further threat.

EPA Response

See EPA’s response to comment 1.B.1.

1.B.69 Action Network (Doc. #1753, pp. 1, 2)

The time has come for the Environmental Protection Agency (EPA) to finish the job of protecting Bristol Bay, Alaska from the proposed Pebble Mine and other large-scale mining projects. I urge the EPA to complete the Clean Water Act Section 404(c) process and reach a Final Determination for Bristol Bay this year. I support permanently protecting this priceless resource by preventing anyone from storing toxic mining waste at the headwaters of this fishery.

(...)

Therefore, EPA must expedite the 404(c) process and finalize protections this year. The 404(c) protections should prevent Pebble and other potential large mining operations like it from storing or disposing of mining waste at the headwaters of this fishery.

(...)

The threat of toxic large-scale hard rock mining, such as the proposed Pebble Mine, will continue to loom over Bristol Bay until real, permanent protections are secured for the region. Years of scientific study and review and a robust administrative record all support the EPA protecting this national treasure. Future generations should not have to live with the threat of the Pebble Mine overshadowing their livelihoods, food sources, culture, and well being. Until eliminated, that threat will cast a long shadow not just directly on Bristol Bay and Alaska communities, but across the rest of the country.

Please finish the job and ensure that Bristol Bay's pristine lands and waters are protected in perpetuity.

EPA Response

See EPA's response to comment 1.B.1.

1.B.70 National Association of Wetland Managers (NAWM) (Doc. #0606, pp. 2, 3, 5)

NAWM recommends that EPA Region 10 prepare a recommended determination with equal or greater protections as the proposed determination. [USEPA Solicitation of Comments #1: "Comments regarding whether the EPA Region 10 Regional Administrator should withdraw the proposed determination or prepare a recommended determination for review by the Assistant Administrator for the Office of Water."]

NAWM supports EPA Region 10's proposed action to protect the watersheds underlain by the Pebble deposit for three primary reasons: (1) to protect the wetlands, streams, and other waters which provide critical habitat to salmon, other aquatic life, and a diversity of wetland-dependent wildlife; (2) to preserve the subsistence livelihood of Indigenous peoples and tribal values and culture associated with this region; (3) and for the economic value of the Pacific wild salmon fisheries which are inextricably linked to the health of the Bristol Bay watershed.

(...)

NAWM understands that the likely adverse effects on fishery areas and other ecological resources either directly or indirectly affected by discharges of dredged or fill material associated with mining the Pebble deposit are significantly detrimental and unable to be mitigated adequately. Therefore, NAWM agrees with the proposed prohibited and restricted protections as a base level of protection.

(...)

For these enumerated reasons, NAWM recommends that EPA Region 10 prepare a recommended determination with equal or greater protections as the proposed determination.

EPA Response

See EPA's responses to comments 1.B.1. and 1.B.2.

1.B.71 Pilot Point Tribal Council (Doc. #2701, p. 1)

On behalf of the Pilot Point Tribal Council, I write to call upon the Environmental Protection Agency (EPA) to fulfill its responsibility to complete its Clean Water Act Section 404(c) process and reach a Final Determination for Bristol Bay by the end of 2022. The Pilot Point Tribal Council supports permanently protecting this national treasure from the threat of large-scale mines like Pebble. The EPA cannot allow toxic mining waste to be stored at the headwaters of our region.

EPA Response

See EPA's response to comment 1.B.1.

1.C General Opposition to the PD

1.C.1 National Mining Association (NMA) (Doc. #0809, pp. 2–3)

EPA's Proposed Determination Is Unnecessary and Sets Harmful Precedent for the Mining Industry and Broader Regulated Community

NMA is deeply concerned that EPA's proposed determination, if finalized as proposed, will set harmful precedent that will be used as a blueprint to allow regional administrators to preemptively veto any development project before it has undergone a fair review during the permitting process. Principles of due process and fundamental fairness are at the core of good governance and functioning economies and societies. These principles have allowed the United States' manufacturing, energy, and infrastructure sectors to thrive and attract billions of dollars in investment for large-scale projects that spur economic activity and growth. This continued progress could be thwarted if EPA sets the precedent that certain development projects may be shut down before having the opportunity for a fair review during the established regulatory process.

We are especially concerned that EPA's proposed action is not just a veto of the Pebble project, but also is effectively a broad determination to veto any future proposals in the area, blocking development

actions across hundreds of square miles of Alaska's state-owned land. EPA's intent is clear – it will preclude all development activity in the watershed around the Pebble site. But the question of whether those lands and minerals within Alaska are developed is not for EPA to decide.

EPA Response

EPA disagrees that the FD will “veto any future proposals in the area...” or that EPA's action will fully block any development within the defined areas for prohibition or restriction. See Section 2 of the FD for a detailed description of EPA's CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, and EPA's rationale for acting now.

EPA has engaged in an open and transparent CWA Section 404(c) review process and, after consideration of an extensive scientific and technical record, as well as the public comments on the PD, has determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD provides the basis for EPA's determination that discharges of dredged or fill material from developing the Pebble deposit will result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

Lastly, EPA's CWA Section 404(c) action does not regulate mining or mineral development. Section 5 of the FD describes the defined area for prohibition and the defined area for restriction, within which EPA prohibits the specification of and restricts the use for specification of certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with the 2020 Mine Plan or developing the Pebble deposit. Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD.

See also EPA's responses to comments 2.C.1 and 2.C.13.

1.C.2 Alaska Department of Environmental Conservation (Doc. #0814, pp. 7–8)

This proposal is deeply concerning to the State. For a number of reasons, it should be withdrawn.

The proposed veto injects EPA into the very heart of Alaska politics. Region 10 makes quintessential policy decisions about whether, how, and which resources Alaska can develop, and how to accommodate Alaskans' many and diverse interests in so developing. It does this by positing a (false) choice between preserving Alaska's fishery resources or allowing for development of the Pebble deposit. [The Pebble deposit is the world's largest undeveloped copper deposit. It is estimated to contain 6.5 billion tonnes of Measured and Indicated mineral resources, containing: 57 billion pounds of copper; 71 million ounces of gold; 3.4 billion pounds of molybdenum; 345 million ounces of silver; and 2.6 million kilograms of rhenium. In addition, it contains an estimated 4.5 billion tonnes of Inferred mineral resources,

containing: 25 billion pounds of copper; 36 million ounces of gold; 2.2 billion pounds of molybdenum; 170 million ounces of silver; and 1.6 million kilograms of rhenium. IHS Markit, Economic Contribution Assessment of the Proposed Pebble Project to the US National and State Economies (February 2022) (“2022 IHS MarkitAnalysis”), at 3, 7, retrieved from https://northerndynastyminerals.com/site/assets/files/4289/ndm_economic_impact_of_the_pebble_project_-_february_20.pdf.] Championing the importance of salmon in Bristol Bay, and the interests of some Alaska Natives, it selects the former.

In so selecting, Region 10 diminishes the importance of mineral resource development to Alaska and its people. Ensuring Alaska’s ability to develop its resources was a key concern to the State and Congress during statehood negotiations. The centerpiece of the Alaska Statehood Act is the State’s right to select lands to be managed for the public’s benefit. To this end, Congress conferred upon Alaska all rights and title to the lands it selected and agreed that “[m]ineral deposits in such lands shall be subject to lease by the State as the State legislature may direct.” [Alaska Statehood Act, 72 Stat. 339, Pub. Law 85–508, 85th Congress, H.R. 7999 (July 7, 1958) (“Statehood Act”), § 6(i); see S. Rep. No. 1028, 83rd Cong. 2d Sess. 6 (1954) (“[T]he State is given the right to select lands known or believed to be mineral in character”).] These lands provide the revenues necessary to support state and local governments and to sustain Alaska’s economy, culture, and way of life. [See, e.g., Alaska Const. art. VIII, §§ 1, 2, 6; Alaska Stat. (“A.S.”) §§ 38.04.005–.015 (setting out the State’s land management policies); A.S. § 44.99.100(a) (declaring the State’s economic development policy: “To further the goals of a sound economy, stable employment, and a desirable quality of life, the legislature declares that the state has a commitment to foster the economy of Alaska through purposeful development of the state’s abundant natural resources and productive capacity.”); A.S. § 44.99.110 (declaring the State’s mineral policy to “further the economic development of the state, to maintain a sound economy and stable employment, and to encourage responsible economic development within the state for the benefit of present and future generations through the proper conservation and development of the abundant mineral resources within the state . . .”); Trustees for Alaska v. State, 736 P.2d 324, 335 (Alaska 1987) (“The primary purpose of the statehood land grants contained in section 6(a) and (b) of the Statehood Act was to ensure the economic and social well-being of the new state.”).]

The lands containing the Pebble deposit were conveyed to Alaska subject to these same conditions, by way of the Cook Inlet Land Exchange. The mineral deposits that Region 10 would now close off for development, in other words, are precisely those that are Alaska’s to use “as the State legislature may direct.”

Both the mining and fishing industries are important to Alaska. In 2021, Alaska’s mining industry contributed approximately 10,800 jobs and \$985 million in annual wages to the Alaska economy. [This figure considers direct, indirect, and inducted employment. See McKinley Research Group, LLP, The Economic Benefits of Alaska’s Mining Industry (May 2022), at 3, retrieved from <https://www.mcdowellgroup.net/publications/>. These figures include workers engaged in production (metals, coal, and industrial materials), exploration activities, and mine development. This employment also includes self-employed miners (often found in placer mines). Id.] The proposed Pebble mine would

contribute an estimated 6,166 jobs for Alaskans [These numbers are estimated for the initial 4.5-year capital phase. 2022 IHS Markit Analysis at 4.] and generate \$2.8 billion to \$5.39 billion in State revenue. [See infra Section (2)(d)(ii) of the Alaska Section of this Letter for a discussion of costs.] The importance of the fishing industry is well- documented in the proposed veto. Bristol Bay, too, is very important to Alaska, which is why Alaska has already taken so many steps—unacknowledged by Region 10—to protect the area.

(...)

Accordingly, Alaska requests that Region 10 withdraw its proposed veto following the close of this comment period.

EPA Response

See EPA’s responses to comments 1.C.1 and in Topic 2.C.

Although EPA agrees with the commenter’s position that the State of Alaska has a role in managing the State’s resources, the State’s role in managing its resources does not alter EPA’s authority under CWA Section 404(c). To the extent that the commenter is referring to Alaska-specific federal law, such as the Alaska Statehood Act or Alaska National Interest Lands Conservation Act (ANILCA), see EPA’s responses to comments 2.C.17 and 2.C.26.

Economic-related issues are discussed in the document entitled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska (EPA 2023b)* (referenced in Section 4.4 of the FD).

1.C.3 Lisa Reimers (Doc. #2666-2, pp. 11–12)

I represent Iliamna Natives Limited. We own 69,000 acres next to the Pebble project. We support the Pebble process, and we don’t - we do not support EPA trying to enforce the 404C Clean Water Act on us. We have done our own research on the 404C Clean Water Act, and we’ve heard from the Sacketts (phonetic), and the Cloree (phonetic) family that live out of state, and her - the Cloree family, they’ve gone to jail because they violated the 404 Clean Water Act. So that’s not something we would want you guys to do here. We didn’t ask you guys to come here. We choose that you guys go to places where they want this. And we think that this would imply that you go to Naknek, and Dillingham where they fish, because they dump their human waste into the water. That, to me, is violating the 404 Clean Water Act.

We’re tired of people trying to misrepresent us. They come here and they tell us they represent all of Bristol Bay - and they don’t represent us. We want jobs. We want infrastructure. We want roads. We want cheaper cost of living. And EPA is not the answer for us, unfortunately. Pebble is.

So we’ve been working with Pebble for over 20 years. They’ve been part of the community, and we don’t see any downside to this. EPA comes in once in a while, trying to enforce laws that we don’t appreciate you guys doing. We don’t - we can’t afford you guys enforcing laws that could cause harm to us

financially. And so we'd appreciate it if you guys didn't come in to support - or to enforce a 404C Clean Water Act.

EPA Response

See EPA's responses to comments 1.C.1 and 1.C.2 and in Topic 2.C.

Section 404(c) is part of the CWA and regulates discharges of dredged and fill material. The EPA Administrator's authority is to restrict, prohibit, or withdraw specification of disposal sites. Comments regarding wastewater discharges subject to CWA Section 402, such as the discharge of human waste into waters of the United States, are outside the scope of this CWA Section 404(c) action.

1.C.4 Mass Mailing Campaign (Doc. #2545, p. 1)

I am writing today to encourage the Environmental Protection Agency to adhere to due process and acknowledge the findings of the U.S. Army Corps of Engineers Final Environmental Impact Statement, which states that the Pebble Deposit can be responsibly developed with no measurable harm to the Bristol Bay fisheries.

EPA Response

As noted in Section 2 of the FD, USACE denied the CWA Section 404 permit application. USACE determined that the project as proposed could not be authorized under the Section 404(b)(1) Guidelines because the aquatic resource impacts at the proposed mine site would cause significant degradation, and the proposed compensation would not reduce the severity of project impacts. USACE also determined the project was not in the public interest.

See EPA's responses to comment 1.C.1 and in Topic 2.C.

1.C.5 National Mining Association (NMA) (Doc. #0809, p. 4)

EPA's preemptive approach also denies employment opportunities and economic benefits to the region that many Alaskans wish to see realized.

EPA Response

See EPA's responses to comments 1.C.1 and 1.C.2 and in Topic 2.C. Economic-related issues are discussed in the document entitled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b) (referenced in Section 4.4 of the FD).

1.C.6 Borell Consulting Services LLC (Doc. #0163, p. 1)

I support the environmental evaluation and permitting process in the U.S. and specifically in Alaska. This process is the most stringent and most comprehensive in the world. The Pebble Project has followed

these requirements to the letter. A preventive veto of the Pebble Project would be arbitrary and capricious, will not be legally defensible and I oppose such a move by the EPA.

(...)

I encourage the EPA to follow the legally supportable due process, reject any preemptive veto and allow the Pebble Project to proceed.

EPA Response

See EPA's response to comment 1.C.1 and responses in Topic 2.C.

1.C.7 Alaska Miners Association (AMA) (Doc. #0803, p. 5)

There are critical legal, scientific, economic, and moral reasons to follow the normal permitting process and allow for an objective evaluation to take place at the Pebble Project. The Proposed Determination is an inexcusable diversion from that process. It should be rejected, and the process be allowed to proceed to completion prior to any 404(c) decision.

EPA Response

See EPA's response to comment 1.C.1 and responses in Topic 2.C.

1.C.8 Associated General Contractors of Alaska (AGC) (Doc. #0804, pp. 1, 2)

The preemptive proposed action by the Environmental Protection Agency (EPA) would set a dangerous precedent for all future resource development projects in our nation. A determination ignores the consideration of the complete economic, social, and environmental impacts and disregards the environmental evaluations taking place currently within the existing permitting process.

(...)

AGC does not have a position on the Pebble Project specifically, but rather a position of support for a fair and consistent review process. To that end, we oppose the EPA's Preemptive 404 Veto of the Pebble Project.

EPA Response

See EPA's response to comment 1.C.1 and responses in Topic 2.C.

1.C.9 National Mining Association (NMA) (Doc. #0809, p. 1)

the NMA strongly opposes this action. In addition to our association comments, NMA endorses and incorporates by reference the letter filed by a coalition of industry trade associations and business groups representing a broad swath of the U.S. economy also opposing EPA's action. EPA should withdraw the proposed determination and allow the Pebble project opportunity to proceed through the established legal and regulatory processes that will provide thorough evaluation of the project.

EPA Response

See EPA's response to comment 1.C.1 and responses in Topic 2.C.

1.C.10 National Mining Association (NMA) (Doc. #0809, pp. 4–5)

EPA's Proposed Determination Will Have Negative Consequences on the Mining Industry and Broader Regulated Community

* Creates Regulatory Uncertainty The mining industry and broader regulated community rely on fair, consistent, and predictable permitting processes. All project proponents deserve a complete and objective review through the full permitting process, that importantly includes extensive environmental reviews, mandatory consideration of reasonable alternatives and numerous opportunities for public engagement as required pursuant to the National Environmental Policy Act. EPA's proposed determination, however, shortcuts these important processes and could upend the stable and predictable processes on which our members and the regulated community rely to secure necessary investment and complete projects important to the nation.

EPA Response

See EPA's responses to comments 1.C.1 and 2.C.13 and responses in Topic 2.C

1.C.11 National Mining Association (NMA) (Doc. #0809, pp. 4, 5)

{EPA's Proposed Determination Will Have Negative Consequences on the Mining Industry and Broader Regulated Community}

(...)

* Exacerbates a Vulnerable Minerals Supply Chain and Threatens Supply Chain Independence

President Biden recently affirmed, "We can't build a future that's made in America if we ourselves are dependent on China for the materials that power the products of today and tomorrow." [Remarks by President Biden at Signing of Executive Order on Strengthening American Manufacturing, Jan 25, 2021.] However, EPA's preemptive 404(c) action creates regulatory uncertainty that will threaten our ability to source raw materials domestically and shore up our own minerals supply chain. While the United States has one of the world's greatest mineral repositories, our ability to get those minerals into the supply chain to help meet America's needs is being threatened by crippling regulatory uncertainty, including that caused by EPA's proposed preemptive 404(c) determination. Regulatory obstacles to mineral development harm not only the U.S. mining industry, but also domestic manufacturing, innovation, and national security.

For years, the NMA has sounded the alarm on the United States' increased reliance on foreign sources of minerals. In 1954, the United States was fully reliant on foreign sources for only eight mineral commodities. Today that number is 17. The number of mineral commodities for which the U.S. is at least 25 percent net import reliant has increased from 21 mineral commodities in 1954 to 61 today. In fact,

this year's USGS Mineral Commodity Summaries report shows U.S. mineral import reliance increased over the last year and has more than doubled in the past two decades. The United States is now 100 percent import dependent for 17 minerals, and over 50 percent reliant for another 30 minerals, an increase from 2020. The report also shows China as the leading supplier for 16 minerals deemed "critical" by the U.S., essential for producing electric vehicles, wind turbines and other technologies central to the administration's climate goals. [U.S. Geological Survey, 2022, Mineral commodity summaries 2022, pp 11-12, available at <https://doi.org/10.3133/mcs2022>.] This growing reliance on imports leaves many vital domestic industries unnecessarily vulnerable to disruptions from extended, complex, and fragile supply chains. EPA's preemptive veto of the Pebble project, and the precedent it will set for other mining and development projects, further threatens supply chain independence and security.

EPA Response

EPA disagrees that its FD sets a precedent for mining and other resource development projects for several reasons. First, the FD applies only to discharges of dredged or fill material associated with the 2020 Mine Plan and certain discharges of dredged or fill material associated with developing the Pebble deposit into certain waters of the United States within the SFK, NFK, and UTC watersheds that would result in adverse effects that are the same, similar, or greater than the adverse effects of the 2020 Mine Plan. Second, EPA's sparing use of Section 404(c) since 1972 is evidence that EPA has not consistently used Section 404(c) to stop mining and development projects. Third, prior to this action, EPA used its CWA Section 404(c) authority judiciously, having completed only 13 Section 404(c) actions in the 50-year history of the CWA. EPA exercises its CWA Section 404(c) authority on a case-by-case basis based on the specific facts of each situation consistent with applicable statutory and regulatory requirements.

Comments regarding critical minerals are outside the scope of this CWA Section 404(c) action. However, EPA notes that the FD has no effect on the nation's critical minerals supply chain because no critical minerals would be produced by the proposed Pebble Mine (USGS 2022a). EPA further notes that as the Biden-Harris Administration advances its critical minerals strategy, including expanding domestic production in a timely manner, it must ensure that its actions are conducted with strong environmental, sustainability, safety, Tribal consultation and community engagement standards so that the American public has confidence that the minerals and materials used in our electric vehicles, smartphones, solar panels and other technology are sourced under responsible social, environmental and labor standards and that the Administration wisely stewards our shared natural resources for Americans today and future generations. *See Biden-Harris Principles for Mining Reform (DOI 2022)*.

EPA considered the potential impacts of its action on domestic copper supplies in the document titled *Consideration of Potential Costs Regarding the Clean Water Act Section*

404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska (EPA 2023b)
(referenced in Section 4.4 of the FD).

See EPA's responses to comments 1.C.1 and 1.D.1 and in Topic 2.C.

1.C.12 National Mining Association (NMA) (Doc. #0809, p. 7)

EPA's preemptive 404(c) veto of the Pebble project is misguided and will create significant regulatory uncertainty for the mining industry during a crisis point. We need more domestic mining to accomplish this administration's goals and support the nation's energy, infrastructure, manufacturing, supply chain, and national security interests.

EPA Response

See EPA's responses to comments 1.C.1, 1.C.11, and 2.C.13 and responses in Topic 2.C.

1.C.13 Alaska Chamber (Doc. #0806, p. 1)

The Alaska Chamber (the Chamber) writes to express concerns on the EPA Region 10 2022 Proposed Determination to prohibit and restrict the use of certain waters within defined areas as disposal sites within the Pebble Deposit Area under Section 404(c) of the Clean Water Act.

(...)

The EPA's Proposed Determination to restrict the use of waters within 309 square miles around the Pebble Deposit is yet one more occurrence in a decade-long string of actions by the agency that have put politics above science and process.

(...)

The roller coaster of actions based on politics, and not science and law is one example of precisely why the Alaska Chamber formed its newly crafted federal priority to advocate for a federal regulatory structure that is balanced, predictable and stable. Actions that go outside of the normal permitting process are precedent setting and have placed giant red flags before our future opportunities. If a mining project is stopped by a political agenda, make no mistake, the next project on the horizon with any sort of opposition associated with it will be next.

(...)

The Proposed Determination is a politically driven, inexcusable diversion from that process. The Alaska Chamber urges the EPA to continue to be guided by science, not politics, and allow the permitting process to conclude prior to any 404(c) decision.

EPA Response

See EPA's response to comment 1.C.1 and responses in Topic 2.C.

1.C.14 Alaska and 13 other States (Doc. #0810, pp. 1–3)

{If Region 10’s proposed determination is adopted, it will affirm an expansive, unconstrained interpretation of EPA’s § 404(c) power—effectively creating a § 404(c) wild card, playable at whim to stop projects.} Such a power introduces profound uncertainty into the § 404 permitting process and, by extension, the investment climate; and undermines steps taken by Congress and President Biden to lessen our Nation’s mineral dependence on other countries, like China, in pursuit of a renewable energy economy of our own.

Signed into law by President Biden on August 16, 2022, the Inflation Reduction Act [Inflation Reduction Act of 2022, H.R. 5376, Pub. Law No. 117-169, 117th Cong. 2d Sess. (signed Aug. 16, 2022) (hereinafter IRA).] is aimed in part at stimulating a national transition to a domestic renewable energy economy. [Senate Democratic Majority, Summary: The Inflation Reduction Act of 2022 (Aug. 11, 2022) (hereinafter Summary: IRA) (stating that Act is intended to encourage “invest[ment] in domestic energy production and manufacturing”).] As the Senate Democratic Majority explains, the Act

[i]ncreases American energy security through policies to support energy reliability and cleaner production coupled with historic investments in American clean energy manufacturing to lessen our reliance on China, ensuring that the transition to a clean economy creates millions of American manufacturing jobs, and is powered by American-made clean technologies. [Senate Democratic Majority, Summary of the Energy Security and Climate Change Investments in the Inflation Reduction Act of 2022 (Aug. 2022) (hereinafter Summary: IRA - Energy Security) at 1, retrieved from https://www.democrats.senate.gov/imo/media/doc/summary_of_the_energy_security_and_climate_change_investments_in_the_inflation_reduction_act_of_2022.pdf.]

To this end, the Act offers grants to improve energy infrastructure, tax incentives for the mining industry, and an increased tax credit for electric vehicles if mineral sourcing requirements are met. [IRA.]

This Act follows President Biden’s explanation earlier this year of his Administration’s policy goals:

It is the policy of my Administration that ensuring a robust, resilient, sustainable, and environmentally responsible domestic industrial base to meet the requirements of the clean energy economy, . . . is essential to our national security and the development and preservation of domestic critical infrastructure. [WhiteHouse.Gov, Briefing Room, Memorandum on Presidential Determination Pursuant to Section 303 of the Defense Production Act of 1950, as Amended, Presidential Determination No. 2022-11 (Mar. 31, 2022).]

Congress and President Biden alike are urging a transition to a domestic renewable energy economy, to lessen our energy dependence and increase our national security.

Mineral supply chains will drive this transition. The mineral deposit that Region 10’s proposed determination would foreclose from development includes copper, gold, molybdenum, silver, rhenium, and palladium. While not presently designated as a critical mineral, copper is integral to green energy

technologies like wind farms, solar panels, and electric vehicles (including EV batteries). [See Copper Development Ass'n Inc., How Copper Drives Electric Vehicles (2017), retrieved from https://www.copper.org/publications/pub_list/pdf/A6192_ElectricVehicles-Infographic.pdf.] Alaska is also home to other important minerals like Graphite, Zinc, and Tungsten. Known as the “The Treasure State,” Montana is home to critical minerals like zinc, palladium, platinum, tellurium, tin, and tungsten. These and other rare earth elements are essential components of a resilient, and renewable, American mineral economy.

Mining projects require substantial up-front investment. [An investment into Alaska’s Bokan Mountain-Dotson Ridge exploration project, which contains rare earth elements, has an estimated initial capital cost of \$221.3 million, with an operating cost of \$636.0 million. McDowell Group, The Economic Benefits of Alaska’s Mining Industry (Mar. 2018), at 20, retrieved from <https://www.mcdowellgroup.net/wp-content/uploads/2021/01/2017-ama-ei-final-report.pdf>.] In Alaska, the typical timeframe between a mineral deposit’s discovery and its development is 15 years. [Id. at 21.] In 2021, investors in Alaska projects contributed approximately \$393 million to development alone. [McKinley Research Group, LLP, The Economic Benefits of Alaska’s Mining Industry (May 2022), at 21, retrieved from <https://www.mcdowellgroup.net/publications/>; id. (“Between 1982 and 2021, about \$7.7 billion was spent on mine development in Alaska.”).] If the United States is to successfully transition to a domestic renewable energy economy, mining projects in the United States must be attractive investments. Whether a mining project is an attractive investment depends on its likelihood of securing the necessary permits, which typically include a § 404 permit from the Corps. The greater the uncertainty in the § 404 permitting process, the greater the financial risk—and the less attractive the investment. [See David Sunding, The Brattle Group, Economic Incentive Effects of EPA’s After-the-Fact Veto of a Section 404 Discharge Permit Issued to Arch Coal (May 30, 2011) (demonstrating how uncertainty in the § 404 permitting process freezes investment into projects requiring § 404 permits).]

EPA Response

See EPA’s responses to comments 1.C.1, 1.C.11, and 2.C.13 and responses in Topic 2.C.

1.C.15 Alaska and 13 other States (Doc. #0810, pp. 4, 4–5, 5–6)

With this proposed veto, EPA introduces unwarranted uncertainty into the § 404 permitting process. Section 404(c) itself contains little in the way of criteria guiding EPA’s exercise of this power, [Section 404(c) requires EPA to establish that proposed “discharge[s]” “will have an unacceptable adverse effect on” one of four resources, including “shellfish beds and fishery areas (including spawning and breeding areas).” 33 U.S.C. § 1344(c).] and EPA’s regulations are hardly more specific. [See 40 C.F.R. § 231 [Section 404(c) Procedures]. E.g., 40 C.F.R. § 231.2(e) (defining “unacceptable adverse effect” as “significant loss of or damage to fisheries” without defining “significant” or “fisheries”).] As a result, States and the regulated community must rely on EPA’s past exercises of this power for guidance. But EPA’s previous § 404(c) vetoes reveal no discernable pattern. The veto at issue here only adds to the confusion.

In this veto, Region 10:

* considers factors that Congress, in enacting § 404(c), clearly did not intend EPA to consider (including a hypothetical expanded mine scenario, secondary and indirect effects not resulting from point-source discharges, unlikely scenarios of spills and accidents, and previous commentor disapproval); [Region 10's proposed determination additionally considers topics such as the "cultural stability" of Alaska Native populations; "behavioral disorders" and "mental health degradation" potentially resulting from the mine; "dietary" considerations, including the mine's effect on the intake of "processed simple carbohydrates and saturated fats" and "protein and certain nutrients" by locals; "tension and discord" that could be "provoked" among Alaska Natives by the mine; "stress and anxiety"; "language" including the "defin[ition of] a 'wealthy person'"; "spirituality"; "social relations"; "family cohesion"; "rituals"; "folklore"; "equitable fishing opportunities"; and "people with disabilities,"—among others. See Proposed Determination at 6-18-6-24. These factors are not listed or alluded to in the text of § 404(c), nor in § 404(c)'s implementing regulations.]

(...)

* departs from EPA's previous assurances about when it would exercise this power (i.e., EPA's statements that this veto power is "reactive" [See Oversight Hearings on Section 404 of the Clean Water Act: Hearings before the Subcommittee on Environmental Pollution of the Committee on Environment and Public Works, 99th Cong. 41 (1985) (statement of Josephine Cooper, Assistant Administrator for External Affairs, EPA) (proposing that Congress make "404(c) . . . a much more effective device" by allowing EPA to use it "in advance of permit requests" which would "mov[e] the program from a reactive to a proactive one").] in nature and should only be used as a "tool of last resort" [EPA, Final Rule, Denial or Restriction of Disposal Sites; Section 404(c) Procedures, 44 FR 58076–58085, at 58080 (EPA assuring the public that "[t]he fact that 404(c) may be regarded as a tool of last resort implies that EPA will first employ its tool of 'first resort' e.g. comment and consultation with the permitting authority at all appropriate stages of the permit process").] after the regular permitting process has been "exhausted"[See 40 C.F.R. § 231.3(a)(2) (comment published in EPA regulations stating that "[i]n cases involving a proposed disposal site for which a permit application is pending, it is anticipated that the procedures of the section 404 referral process will normally be exhausted prior to any final decision of whether to initiate a § 404(c) proceeding").]. [A § 404 permit has not yet been issued by the Corps for this project. Nor has the Corps indicated an intent to issue a permit. Rather, the appeals process for the Corps' denial of a permit remains pending.]

This veto, if finalized, signals that virtually any § 404 project—for reasons entirely out of the control of the project proponent, and unidentifiable at the outset of a project—may be unilaterally terminated by EPA.

And this veto, unfortunately, is the latest in EPA's series of departures from the expected § 404 permitting process. In the course of this project, Region 10 has:

* failed to see the § 404(q) process [The 1992 Section 404(q) Memorandum of Agreement ("MOA") outlines the current process and timeframes for resolving disputes that EPA has, in an effort to issue timely permit decisions. Under this MOA, EPA may request that certain permit applications receive a

higher level of review within the Department of Army. This process is specifically aimed to address those situations wherein EPA believes that issuance of the permit will result in “unacceptable adverse effects” to “Aquatic Resources of National Importance.” See EPA.gov, Clean Water Act § 404(q) Dispute Resolution Process (EPA Published § 404(q) Dispute Resolution Process), at 2, retrieved from https://www.epa.gov/sites/default/files/2016-03/documents/404q_factsheet.pdf] through to completion before bringing this veto; [See EPA Published § 404(q) Dispute Resolution Process, at 2 (stating that “[i]f the Assistant Secretary decides to proceed with the issuance of the permit over EPA’s objections, EPA decides whether to initiate a Section 404(c) ‘veto’ action” (emphasis added)), retrieved from https://www.epa.gov/sites/default/files/2016-03/documents/404q_factsheet.pdf.]

(...)

* Failed to allow adequate time for the State of Alaska to issue, waive, or deny a § 401 certification before acting.

(...)

Decisions like these throw a wild card into the entire § 404 permitting process. EPA’s introduction of this type of uncertainty, and corresponding financial risk, into this process will have deterrent effects on investment in precisely those projects we need most to build a resilient mineral supply chain for the renewable economy. This result is counterproductive to the Inflation Reduction Act’s goal of “lessen[ing] our reliance on China” for minerals, and it undermines President Biden’s vision of “a robust, resilient, sustainable, and environmentally responsible domestic industrial base[.]” At a minimum, EPA should avoid pushing mineral development projects out to foreign countries, such as China, whose environmental laws are less protective than those of the United States.

We have abundant mineral resources in the United States. What we need is a federal government united in its preference for responsibly developing our resources, under our own environmentally protective laws, pursuant to a predictable permitting process. Not an EPA that abuses its power to target projects it does not like, stacking the deck against States and permittees in a game known only to EPA. EPA must act cooperatively with States, and consistent with national policy, so that we can, as a Nation, build the secure and reliable mineral supply chains that we need—and lessen our dependence on countries like China.

EPA Response

See EPA’s responses to comments 1.C.1, 1.C.11, and 1.D.1 and responses in Topic 2.C.

1.C.16 National Mining Association et al. (Doc. #0812, p. 1)

If finalized as proposed, EPA’s preemptive veto of the Pebble Project in Alaska will set harmful precedent and create significant regulatory uncertainty for the business community.

We therefore urge EPA to withdraw the proposed determination to allow the Pebble Project to move through the established regulatory process.

EPA Response

See EPA's response to comment 1.C.1 and responses in Topic 2.C.

1.C.17 American Exploration & Mining Association (Doc. #0818, pp. 1, 1-2)

AEMA strongly opposes the Proposed Determination.

In addition to our comments, AEMA endorses and incorporates by reference the letter filed by a coalition of industry trade associations and business groups representing a broad swath of the U.S. economy opposing EPA's action. EPA should withdraw the Proposed Determination and allow the Pebble project the opportunity to proceed through established legal and regulatory processes.

(...)

Fair, consistent, and predictable permitting processes are crucial to our members' ability to conduct these activities. If finalized as proposed, EPA's preemptive veto of the Pebble Project in Alaska will set a harmful precedent, create significant regulatory uncertainty, and diminish the investment attractiveness of the United States at a time when we need more domestic mineral production.

EPA Response

See EPA's response to comments 1.C.1, 1.C.11, and 1.D.1 and responses in Topic 2.C.

1.C.18 Alaska Support Industry Alliance (Doc. #0821, p. 1)

On behalf of the Alaska Support Industry Alliance, it's 500 member companies and their 35,000 Alaskan employees, I write to ask the EPA to withdraw the proposed determination and allow the Pebble Project to move through the established regulatory process.

Please consider the following:

* A favorable business climate exists when businesses can rely on a fair, consistent, and predictable permitting processes. Preemptively vetoing a project of this scale will send a chill through the investment community as it will indicate that companies who invest billions of dollars cannot expect a reliable process. Whether it's a mining project, a renewable energy project or a construction project - companies will be skeptical of investing in Alaska. The precedent that could be set by a preemptive veto for Alaska and the U.S. will cause significant harm to an economy that is struggling to recover from a pandemic and deal with inflation.

* There is an administrative appeal to the Corps regarding the denial of the projects 404 permit. The EPA should respect that process and allow it to proceed without intervention.

* EPA's preemptive Section 404(c) veto will deny the local communities surrounding the proposed project their best opportunity for a strong economy.

EPA Response

See EPA's responses to comments 1.C.1 and 1.C.2 and responses in Topic 2.C.

1.C.19 Competitive Enterprise Institute et al. (Doc. #0838, p. 4)

EPA's 2022 Proposed Determination on the Pebble Mine is every bit as factually suspect as the 2014 version, continues to interfere unnecessarily with Army Corps' ongoing NEPA process, and precludes the production of minerals of great value to the American economy. For these reasons, we once again urge EPA to withdraw the 2022 Proposed Determination and refrain from interfering in the Army Corps proceedings currently underway.

EPA Response

See EPA's responses to comments 1.C.1 and 1.C.11 and responses in Topic 2.C.

1.C.20 Owl Ridge Natural Resource Consultants, Inc. (Doc. #0865, p. 2)

We urge EPA to step back and revise the 2022 PD consistent with the Administrative Procedures Act and the Clean Water Act.

EPA Response

See EPA's response to comment 1.C.1 and responses in Topic 2.C.

1.C.21 Council of Alaska Producers (CAP) (Doc. #1028, p. 1)

The Council of Alaska Producers (CAP) requests the US Environmental Protection Agency (EPA) to withdraw its Proposed Determination to prohibit and restrict the use of certain waters in the South Fork Kaktuli River, North Fork Kaktuli River, and Upper Talarik Creek watersheds as disposal sites for the discharge of dredged or fill material associated with mining the Pebble deposit.

EPA Response

See EPA's response to comment 1.C.1 and responses in Topic 2.C.

1.C.22 The Pebble Limited Partnership (PLP) (Doc. #1912, pp. 5–6)

These comments are submitted on behalf of the Pebble Limited Partnership ("PLP") in response to the U.S. Environmental Protection Agency ("EPA") Region 10's May 25, 2022 Revised Proposed Determination ("Revised Proposed Determination") for the Pebble Deposit Area located in Southwest Alaska ("Pebble Deposit") that was issued pursuant to Section 404(c) of the Clean Water Act ("CWA"). As explained in detail in these comments, EPA should withdraw its Revised Proposed Determination.

The Revised Proposed Determination is simply the latest in a long history of attempts by EPA to prohibit any kind of mining in the Bristol Bay area. EPA has been opposed to development of the Pebble Project since well before it conducted any scientific study of the area. Indeed, in 2014, EPA took the

unprecedented step of issuing a Proposed Determination (the "2014 Proposed Determination") before PLP had even filed a CWA permit application. When the pressures of litigation finally forced the agency to pause its evaluation of that 2014 Proposed Determination, PLP filed a permit application pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899 with the U.S. Army Corps of Engineers ("USACE" or the "Corps") Alaska District ("District") for the purpose of developing a copper-gold-molybdenum porphyry deposit, which PLP subsequently updated during the application process (the "2020 Mine Plan"). Yet, rather than undertaking any objective evaluation of the proposed project, EPA issued the Revised Proposed Determination, making clear that its goal is to prevent any development of the Pebble Deposit, rather than to prevent any adverse effects to local or regional fish populations or fisheries.

...

USACE nonetheless denied PLP's permit application on November 25, 2020. PLP filed an administrative appeal of the permit denial with the USACE Pacific Ocean Division on January 19, 2021, and that appeal remains pending. Despite there being no indication yet from USACE that it intends to issue a Section 404 permit, EPA has taken the unprecedented step of issuing the Revised Proposed Determination to foreclose any possible development of the Pebble Deposit before USACE even has a chance to evaluate PLP's appeal.

EPA Response

See EPA's responses to comments 1.C.1 and 1.C.11, 2.C.35, 2.C.54, 4.A.1, and 5.B.32.

1.C.23 Mass Mailing Campaign (Doc. #2543, p. 1)

I am writing today to encourage the EPA to restore due process, fairness, and regulatory stability surrounding resource development projects in America:

(...)

Alaskans believe in due process, fairness, and regulatory stability. Furthermore, all Alaska trade associations have expressed unified concern about preemptive vetoes and have stood steadfast in support of the established process for evaluating resource projects.

EPA Response

See EPA's responses to comments 1.C.1 and 1.C.11 and responses in Topic 2.C.

1.C.24 Mass Mailing Campaign (Doc. #2555, p. 1)

The Proposed Determination should be rejected, and the agency should return to its proper regulatory role facilitating a fair and transparent review process free of politics.

EPA Response

See EPA's responses to comments 1.C.1 and 1.C.11 and responses in Topic 2.C.

1.C.25 Charles Knechtel (Doc. #1606, pp. 1–2)

I suggest the Pebble Limited Partnership (PLP) be invited to further re-engineer, correct, demonstrate the technology of corrections, and resubmit a proposed mine plan for Pebble Mine which eliminates long-term storage ("disposal") of potentially acid generating (PAG) waste rock, metal leaching (ML) waste rock, and pyritic tailings, including in the watersheds of the South Fork Koktuli River (SFK), North Fork Koktuli River (NFK), and Upper Talarik Creek (UTC). This might create an additional expense for their proposed Pebble Mine. Alternatively there are reasons, discussed in the following, which suggest their engineering team may be able to create profitable byproducts from those "wastes" and tailings instead of storing them, or else, sell and ship the "wastes" and tailings to persons who can use them to create valuable products. If necessary, can Pebble Limited Partnership add an engineer to their team who can plan environmentally safe creation of profitable products from those "wastes" and tailings in order to eliminate the need and risks of long-term storage?

For instance, sulfuric acid (sulphuric acid) can result from the pyrite (FeS₂, iron disulfide, iron disulphide) in pyritic tailings (Tozsin et al. 2014 [Tozsin, G., A. I. Arol, and G. Cayci. 2014. Evaluation of Pyritic Tailings from a Copper Concentration Plant for Calcareous Sodic Soil Reclamation. *Physicochemical Problems of Mineral Processing* 50(2):693-704. Available: Laboratory of Mineral Processing, Wrocław University of Technology, Poland, <https://doi.org/10.5277/ppmp140222.>]; Grieco et al. 2021 [Grieco, G., A. Sinojmeri, M. Bussolesi, G. Cocomazzi, and A. Cavallo. 2021. Environmental Impact Variability of Copper Tailing Dumps in Fushe Arrez (Northern Albania): The Role of Pyrite Separation during Flotation. *Sustainability* 13(17)9643, 18 pages. Available: MDPI, <https://doi.org/10.3390/su13179643.>]). It may be possible to deliberately produce the sulfuric acid in an environmentally friendly manner that would result in additional profit for Pebble Limited Partnership, and cause the tailings to no longer contain significant amounts of sulfur (sulphur), thus eliminating the risk of future unwanted creation of significant amounts of sulfuric acid from those tailings.

There is apparently a present shortage of sulfuric acid in the United States; one sign of this is that the price of sulfuric acid in the USA more than doubled in the time period March, 2021, to June, 2022 (Federal Reserve Economic Data, 2022) [Federal Reserve Economic Data. 2022. Producer price index sulfuric acid. Available: <https://fred.stlouisfed.org/series/WPU0613020T1.>]. Such shortages and increased prices may generally continue in the long term. For example, Maslin et al. (2022, page 1) [Maslin, M., L. Van Heerde, and S. Day. 2022. Sulfur: A potential resource crisis that could stifle green technology and threaten food security as the world decarbonises. *Geographical Journal*, 8 pages. Available: Wiley, <https://doi.org/10.1111/geoj.12475.>] state "Sulfur in the form of sulfuric acid is a crucial part of our modern industrial society... Today over 80% of the global sulfur supply comes from desulfurisation of fossil fuels..." and forecast "Decarbonisation of the global economy to deal with climate change will greatly reduce the production of fossil fuels. This will create a shortfall in the annual supply of sulfuric acid of between 100 and 320 million tonnes by 2040, depending on how quickly decarbonisation occurs..."

Grieco et al. (2021, page 1) and Maslin et al. (2022, pages 2, 4) indicate that pyrite such as from pyritic tailings has been used in the past (in many countries) and in the present (in one country) as a major source of sulfuric acid, but mention problems, such as pollution.

Oliveira et al. (2016) [Oliveira, C. M, C. M. Machado, G. W. Duarte, and M. Peterson. 2016. Beneficiation of pyrite from coal mining. *Journal of Cleaner Production* 139:821-827. Available: Elsevier, <https://doi.org/10.1016/j.jclepro.2016.08.124>.] discussed how to increase the purity and iron disulfide content of pyritic tailings in order to facilitate turning the tailings into value-added by-products; Fomchenko and Muravyov (2020) [Fomchenko, N., and M. Muravyov. 2020. Sequential Bioleaching of Pyritic Tailings and Ferric Leaching of Nonferrous Slags as a Method for Metal Recovery from Mining and Metallurgical Wastes. *Minerals* 10(12)1097, 15 pages. Available: MDPI, <https://doi.org/10.3390/min10121097>.] were able to recover valuable metals from stored pyritic flotation tailings. Could these and other improvements essentially eliminate possible pollution problems accompanying manufacture of sulfuric acid from pyritic tailings? Could a greater variety of elements be recovered from all mined materials as products and byproducts in order to avoid missed financial opportunities and to reduce abundance levels sufficiently that spills would not cause extensive pollution due to an unexpected accident or deliberate actions by hostile persons? Mining of elements now in a strictly monitored, environmentally friendly way would eliminate the possibility that those elements someday might be mined in an environmentally harmful way by those who do not care. Specific elements mentioned regarding Pebble Mine include copper, gold, molybdenum, silver; rhenium, palladium, vanadium, titanium, tellurium; sulfur; antimony, arsenic, beryllium, cadmium, lead, manganese, mercury, nickel, selenium, zinc; chromium, cobalt; as well as aluminum (aluminium), and iron.

Tozsin et al. (2014, pages 703, 694) reported utilization of pyritic tailings from a copper concentration plant was effective for reclamation of certain sodic soils for agriculture, and stated "The problem of soil sodicity (alkalisation) is extensively spread in many countries in the world. This is more vital for developing countries where a sodicity hinders agricultural production or even makes it impossible".

Could pyritic tailings be used to reclaim certain sodic soils for agriculture in a variety of countries and prevent starvation of thousands of people, as well as contribute to the elimination of long-term storage of pyritic tailings as waste?

EPA Response

The FD does not prevent PLP from re-engineering or redesigning the 2020 Mine Plan to reduce environmental impacts. As articulated in Section 5 of the FD, future proposals to develop the Pebble deposit will be evaluated in the context of the prohibition and restriction.

Section 7 of the PD solicited comments on corrective action that could be taken to reduce adverse impacts on aquatic resources from discharges of dredged or fill material associated with mining the Pebble deposit. The commenter's suggestions to reduce the

volume or toxicity of tailings respond to this issue. However, the commenter's suggestions are not detailed enough for EPA to determine if they are practicable, nor to what degree they might reduce the specific impacts discussed in Section 4 of the FD, which support EPA's determination that the construction and routine operation of the 2020 Mine Plan will result in unacceptable adverse effects on fishery areas.

Section 404(c) is part of the CWA and regulates discharges of dredged and fill material. The EPA Administrator's authority is to restrict, prohibit, or withdraw specification of disposal sites. Comments regarding suggested changes to the operation of the proposed 2020 Mine Plan are outside the scope of this CWA Section 404(c) action.

1.C.26 Charles Knechtel (Doc. #1606, p. 1)

Eliminate potentially acid generating and metal leaching waste rock from Pebble Mine by instead creating sellable byproducts, for example 1) sulfuric acid to alleviate shortages of that substance, or 2) a soil amendment which assists in the prevention of starvation of thousands of people.

EPA Response

See EPA's response to comment 1.C.25 on suggested changes to the operation of the 2020 Mine Plan. Additional specificity would be necessary for EPA to evaluate the potential of the suggested changes to reduce the aquatic resource impacts of the 2020 Mine Plan.

Section 404(c) is part of the CWA and regulates discharges of dredged and fill material. The EPA Administrator's authority is to restrict, prohibit, or withdraw specification of disposal sites.

1.C.27 David Park (Doc. #2666-12, pp. 37-39)

You, you need to research one thing - the, the warring tribes of Alaska, to try to figure out what some of the hundreds of years old culture is; why, why there's these divisions in Alaska; how Congress set up the - I mean, how did, how did Dillingham become the, the seat for Bristol Bay Native Corporation? Because some bozos in, in Congress decided, 'Oh, that's - the - we're going to make that the boss of, the boss of Bristol Bay.' Well, it doesn't work that great.

You, you go to - and any one of the, the, the regional corporations around here, most of 'em don't like where the, where the, the headquarters is for their - I mean, you go up to Barrow - they're the, they're the boss for the North Slope Region. You go to Wainwright, they have a lot of the feelings that Bristol Bay, and Newhalen, or the Lake area have against each other.

Congress has made a lot of mistakes over the years. But it - I guess just another comment, that - I mean, Bristol Bay Borough was formed; Lake and Peninsula Borough was formed. Dillingham area, basically the region for Bristol Bay Native Corporation and that, wanted to form a super borough. And there - here said, 'Absolutely no way. We're not going to form any super borough, because all the votes would go up or down, based on population.' And so, I got told specifically, 'You are against our Borough, we're going

to be against Pebble forever.’ And the - this is another meltdown result of, of what’s going on with this anti movement. The Borough factors into it. And it’s just - there so much history that, that puts us to where we are now.

But like I say, nobody wants to trade fish for, for mine - for mines. And I don’t think we have to. So - but there’s tons and tons of history that I don’t even have time to discuss, but it’s - it’s there.

EPA Response

Section 404(c) is part of the CWA and regulates discharges of dredged and fill material. The EPA Administrator’s authority is to restrict, prohibit, or withdraw specification of disposal sites. Comments regarding Alaska Native Corporations and boroughs are outside the scope of this CWA Section 404(c) action.

1.D General Expressions of Support for Mining the Pebble Deposit Area

1.D.1 National Mining Association (NMA) (Doc. #0809, p. 2)

NMA has long opposed EPA’s unlawful and unprecedented efforts to preemptively foreclose the evaluation of this project to develop minerals on state lands open to minerals exploration. However, the agency’s misguided attempt to do so again now is especially alarming given the increasing geopolitical instability that makes domestic mining even more critical to the nation’s energy and supply chain independence. The Biden administration’s commitments to achieving its ambitious priorities in large part rely on the very minerals and metals—copper, gold, and molybdenum—that the Pebble project would develop.

As explained in more detail below, EPA’s proposed action to veto the Pebble project appears completely at odds with this administration’s ambitious supply chain, climate, energy, and infrastructure priorities and appears to have been done in a vacuum. For example, earlier this year, the Biden administration invoked the Defense Production Act to expand the domestic critical minerals supply chain, recognizing that “[c]ritical minerals provide the building blocks for many modern technologies and are essential to our national security and economic prosperity” and that the U.S. is “increasingly dependent on foreign sources for many of the processed versions of these minerals. [The White House, Fact Sheet: Securing a Made in America Supply Chain for Critical Minerals, Feb. 22, 2022, available at <https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/22/fact-sheet-securing-a-made-in-america-supply-chain-for-critical-minerals/>.] A recent Benchmark forecast found that more than 300 new mines need to be built over the next decade to meet the demand for electric vehicle and energy storage batteries. [Benchmark Mineral Intelligence, “More than 300 New Mines Required to Meet Battery Demand by 2035,” Sept. 6, 2022, available at <https://www.benchmarkminerals.com/membership/more-than-300-new-mines-required-to-meet-battery-demand-by-2035/>.] Overcoming the country’s dependence on foreign sources of important raw

materials will not be possible if EPA blocks or disincentivizes the development of these resources. EPA's proposed determination not only blocks the Pebble project, but also would set harmful precedent for other mining and development projects in Alaska and nationwide.

EPA Response

To the extent that the commenter believes that EPA must consider “energy and supply chain independence” in a CWA Section 404(c) review process, EPA disagrees. CWA Section 404(c) requires EPA to determine that discharges of dredged or fill material into waters of the United States will have an unacceptable adverse effect on certain statutorily enumerated resources. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. To the extent that such supply chain consideration was required, EPA described certain potential disadvantages of its action related to mineral supplies as part of its alternative basis in Section 4.4 of the FD. See also EPA's response to comment 1.C.11.

EPA further disagrees that this decision was made “in a vacuum.” Development of a mine at the Pebble deposit and such a mine's potential effects on aquatic resources have been the subject of study for more than a decade. The scientific and legal basis of EPA's action is discussed extensively in the FD (see Sections 2, 3, and 4 of the FD).

Economic-related issues, including discussion of the role the 2020 Mine Plan could play in meeting United States' demand for copper, are discussed in the document entitled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b) (referenced in Section 4.4 of the FD).

EPA disagrees that this action would “set harmful precedent for other mining and development projects in Alaska and nationwide.” EPA's initiation of 404(c) actions is discretionary, and that discretion is unconstrained by EPA's prior action or inaction under 404(c) for specific defined areas. Furthermore, EPA has used its CWA Section 404(c) authority judiciously, having completed only 13 Section 404(c) actions in the 50-year history of the CWA. EPA's determination of an “unacceptable adverse effect” in this and in every CWA Section 404(c) action necessarily involves a case-by-case determination based on many factors, including the unique characteristics of the aquatic resource that would be affected by discharges of dredged or fill material. Section 2 of the FD explains EPA's CWA Section 404(c) authority, as well as its rationale for acting now. Section 2 of the FD also explains EPA's general policy intentions regarding the use of its Section 404(c) authority.

To the extent the commenter believes EPA's action is “unlawful” and would “preemptively foreclose the evaluation of this project to develop minerals on state lands open to minerals exploration,” see EPA's response to comment 2.C.1.

1.D.2 Foundex Pacific Inc. (Doc. #0266, pp. 1-2)

Thank you for the opportunity to comment on this issue which can have a significant economic impact on Alaska's economy including future employment for residents of surrounding communities. I would hope that this further analysis of the Pebble Project is well intended to clarify concerns by EPA and not as justification for a preemptive veto.

The Pebble team has spent more than a decade and a half in exploration and studies to define the physical parameters of the mineral deposit area and surrounding water resources, vegetation, topography and other physical properties. Avoidance of deleterious effects to fisheries and water quality has been and I'm sure will continue to be a priority of mine development.

The deposit occurs on the upper slopes at or near the top of a rounded hill. This provides advantages for the design and construction of mine facilities in a safe and environmentally sound manner. It also enhances the ability to construct tailing structures, drainage improvements and access facilities based on proven engineering design criteria. Access facilities will also be needed to provide shipping of concentrates and mine support. Although there will be challenges to construction, standard engineering design criteria commonly used in Alaska, can be applied to resolve these.

As mentioned above EPA's actions could have a significant impact on the residents of surrounding communities where there is a lack of employment opportunities. The proposed mine would be a welcome source of steady employment for years to come. The employment would occur within a proximity to where they live and recreate. Wages are excellent. The residents are used to and thrive in the climatic environment. Studies have shown that having a steady income source, such as would be provided by the mine, contributes to mental and physical well-being. It also has a positive contribution to the surrounding economy.

The Pebble deposit rests on lands owned by the State of Alaska that were selected after Statehood and in conformance with the Statehood grant. The selection recognized the importance of minerals in the area and the economic potential for development. Furthermore, the State of Alaska has always considered its fisheries important and provided protection for this resource. I think it could be said that we do a better job of use and maintenance of our resources than any state in the union.

I presume that EPA's next response, like the Corps of Engineers, will be a well thought out scientific analyses on ways the Pebble Project can proceed.

EPA Response

EPA agrees with the commenter that exploration of the Pebble deposit and studies of the physical and biological environment in the area were conducted over more than a decade. EPA used this baseline data to inform the Bristol Bay Assessment (BBA) and 2014 PD, which considered potential effects on aquatic resources from developing the Pebble deposit. More recently, USACE used these baseline data and other scientific and technical information that have become available since 2014 to evaluate PLP's CWA Section 404

permit application and prepare the FEIS. EPA's FD is based on this extensive record of scientific and technical information. As explained in Section 4 of the FD, EPA has determined that the mine site aquatic resource impacts associated with the 2020 Mine Plan analyzed in the FEIS would result in unacceptable adverse effects on fishery areas.

As noted in Section 2 of the FD, USACE denied the CWA Section 404 permit application. USACE determined that the project as proposed could not be authorized under the Section 404(b)(1) Guidelines because the aquatic resource impacts at the proposed mine site would cause significant degradation, and the proposed compensation would not reduce the severity of project impacts. USACE also determined the project was not in the public interest.

Regarding employment and economic development, economic-related issues are discussed in the document entitled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b) (referenced in Section 4.4 of the FD).

Although EPA agrees with the commenter's position that the State of Alaska has a role in managing the State's resources, the State's role in managing its resources does not alter EPA's authority under CWA Section 404(c). To the extent that the commenter was referring to Alaska-specific federal law, such as the Alaska Statehood Act or ANILCA, please see EPA's responses to comments 2.C.17 and 2.C.26.

See EPA's responses to comments in Topic 2.C.

1.D.3 American Exploration & Mining Association (Doc. #0818, p. 3)

A Fair and Predictable Permitting Process is Required to Attract Investment

EPA's Proposed Determination would unnecessarily and preemptively veto the Pebble Project before the project has had the opportunity to go through the permitting process. All project proponents deserve a fair and objective review such as the full U.S. Army Corps of Engineers' (Corps) established permitting process, that importantly include extensive environmental reviews, mandatory consideration of reasonable alternatives and numerous opportunities for public engagement as required pursuant to the National Environmental Policy Act.

As EPA is aware, an administrative appeal to the Corps' denial of the project's CWA Section 404 permit is ongoing. EPA should respect the Corps' process and allow both the administrative appeal and the Corps' established permitting processes to proceed.

The regulatory uncertainty created by EPA's preemptive veto regarding the Pebble Project will set damaging precedent that will affect not just future mining projects, but any business that must obtain a CWA Section 404 permit from the Corps. Project proponents will be forced to run the risk that their project could be preemptively blocked by EPA without a fair evaluation through the established Corps permitting processes.

Clearly, this will chill investment in domestic mining operations. Investors will not want to risk investing in a U.S. project if EPA can preemptively veto it. As noted above, the U.S. mining industry is the safest, most environmentally responsible mining industry in the world. As the Biden administration seeks ways to achieve its ambitious goals, it should encourage rather than block the development of domestic minerals.

Conclusion

Given our Nation's need for a strong domestic supply, and the proven benefits that modern mining provides to local communities, the federal government should not be taking pre-emptive and unnecessary actions to discourage or disincentivize mineral development. As noted above, the Pebble Project would represent a significant domestic source of copper and other important metals that our economy needs for the future. The EPA and other federal agencies need to consider the actual costs and benefits of any proposals, regulatory or otherwise, including impacts to our Nation's ability to secure our domestic mineral supply chains.

We strongly urge EPA to withdraw the Proposed Determination to allow the Pebble Project to continue to move through the established regulatory process. Thank you for your consideration of these comments.

EPA Response

EPA disagrees that its action undermines the current regulatory system or the permit approval process. See Section 2 of the FD for a detailed description of EPA's CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, and EPA's rationale for acting now. See EPA's responses to comments in Topic 2 regarding the USACE CWA 404 permit review process.

Regarding the commenter's assertion that EPA needs to "consider the actual costs and benefits of any proposals...including impacts to our Nation's ability to secure our domestic mineral supply chains" see EPA's responses to comments 1.C.11 and 1.D.1.

1.D.4 Alaska Miners Association (AMA) (Doc. #0803, p. 4)

The Proposed Determination takes another dangerous precedent-setting step in which it intentionally elevates one natural resource at the expense of another, rather than working within existing environmental framework that has for years provided for mining to coexist with fisheries. It ignores the scientific reality at Pebble, in which the mine-impacted anadromous streams amount to less than 1/10th of 1% of all mapped anadromous streams in the Bristol Bay watershed (9819 miles). As the EIS acknowledges, impacts to salmon species are so small that they cannot be measured. The habitat disturbance at Pebble is underutilized by anadromous fish. While fish presence has been observed, it is not well utilized when compared with similar habitat downstream or in other parts of the watershed. By example, the South Fork Kuktuli (SFK) goes dry each year just below Frying Pan Lake thus preventing spawning salmon from utilizing the lake (additionally, the lake is full of salmon killing pike). While

the lake could conceivably be productive habitat for salmon, it is underutilized because of the natural conditions in the area. The North Fork Koktuli (NFK) is also not significant habitat for Sockeye salmon.

The claim that filling the Pebble Impact area will harm the genetic diversity of the local Chinook and Coho salmon runs is not supported. The record does not establish these small populations as ‘unique’ and ignores the likelihood that returning salmon will spawn in nearly identical, but underutilized, habitat in the immediate area. However, the Proposed Determination touts and embellishes the genetic diversity of salmon populations in an attempt to justify its political action. The justification for this Pebble action could be applied to any watershed in Alaska including the Copper River, Yukon River or Kuskokwim River, and curb any attempts at development in those regions as well.

It is astonishing that the Biden Administration can publicly recognize the growing need for mineral production and outline domestic sources of minerals needed to achieve its renewable energy goals, yet issue actions that block development of the domestic mineral deposits that would significantly contribute to the nation’s mineral needs. Copper is an essential mineral for any renewable energy source, and Pebble is one of the most significant sources of copper in the nation and around the world. Improperly shutting down the opportunity at Pebble puts the nation’s green goals at risk, and the biggest beneficiary of this will be China.

EPA Response

See EPA’s responses to comments 1.C.11, 1.D.1, and 1.D.2.

See EPA’s responses to comments in Topics 3 and 4 regarding impacts to anadromous waters, anadromous fishes, and the genetic diversity of salmon populations.

1.D.5 National Mining Association et al. (Doc. #0812, p. 2)

EPA’s preemptive Section 404(c) veto will chill investment in U.S. operations and thwart our members’ ability to conduct important development projects domestically. The regulatory uncertainty created by EPA’s preemptive veto will chill investment in U.S. operations. Investors will not want to risk investing in a U.S. project if EPA can preemptively veto it. Moreover, the U.S. business community and industrial sectors represented operate under the highest environmental standards, labor protections, and health and safety standards. As the Biden administration seeks ways to achieve its ambitious goals, it should encourage rather than block domestic minerals mining, manufacturing, construction, energy production, and other development.

EPA Response

See EPA’s responses to comments 1.C.1, 1.C.11, 1.D.1, and 1.D.2 and responses in Topic 2.C.

1.D.6 National Mining Association (NMA) (Doc. #0809, pp. 4, 5–6)

{EPA’s Proposed Determination Will Have Negative Consequences on the Mining Industry and Broader Regulated Community}

(...)

* Thwarts this Administration’s Energy and Infrastructure Goals

The Biden administration’s energy and infrastructure goals all begin with and depend on mining. For example, the growing demand for renewable energy, including wind and solar development, both domestically and globally, will put additional pressure on our already constrained mineral supply chains. Renewable energy is simply not feasible without diverse mineral supplies including silver, gold, zinc, antimony, rare earths, molybdenum and, of course, copper. Copper, which provides the arteries and veins of an electrified world, will see its demand double in the coming years. It is an irreplaceable element for advanced energy technology, including EVs, wind turbines and solar panels. According to the IEA, EVs require four times more copper in the manufacturing process than gas-powered vehicles. A single wind turbine requires 4.7 tons of copper, and the growth of offshore wind is expected to account for nearly 40 percent of future copper demand. As solar technology advances, the IEA expects solar will require 68 times the amount of copper it currently uses by 2040. [Minerals Make Life, “Four Minerals Key to an Advanced Energy Future,” July 7, 2022, available at <https://mineralsmakelife.org/blog/four-minerals-key-to-an-advanced-energy-future/>]

To deliver the future of advanced energy, the U.S. needs a strong and stable supply of copper as well as all the other minerals so vital to our energy future. A recent S&P study ties the availability of copper even more closely to the success of the electrification transition: “Copper—the ‘metal of electrification’—is essential to all energy transition plans. But the potential supply-demand gap is expected to be very large as the transition proceeds. Substitution and recycling will not be enough to meet the demands of electric vehicles, power infrastructure, and renewable generation. Unless massive new supply comes online in a timely way, the goal of Net-Zero Emissions by 2050 will be short-circuited and remain out of reach.” [IHS Markit, The Future of Copper Will the looming supply gap short-circuit the energy transition?” July 2022, available at <https://cdn.ihsmarkit.com/www/pdf/0722/The-Future-of-Copper-Full-Report-14July2022.pdf>.] EPA’s preemptive veto of the Pebble project, and the precedent it will set, will make it more difficult to mine the copper and other materials needed for our energy and infrastructure priorities.

EPA Response

See EPA’s responses to comments 1.C.11 and 1.D.1.

1.D.7 Resource Development Council for Alaska, Inc. (RDC) (Doc. #0840, p. 4)

At a time when copper and other critical minerals are so vital to our nation’s economy and domestic energy independence and security, the Pebble Project represents an environmentally sound and

responsible resource development project. Resource development projects are respected as some of the most environmentally safe projects in the world. The Pebble Project, if permitted, would be held to those same and highest of environmental standards than anywhere else in the world. For these reasons, RDC urges the EPA to withdraw the flawed, speculative Proposed Determination.

EPA Response

See EPA's responses to comments 1.C.11 and 1.D.1 and responses in Topic 2.C.

1.D.8 H2T Mine Engineering Services, LLP (Doc. #0270, p. 1)

EPA's announcement to pursue pre-emptive veto of the Pebble Project in Alaska is a very damaging and must be stopped. It is a giant step backwards for the Biden Administration's environmental goals. It is ironic that the President is using the Defense Production Act to get more renewable energy minerals such as copper into production, while others in the Administration seek political ways to stop domestic mining projects such as Pebble. This preemptive effort clearly is a political maneuver to attempt to block Pebble Limited Partnership (PLP) from following an established appeals process.

(...)

National Impact

1. The EPA actions against the Pebble Project are wrong and clearly rooted in politics, not science.

(...)

4. If Pebble can be stopped due to politics, what project is next?

EPA Response

See EPA's responses to comments 1.C.11 and 1.D.1 and responses in Topic 2.C.

1.D.9 H2T Mine Engineering Services, LLP (Doc. #0270, p. 1)

The Pebble Project remains an important domestic source for the minerals necessary for the Biden Administration to reach its green energy goals. Blocking Pebble will force the US to seek additional copper resources from other countries with less rigid environmental standards.

(...)

Economic Impact – Alaska

1. Pebble could provide thousands of jobs, generate hundreds of millions of dollars in economic activity, and make important contributions to the state and local government in Alaska (over \$150 million according to the EIS). This is especially important for communities closest to the project that have few year-round jobs and face extremely high costs of living.

2. The justification for Pebble action could be applied to any watershed in Alaska including the Copper River, Yukon River, Kuskokwim River other drainage systems.

EPA Response

See EPA's responses to comments 1.C.11 and 1.D.1.

1.D.10 H2T Mine Engineering Services, LLP (Doc. #0270, p. 1)

EPA should take into consideration that blocking domestic mineral production of copper only ensures China will further its hold on being the primary supplier of critical metals for renewable energy and other technologies. With the EPA's help, China will become the Saudi Arabia of copper production.

(...)

Copper is an essential mineral for the nation's goals of expanding renewable power sources such as wind and solar. Pebble is one of the most significant copper prospects in the nation and around the world. The biggest beneficiary of preventing Pebble and other US copper mining projects will be China. Most of Alaska's land is considered pristine and undisturbed, including much of the land selected by the state for development. This type of approach from the EPA could significantly impact Alaska's economic future.

EPA Response

See EPA's responses to comments 1.C.11 and 1.D.1.

1.D.11 American Exploration & Mining Association (Doc. #0818, pp. 2-3)

Domestic Mining is Needed to Meet Skyrocketing Demand

American miners continue to play an indispensable role in building and defending our Nation. From foundations to roofs, power plants to wind farms, roads and bridges to communications grids and data storage centers, America's infrastructure begins and ends with minerals and mining. As just one example, copper's flexibility, conformity, conductivity, and resistance to corrosion makes it an ideal and essential clean energy metal.[According to the World Bank, copper is used in ten low-carbon energy technologies. <https://pubdocs.worldbank.org/en/961711588875536384/Minerals-for-Climate-Action-The-Mineral-Intensity-of-the-Clean-Energy-Transition.pdf>] Forty-three percent of U.S. copper demand comes from the construction industry, as the average American home contains 439 pounds of copper. An electric vehicle (EV) uses approximately four times as much copper as a conventional car.

There is no question that the minerals we produce are indispensable to modern society. They are also essential to fighting climate change, and for zero-emission technologies such as wind turbines, solar panels, storage batteries and EVs. As these technologies are deployed in ever- greater numbers, the demand for minerals is skyrocketing, and our Nation must do more to keep up. The International Energy Agency (IEA) published a report at the end of July 2022 titled "Global Supply Chains of EV Batteries," and

noted that demand for EV batteries will increase from 340 GWh today to about 3500 GWh by the year 2030. To meet that demand, 50 new lithium mines, 60 more nickel mines and 17 more cobalt mines would need to come into production. [<https://iea.blob.core.windows.net/assets/4eb8c252-76b1-4710-8f5e-867e751c8dda/GlobalSupplyChainsofEVBatteries.pdf>]

Congress has taken note of this surge in demand, and through the Infrastructure Investment and Jobs Act of 2021 and the Inflation Reduction Act, has decided – and we agree – that it is inappropriate, unwise and dangerous to rely on hostile, untrustworthy or unstable countries to supply our country’s minerals. Notably, the Inflation Reduction Act contains provisions requiring automakers to source significant portions of their EV batteries and components from domestic supply chains, or from countries with which the United States has free trade agreements. Congress has sent a clear message – Now is the time to get serious about building a reliable mineral supply chain (emphasis supplied). AEMA and its members stand ready to help build that supply chain right here in America.

AEMA’s members take great pride in producing the metals and other important minerals America needs for national and economic security, as well as the materials people use in their everyday lives. We are proud of our members’ contributions across the communities and regions where they operate, many of which are rural areas facing significant economic and social development challenges. The U.S. mining industry is the safest, most environmentally responsible mining industry in the world. Our members have repeatedly demonstrated that mining and protecting the environment are compatible, as mineral producers make possible the development of society’s basic needs and consistently minimize modern society’s impacts on the environment. The Pebble Project would represent a significant domestic source of copper and other important metals that our economy needs for the future.

EPA Response

See EPA’s responses to comments 1.C.11 and 1.D.1.

1.D.12 Competitive Enterprise Institute et al. (Doc. #0838, p. 2)

The Potential Benefits Of The Pebble Mine Have Grown Since The 2014 Proposed Determination

In terms of identifying any genuine environmental concerns with the Pebble Mine, little has changed with the EPA’s 2022 Proposed Determination. It is every bit as deficient as the agency’s 2014 Proposed Determination and BBWA upon which it was based. What has changed is the growing demand for the minerals that the Pebble Mine could provide.

EPA Response

See EPA’s responses to comments 1.C.11 and 1.D.1.

1.D.13 The Pebble Limited Partnership (PLP) (Doc. #1912, pp. 5–6)

The scaled-down 2020 Mine Plan advanced an environmentally sound mining proposal that would benefit the local and national economy. Indeed, PLP put significant resources into project design elements that would minimize potential impacts, including:

- * The project footprint is smaller and more compact than prior conceptual plans;
- * There are no major mine facilities in the Upper Talarik/Kvichak drainage;
- * The tailings storage facility has enhanced safeguards, including a flow through design to prevent the build-up of water in the facility and added structural stability to the embankments. Additionally, pyritic tailings would be lined for storage during operations and returned to the pit at closure; and
- * There is no use of cyanide in the mine operation.

These are just a few examples of mitigation and design features proposed by PLP to minimize the impacts of the Project, which were never considered in the hypothetical mine scenarios EPA evaluated when it first attempted to veto the Project in 2014.

(...)

At a time when the country is facing an increased demand for the very minerals that the Pebble Project can provide, EPA is taking this step based on nothing more than speculative concerns. The global energy market continues to change, with an increased push to move to renewable energy sources and replace internal combustion engine vehicles with electric and conversion vehicles. Renewable energy systems and electric vehicles utilize significantly more copper than conventional power and combustion engine vehicles. And the existing power infrastructure is rapidly deteriorating and in desperate need of modernization. Copper is vital to upgrading the electrical grid and is a key component in the clean energy technologies needed to respond to the global climate agenda. The current push to improve the energy infrastructure that is the backbone of the US economy will require minerals that are increasingly difficult to obtain. PLP is poised to help fill this need.

EPA Response

See EPA's responses to comments 1.C.11 and 1.D.1.

1.D.14 Cook Inlet Tug & Barge, LLC (Doc. #1987, p. 1)

* Copper is an essential mineral for the nation's goals of expanding renewable power sources such as wind and solar. Pebble is one of the most significant copper prospects in the nation and around the world.

** Many studies point to the importance of copper (and other minerals) to the success of the nation's goals getting more energy from renewable sources.

** The challenges facing the nation is where will the copper (and other minerals) come from as there are not sufficient known sources to meet the forecasted demand.

** Improperly shutting down the Pebble opportunity puts the nation's green goals at risk.

** The biggest beneficiary of preventing Pebble and other US copper mining projects will be China.

EPA Response

See EPA's responses to comments 1.C.11 and 1.D.1.

1.D.15 Mass Mailing Campaign (Doc. #2544, p. 1)

Alaska has a long history of responsible natural resource management of its land that is supported by a stringent regulatory system:

Through modern mining practices mines such as Red Dog, Greens Creek, and Ft. Knox successfully coexist with fish, wildlife, and the land.

The studies surrounding the Pebble Deposit, conducted by independent scientists spanning 15 years, reflect the same rigor and commitment to responsibly developing and caring for the land.

EPA Response

See EPA's response to comment 1.D.2.

1.D.16 Mass Mailing Campaign (Doc. #2551, p. 1)

Sustainable modern mining practices and other non-renewable resource extraction industries successfully exist throughout Alaska alongside salmon fisheries. The Cook Inlet salmon fisheries exist in an active oil and gas basin. Ft. Knox Mine's reclamation efforts have recreated productive fish habitat at Fish Creek. Mine operations at Middle Fork Red Dog Creek at Red Dog Mine expanded fish spawning habitat downstream. The Copper River salmon fishery occurs in a watershed with the remains of the historic Kennecott Copper Mine and the Trans Alaska Pipeline System in the headwaters of portions of the fishery. Both fisheries average higher prices per pound than the Bristol Bay Fishery.

EPA Response

See EPA's response to comment 1.D.2.

1.D.17 Mass Mailing Campaign (Doc. #2554, p. 1)

The Pebble Deposit is a true asset for the state of Alaska that will increase revenue, create year-round jobs for Alaskans, and offer much-needed stimulus for the state's economy.

EPA Response

See EPA's response to comment 1.D.2.

1.D.18 Mass Mailing Campaign (Doc. #2554, p. 1)

As one of the most significant copper discoveries in the world as well as containing vast amounts of silver and gold, the Pebble Deposit could play a major role contributing to the nation's need for domestic mineral supplies. This triad of minerals alone represents key components needed to achieve the nation's renewable and green energy goals and targeted, long-term domestic investments.

EPA Response

See EPA's responses to comments 1.C.11 and 1.D.1.

1.D.19 Mass Mailing Campaign (Doc. #2555, p. 1)

The impact of this mine on the State of Alaska is too important for the current opportunity to develop the mine to be delayed.

EPA Response

See EPA's response to comment 1.D.2.

1.D.20 Mass Mailing Campaign (Doc. #2555, p. 1)

I have had the opportunity to visit the Pebble Site and see for myself their efforts to protect the environment at each drill site. I am positive that these efforts will continue during the opening of the mine and operations of the mine.

EPA Response

See EPA's response to comment 1.D.1.

1.D.21 Pebble Project (Doc. #2664-1, pp. 3, 13-14)

They also ignore the benefits [inaudible 00:13:53] through the state and the nation, particularly with the copper development. The current federal administration-

(...)

I was going [inaudible 00:46:54] that copper's essential to the green economy, this administration, this federal administration, is attacking not only Pebble, but four other mines. How do you think that you're going to get all of the minerals you need in order to do the green economy, and I'm not a climate change denier, I don't know. But the policies that you're doing with Pebble and these other mines are only going to benefit China.

EPA Response

See EPA's responses to comments 1.C.11 and 1.D.1.

1.D.22 Margie Olympic (Doc. #2666-5, pp. 17–18)

You get a paycheck from EPA, with your 401K, and your full healthcare coverage. Let me take that away from you, and give that to our local people. See how fast you get upset when your income is taken away.

I can sit here and, and say I respect my land, my way of life. I respect my heritage. I gather my subsistence, learning from my ancestors. Today's economy needs copper. Everything we use in this world needs mining minerals. But I have already said that to you the first two times you were out here.

This two minute speech is me telling you how disappointed in you, EPA, for putting my opportunity, and my local people, for employment on the line. By you coming in and rejecting the process time and time again, shows that you are not looking at both sides of the agenda, making scenarios up, and assuming what, what-ifs. Pebble can, can be the workforce engine for the Lake region. Dillingham and Naknek has always been the Fishing District. By having Pebble in the Lake area, the entire Bristol Bay can have sustainable employment. Pebble has proven to EPA that the mine plans are safe, and showed many documents to you. It is time for EPA to accept Pebble's permits, veto the 404C, and get our local people to work.

EPA Response

See EPA's responses to comments 1.D.1 and 1.D.2.

EPA disagrees that the agency is “rejecting the process” and “not looking at both sides of the agenda.” EPA has engaged in an open and transparent CWA Section 404(c) review process and, after consideration of an extensive scientific and technical record, including the relevant portions of the USACE permitting record, EPA has determined that this information supports the findings in the FD. EPA has listened to and respects the diverse perspectives of all Alaska Natives in the Bristol Bay area. Section 6 of the FD discusses EPA's consultation with tribal governments.

1.D.23 Tim LaPorte (Doc. #2666-6, pp. 21, 31–32)

And so how'd, how'd we get from that, to where we're at now? And it's got mostly to do, to do with an incredible anti-movement, Pebble anti-movement. And it started up at Lake Clark with --

(...)

Bob Gillam, and, and the total anti-movement. You guys here right now are a product of the anti-movement, whether you know it or not. It comes clear down to like, Zales. 'We're not selling any Pebble gold.'

(...)

For crying out loud, this isn't blood diamonds. You know. It, it, this is - it's - the, the anti-movement has been very, very effective, and it's come all the way down to the last two years, now they're, they're making cement, and plugging all the holes at, at Pebble.

The Pebble Project, in my mind, is done. Well, maybe 'til Putin kicks Joe's butt and comes over here, and - and decides, 'Okay, we're not going to, we're not going to go through the EPA process to, to open Pebble back up. Just, everybody who has anything on the surface, get it off, 'cause we're gonna big - dig a big hole.' So, I don't know if that's the way Pebble's going to go or not. But the - we're, we're aimed in the wrong direction. Not one of us here in this room wants to trade fish for minerals. And everybody - I, I've talked to everybody that you can imagine, over the years. It can be done safely. The, the, the engineering, the, the, the process is in place to, to do it safely. But yet, you know - I, I understand fish. I was a - I'm a commercial fisherman from way back. And - but, but the, the exaggerated results of, of, of Pebble is absolutely ridiculous.

EPA Response

See EPA's response to comment 1.D.2.

The actions of Putin (presumably President Vladimir Putin of Russia) and his hypothetical noncompliance with the CWA are outside of the scope of this action.

1.D.24 Nancy LaPorte (Doc. #2666-10, pp. 30–31)

And, and I guess my biggest concerns, and my biggest heartache is what's happening with our local people here. And, and like I referred to, the - if you don't have a net worth of providing for your family, what we've seen is, is the alcoholism, and the drug addictions that, that people are turning to because there, there's no, there's no net worth. There, there's, there's - it, it's really a serious problem. And you complicate that with, with just what's going on economy-wise and that. Northern Air Cargo saw the writing on the wall years ago. They pulled out just this last winter. Everett's has now pulled out. We don't even have a mainline carrier coming to Iliamna, except - I mean, we're - we're, we're a commuter airline ourselves, but we can only hold nine people at a time. We're being dumped off with, with front end loader tires, lumber, all kinds of stuff that, that had been coming in with the mainline carriers. There's no mainline carrier that's going to come back to Iliamna without a Pebble project. There's three hangars for sale up at the airport right now. There, there's kids that - I, I mean, young families that are moving to Anchorage - one way out of here. And it's - this area is dying. The Lake area is dying. And, and we're watching it happen right in front of us. It, it's something that is a real heartache to us, after being here 50 years.

EPA Response

See EPA's response to comment 1.D.2.

1.D.25 Lisa Reimers (Doc. #2666-11, pp. 32–33)

We always have visitors that come in the middle of the summer when it's beautiful, and it's green, and everything is like, 'Oh, this is a beautiful place.' You should come in the middle of the winter, when we have frozen water. You can't get to your driveway. You're running low on fuel. This place is not so beautiful. And you can't afford to pay for fuel, because you don't have enough money to buy fuel.

When you hear people from these lodges speaking out against Pebble, they, they come in only in the summer, four months out of the year. They charge \$15,000 per person a week, and they cater, they fly out. They have rich people that come in with jets. And we're just normal people, just like you.

(...)

So you live in a place where you have Starbucks, you have roads, you have - life is easy. Life is not that easy here in the winter. Life's not easy at all, when you're trying to support your family and trying to figure out, 'What's the future hold for my kids? What's the future hold for my nieces, and nephews, and family members, and everyone here?' If there is no Pebble, we don't see a future here. Like Tim and Nancy said, it's dying.

EPA Response

See EPA's response to comment 1.D.2.

1.D.26 David Park (Doc. #2666-12, pp. 35–36)

America and Alaska need all the minerals, and all the oil, and you know, copper and stuff that America depends on. And we are getting it from all the other countries, and we are paying way more than what we should for crude oil. They're not - they're not just asking for money. We don't see what they ask for behind doors, for us to get that crude oil. And we don't see what, you know, they need - we need copper for all the electrical stuff, and all the other stuff that America wants and die - you know, cries for. And we do have the minerals and the resources here in Alaska. And the corporations have some of the say in it, too.

And you know, why do we have to depend on other countries that America had to spend way, so much, and too much to get the product we need? That's all I have to say.

EPA Response

EPA's CWA Section 404(c) action does not regulate mineral development. Congress provided EPA with specific authority to prevent unacceptable adverse effects on a set of enumerated resources, including fishery areas. EPA has determined that the discharge of dredged or fill material associated with developing the Pebble deposit will result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD provides the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas.

1.D.27 Franken Stein (Doc. #0383, p. 1)

Please Build the mine and get all you can out of the ground

EPA Response

See EPA's response to comment 1.D.2.

1.D.28 Pebble Project (Doc. #0817, p. 1)

China and the Mineral Supply Chain – There is ample evidence that if the Biden Administration is to meet its aspirations for a green energy future copious amounts of various minerals including copper will be required. However, the Administration and their environmentalist allies are attempting to prevent the development of a number of mines in the United States. Meanwhile, China has been roaming the globe gobbling up minerals and mineral concentrates. In addition, China continues to expand its processing capacity.

EPA needs to explain why the RPD combined with the other anti-mining activities by the Biden administration does not assist China in becoming the OPEC of minerals, whereby the Chinese can hold the United States hostage both in terms of price and supply. It also needs to explain why the Administration’s opposition to mining in the United States will not increase the costs of green energy, an outcome which will most be a burden to those with low incomes, another violation of environmental justice policy.

EPA Response

See EPA’s responses to comments 1.C.11 and 1.D.1.

1.D.29 Mass Mailing Campaign (Doc. #2545, p. 1)

Modern mining demonstrates that responsible natural resource development can productively enhance conservation efforts: Red Dog, Greens Creek, and Ft. Knox successfully coexist with fish, wildlife, and the land.

EPA Response

See EPA’s response to comment 1.D.2.

TOPIC 2. PROJECT DESCRIPTION AND BACKGROUND

2.A Project Description: Overview of the Pebble Deposit, and Overview of the 2020 Mine Plan

2.A.1 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 17–22)

C. Pebble Project's Unprecedented Impacts Leading to Section 404 Permit Denial

The proposed Pebble Mine Project, as detailed in the 2020 Mine Plan and analyzed in the Pebble Project Final EIS completed in July 2020, would have a variety of impacts to the aquatic environment including direct fill of an unprecedented amount of essential fish habitat and connected wetlands, secondary impacts resulting in functional waters and wetlands degradation, and habitat conversion over a large geographic area. The Project's size and impacts are immense for the untouched pristine Bristol Bay ecosystem. As the Final EIS determined, the mine footprint alone covers approximately 9,000 acres of the landscape and the project will result in the direct and permanent loss of more than 2,100 acres of wetlands, ponds, and marine waters and 105.4 miles of streams, including 8.5 miles of salmon streams and 21.2 miles of fish-bearing streams.

[Table 1. Pebble Mine Final EIS - Quantified Impacts to Waters and Fish Habitat Table included in submission here] [Final EIS Alternative #3.] [See, Final EIS Chapter 4, Table 4.1-1 (“Pebble Project expansion—develop 55% of delineated resources”).]

Without question, the proposed Pebble Mine Project at the proposed 2020 Mine Plan size of 1.3 billion tons mined will be the largest and most damaging hardrock mine project in the history of Alaska. The proposed 2020 Mine Plan is also more damaging to anadromous waters and aquatic habitat than any other project we could find on record in Alaska.

[Table 2. Section 404 Permit Alaska Comparison Chart included in submission here] [Final EIS, page 4.24-3, Table 4.24-1.] [Final EIS, page 4.24-3, Table 4.24-1.] [Final EIS, Executive Summary, p.93, Table ES-1.] [Final EIS, Executive Summary, p.93, Table ES-1.] [Final EIS, page 4.22-111, Table 4.22-40.] [Final EIS, Chapter 4.24, Table 4.24-4: Summary of Cumulative Effects for Fish Values (“At the mine site, an additional 35 miles of anadromous stream habitat would be lost in the SFK and UTC watersheds.”).] [Final EIS, page 4.22-111, Table 4.22-40.] [Final EIS, page 4.22-111, Table 4.22-40.] [USDA Forest Service, Record of Decision Greens Creek Mine Tailings Disposal Facility Expansion (Sept. 5, 2013), p. 34, available at http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/FEIS_ROD.pdf.] [Id at p. 3-114.] [USDA Forest Service, Record of Decision and Final EIS, Greens Creek Tailings Disposal (Nov. 2003), p. 4-37, available at <http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/feis1.pdf>.] [Army Corps of Engineers, signed authorization of work, Greens Creek Tailings Disposal (Feb. 11, 2015),

available at <http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/poa1988-269m6.pdf> [ADF&G Technical Report No. 14-08, Arctic Grayling and Burbot Studies at the Fort Knox Mine (Oct. 2014), available at https://www.adfg.alaska.gov/static/home/library/pdfs/habitat/14_08.pdf [<https://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=main.interactive>] [SRK Consulting, Fort Knox and True North Mines Environmental Audits, submitted to Alaska DNR, DEC, DF&G (May 2012), p. 53-54, available at <http://dnr.alaska.gov/mlw/mining/largemine/fortknox/pdf/fgmiaudit2012.pdf>] [State of Alaska, DEC, Fish Creek FGMI Mining POA-1992-574-S, Section 401 Certificate of Reasonable Assurance (July 12, 2007), available at <http://dnr.alaska.gov/mlw/mining/largemine/fortknox/pdf2/401scert.pdf>] [Army Corps of Engineers, Public Notice of Application for Permit, Fish Creek POA-1992-574-M19 (Sept. 29, 2010), available at http://dec.alaska.gov/Water/WPSdocs/POA-1992-574-M19_CERT.PDF] [Army Corps of Engineers, POA-1992-574-M24 (issued May 2, 2014).] [Fort Knox Mine Plan of Operations Amendment Request (Dec. 12, 2018), available at <http://204.89.222.126/mlw/mining/largemine/fortknox/pdf2018/f20149852poo-mod-request-15.pdf>] [Alaska Dept. of Fish and Game Fish Habitat Permit FH05-I-0050 (Aug. 28, 2009), p. 2, available at https://www.adfg.alaska.gov/static/home/library/pdfs/habitat/11_08b.pdf] [Army Corps of Engineers, Public Notice of Application for Permit, Lynn Canal POA-1990-592-M6 (July 17, 2009), available at <http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/kensusacepnjul09.pdf>] [Army Corps of Engineers, Public Notice of Application for Permit, Goodpaster River 1 (Sept. 19, 2003), p. 2, available at http://dnr.alaska.gov/mlw/mining/largemine/pogo/pogo9-18/pogo_feis_vol_II.pdf (appendix B).] [Red Dog Mine Extension – Aqqaluk Project Final SEIS, p. 3-100, available at <http://dnr.alaska.gov/mlw/mining/largemine/reddog/pdf/rdseis2009vol1.pdf>.] [Army Corps of Engineers, Public Notice of Application for Permit, Chukchi Sea POA-1984-12-M45 (Oct. 9, 2009), available at <http://dnr.alaska.gov/mlw/mining/largemine/reddog/pdf/rdseis2009vol2a.pdf>] [<http://www.nanushukeis.com/projectdescription.html>] [Army Corps of Engineers, Record of Decision, Point Thompson Development Project (Oct. 19, 2012), available at <https://www.poa.usace.army.mil/Portals/34/docs/regulatory/PtThomsonRODOct2012.pdf>] [Id at p. 58.] [Id at p. 2.] [Army Corps of Engineers, Record of Decision, Northstar (May 3, 1999), p. 22, available at https://www.boem.gov/uploadedFiles/BOEM/About_BOEM/BOEM_Regions/Alaska_Region/Leasing_and_Plans/P_lans/1999-5-3_US_Corp_of_Engineers_Alaska_Distric_Record_of_Decision.pdf] [Army Corps of Engineers, Public Notice of Application for Permit, Beaufort Sea POA-2015-16 (Aug. 21, 2017), available at <https://www.poa.usace.army.mil/LinkClick.aspx?fileticket=wDoo3enUTMk%3D&portalid=34>]

Moreover, no hardrock mine project in Alaska comes close to Pebble in terms of water treatment needs. For the 20-year mine plan, which targets less than 13% of the Pebble ore deposit, the Final EIS states that PLP will need to treat nearly 39 million gallons of water per day. For the 78-year plan, which targets 55% of the ore deposit, this number jumps to nearly 54 million gallons per day. Because of the composition of the polluted water created by the mining operations, this water treatment involves

multiple complex processes and equipment, including chemical precipitation, filtration, high-pressure membrane filtration, and reverse osmosis.

[Table 3. Water Treatment Capacities at Alaska Hardrock Mines included in submission here] [Final EIS, Executive Summary, at page 13 (two water treatment plans proposed to treat influent of 14 cfs and 46 cfs (60 cfs total) converts to 26,929.87 gallons per minute).] [Final EIS, Executive Summary, at page 13 (two water treatment plans proposed to treat influent of 14 cfs and 46 cfs (60 cfs total) converts to 26,929.87 gallons per minute).] [Water Engineering Technologies, Inc., White Paper on Water Treatment Process, prepared for Pebble Limited Partnership (July 24, 2012), p. 5 (Kensington Mine process rate of 1,500 gallons per minute).] [Id at p. 5 (Greens Creek Mine process rate of 2,500 gallons per minute)] [Id (Red Dog Mine process rate of 4,600 gallons per minute).] [Donlin APDES permit, available at http://dec.alaska.gov/Water/WPSdocs/AK0055867_docs.pdf (based on 4,750 gallons per minute permitted capacity).]

As the Final EIS notes, “no other wild salmon fishery in the world exists in conjunction with an active mine of this size.”[Final EIS, at p. 4.6-9.]

The Final EIS clearly demonstrated that Pebble Mine would have extensive impacts on Bristol Bay’s wetlands and rivers.[See e.g., BBNC’s review of the Final EIS, available at: <https://www.bbnc.net/wp-content/uploads/2020/07/FEIS-Inadequate-to-Support-Clean-Water-Act-Permit.pdf>.] As such, on August 24, 2020, the U.S. Army Corps announced publicly that PLP’s 2020 mine plan mine “could not be permitted”, among other things because of an inadequate compensatory mitigation plan.[U.S. Army Public Affairs, Army finds Pebble Mine project cannot be permitted as proposed (Aug. 24, 2020), https://www.army.mil/article/238426/army_finds_pebble_mine_project_cannot_be_permitted_as_proposed.] On November 20, 2020, the Army Corps formally denied PLP’s permit application, finding that (1) Pebble would cause unavoidable adverse impacts to the region’s waters and (2) was contrary to the public interest.

EPA Response

EPA agrees with the commenter that available information indicates that the proposed project would result in substantial direct and secondary impacts to aquatic resources. As detailed in Section 4 of the FD, EPA considered the predicted aquatic resource impacts of the proposed project, including those detailed in the FEIS, when evaluating whether the project would result in unacceptable adverse effects on fishery areas.

As noted in Section 2 of the FD, USACE denied the permit application. USACE determined that the project as proposed could not be authorized because the aquatic resource impacts at the proposed mine site would cause significant degradation, and the proposed compensation would not reduce the severity of project impacts. As explained in Section 4 of the FD, EPA has independently concluded that the direct and secondary impacts of the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan, as well as discharges that would result in effects similar or greater in

nature and magnitude to the 2020 Mine Plan, would result in significant degradation under the Section 404(b)(1) Guidelines.

2.A.2 Bristol Bay Regional Seafood Development Association (BBRSDA) (Doc. #2062, pp. 6–8)

Any purported corrective action or future plan to mine the Pebble deposit should take into account the evidence that the 2020 Mine Plan was not the intended mine nor was it even economically viable.

The EPA must highly scrutinize any “corrective action” or “future plan” for the Pebble mine with great skepticism. Because the RPD relies on the 2020 Mine Plan, the EPA should further note the gaping discrepancy between the so-called “plan” that it described in its permit applications and its actual plans for the mine.

An applicant for a federal Clean Water Act permit must certify that the information contained therein is “complete and accurate.” (See 18 U.S.C. § 1001 (criminalizing false statements in permit applications).) In its original 2017 Permit Application, the Pebble Limited Partnership (“PLP”) pledged in no uncertain terms that “mining in the open pit will stop after 14 years,” and that production would be limited to 1.1 billion tons of the Pebble deposit. (See 2017 Permit Application, Attachment D §§ 1.8, 3.3, 6.1.) Indeed, PLP pronounced that “The Project plan has been limited to mining the near-surface portion of the Pebble Deposit” in order to “significantly reduce the footprint of the open pit, TSF, and mine facilities.” (Table 23.)

PLP twice amended its applications. In 2019, PLP amended its application to extend active mining operations to 20 years, and in 2020, PLP amended its application again to change the transportation corridor (what the RPD refers to as the “2020 Mine Plan”). In none of these applications did PLP ever disclose any possibility of extending the mining operations beyond 20 years. Indeed, PLP’s CEO testified before Congress that “Pebble has planned a smaller, smarter mine” and has “reduced the mine size” to avoid concerns about environmental impacts. PLP’s CEO testified unequivocally that “Pebble has no current plans, in this application or in any other way, for expansion.” (See *The Pebble Mine Project: Process and Potential Impacts Before H. Comm. On Transp. And Infrastructure, 116th Cong. (2019)* (statement of Tom Collier, CEO, PLP).)

But PLP and Northern Dynasty Minerals Ltd. (“NDM”) executives have made emphatic pronouncements directly contradicting their sworn certifications and testimony. Mr. Ron Thiessen, NDM’s President and CEO, repeatedly stressed that the 20-year project described in the permit application would be only the first stage in an expansive development of the Pebble deposit. (Attachment C – 2020-09-25 Pebble Project – Letter re Pebble Tapes, Ex. 1- 1.) Mr. Thiessen has represented that PLP is “gonna make the application to continue for another 20” years, and that additional mining will become “unstoppable” with “constant expansions” after issuance of the first permit. (Attachment C – 2020-09-25 Pebble Project – Letter re Pebble Tapes, Ex. 1-2.) Mr. Thiessen agreed that significant expansion of the mine is “pretty much 100%” likely, and the actual operational life of the mine is “probably gonna be more than 200

years” and “not gonna be finished for 180, 200 years.” (Attachment C – 2020-09-25 Pebble Project – Letter re Pebble Tapes, Ex. 1-3, 33.) PLP has never disclaimed these statements as untrue.

Moreover, we know that the statements of these executives cannot be brushed off as mere puffery, because one of many fundamental problems with the 2020 Mine Plan is that – in addition to the fact that the mine design itself is completely unproven in this type of environment – its economic viability has never been shown (See, e.g. Attachment D – Chambers — PM will be a 78-year mine 3-14-19, Attachment E – Borden — Economic Feasibility).

Indeed, in a form filed with the U.S. Securities and Exchange Commission dated July 2, 2020 (and in similar filings dating back years), NDM stated flatly that PLP’s mineral interests do not contain any “Mineral Reserves,” meaning mineral resources that have demonstrated economic viability. NDM stated further that its “current mine plan that is included in the Project Description for the development of the Pebble Project is not supported by any preliminary economic assessment or any preliminary or final feasibility study.” Accordingly, any so-called “plan” to spend billions of dollars to develop the massive infrastructure needed to mine the Pebble deposit that purports that it will then shut down after mining only a small fraction of the deposit is not economically or even logically sound and cannot be taken seriously.

The evidence showing the direct contradiction of affirmative, material statements made in a federal CWA permit application constitute clear grounds to reject any attempt by PLP or NDM to modify the 2020 Mine Plan in an effort to circumvent any action the EPA takes here. Any such corrective action or future plan must relate to an actual plan to mine the deposit, not an attempt to game the permitting process by seeking a starter permit intended only to open the door to a much longer-term plan to mine a much larger portion of the deposit. Unless and until an actually intended and economically sound plan is presented so that its true adverse effects can be fully assessed and understood, no “corrective action” or “future plan” should be considered.

EPA Response

EPA is aware of conflicting information in the record regarding whether the 2020 Mine Plan would be economically viable. This uncertainty is discussed in the document entitled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b).

EPA agrees with the commenter that PLP and Northern Dynasty Minerals Ltd (NDM) have publicly expressed the hope that the Pebble deposit could support future expansion beyond the 2020 Mine Plan. As discussed in Section 4 of the FD, EPA considered the potential for future expansion of a mine but focused its evaluation on the direct and secondary impacts of the proposed project. EPA determined that four different categories of predicted aquatic resource impacts associated with the 2020 Mine Plan would result in unacceptable adverse effects on fishery areas.

See Sections 4.3.1.2.1 through 4.3.1.2.4 of the FD for detailed discussions of the predicted aquatic resource impacts from the Expanded Mine Scenario analyzed in the FEIS. As explained in Section 4.3.1.2 of the FD, the Expanded Mine Scenario is not a basis for the FD because it is not part of the 2020 Mine Plan, has not otherwise been proposed, and would require additional and separate permitting.

The restriction applies to future proposals to discharge dredged or fill materials associated with developing the Pebble deposit and addresses potential expansion by considering cumulative adverse effects.

2.A.3 Mass Mailing Campaign (Doc. #2550, p. 1)

The project would include the construction of a 270-megawatt power plant and 165-mile natural gas pipeline, as well as an 82-mile road and large dammed ponds for the tailings — some of them toxic.

EPA Response

EPA agrees with the commenter that the proposed project would include the referenced infrastructure. EPA agrees with the commenter that the tailings storage facilities would contain chemicals in concentrations that could cause lethal acute toxicity in downstream fish species and other sensitive aquatic species if tailings were released.

2.A.4 Santa Claus (Doc. #2664-27, p. 22)

In my opinion, the Pebble limited partnership in Northern Dynasty continue to evade questions about Pebble Mines, proposed ultimate size and how much they intend to mine. The greater the mine size, the more tailings, and other waste that will generate.

EPA Response

EPA agrees with the commenter that mine expansion would result in the generation of more mine tailings and other waste. EPA considered information in the FEIS that supports this conclusion regarding the Expanded Mine Scenario. EPA's discussion of the Expanded Mine Scenario occurs in Section 4.3.1.2 of FD, which considers compliance with the relevant portions of the CWA Section 404(b)(1) guidelines.

Section 4 of the FD describes EPA's basis for its findings of unacceptable adverse effects on anadromous fishery areas. The Expanded Mine Scenario is not a basis for the FD because it is not part of the 2020 Mine Plan, has not otherwise been proposed, and would require additional and separate permitting.

2.A.5 Nancy LaPorte (Doc. #2666-10, p. 31)

there's been an incredible anti-movement - anti-Pebble movement. And it, it's very, very effective. I mean, my, my feelings is - I mean, it started out with, they're going to have a settling pond twice the size of, of the Seattle - of the Seattle Space Needle. Well, why, why would they pick that? Well, anybody that

goes anywhere goes to Seattle. And all of a sudden, ‘Crap, here’s the Space Needle. There’s just - twice, twice the - the settling pond will be twice this deep. When it explodes, everything in Bristol Bay is gonna die.’ You know, and, and people have been lied to. People in, in the Bristol Bay area here are scared to death of Pebble, because they’ve been so successfully lied to.

EPA Response

Although both project proponents and opponents have conducted information campaigns, the EIS that USACE prepared analyzes the proposed project based on information the applicant provided. As referenced in EPA’s response to comment 2.A.1, USACE denied the permit application after it determined that the project as proposed could not be authorized because the aquatic resource impacts at the proposed mine site would cause significant degradation, and the proposed compensation would not reduce the severity of project impacts. EPA considered the same information on project impacts from the applicant, as well as other information in the record for this action, in evaluating whether the proposed project would result in unacceptable adverse effects on fishery areas.

2.A.6 Charles Borbridge (Doc. #2097, p. 1)

The isolated location would also increase the size of the mine transportation infrastructure footprint.

EPA Response

The EPA agrees that there is currently no transportation infrastructure to the proposed mine site. Under the 2020 Mine Plan, transportation infrastructure would need to be constructed in order to conduct mining operations.

2.A.7 Les Gara (Doc. #0132, p. 2)

The chemical processing and on-site storage, even of the vastly understated, deceptively “scaled back” 1.4 billion tons of earth and toxic waste ore, puts Bristol Bay, and the livelihoods and interests of the Bay’s residents (most of whom oppose it) at risk for generations.

That will be the most waste rock stored at any open pit mine in Alaska, and appears to be the most waste ore (definitely among the most) of any open pit mine in the United States.

EPA Response

The commenter appears to be considering overburden (“earth”), processed tailings (“waste ore”), and waste rock collectively. As explained in Section 2.1.2.1 of the FD, each type of material would be managed independently. EPA does agree with the commenter that the scale of operations and tailings volume of the 2020 Mine Plan would be greater than for any other current or proposed mine in Alaska. The FEIS evaluated multiple

potential spill and release scenarios, and EPA considered that information in making this determination

2.B Background: Timeline of Key Events Related to the Pebble Deposit Area, and Re-Initiation of CWA Section 404(c) Review Process

2.B.1 United Tribes of Bristol Bay (Doc. #0109, p. 1)

Last year, PLP [stated](#) that the EPA “should not be allowed to remand the Proposed Determination into administrative no-mans-land for indefinite proceedings for an indefinite time.” But now that your agency has begun the comment period, PLP has changed their tune in an attempt to yet again delay the finalization of 404(c) Clean Water Act protections for Bristol Bay. The Revised Proposed Determination was already delayed once, from November 2021 to May 2022. PLP has not demonstrated the "good cause" required by established regulations to further extend the timeline yet again on these vital protections.

Additionally, Pebble Limited Partnership has had eight years since EPA Region-10 sent its first [15-day letter](#), giving them an ample amount of time to make their case. Any extension to the 40-day comment period could threaten the agency’s ability to finalize protections by the end of this year, which is the timeline that has been requested repeatedly by Tribes, commercial fishermen, and communities in the region.

EPA Response

As detailed in Section 2 of the FD, the EPA Region 10 Regional Administrator identified good cause to extend the comment period on the PD by 60 days, pursuant to 40 CFR 231.8. The extension notice was published in the *Federal Register*.

2.B.2 Pacific Seafood Processors Association (PSPA) (Doc. #0137, pp. 1–2)

PSPA members support industrial development that follows appropriate environmental safeguards, yet we have watched the evolution of PLP’s proposed Pebble Mine with great concern that such development would be incompatible with sustainable fisheries. When EPA first proposed a 404(c) PD in 2014, it was based on a Bristol Bay Watershed Assessment that analyzed the best information available at the time, which did not yet include PLP’s permit application or mine plan. This 2014 analysis considered a scenario of mining 0.25 billion tons of ore.

The EPA’s updated PD differs from the one issued in 2014, in that it is based on PLP’s permit application first submitted in 2017 to the Army Corps of Engineers and updated in 2020 (i.e., the 2020 Mine Plan). This Mine Plan provide significant detail about the Pebble Project’s larger footprint, expanded operations (mining 1.3 billions of tons of ore), and landscape disturbances, thereby allowing for more

robust and accurate analyses of environmental impacts. EPA's scientific review, including information from the Final Environmental Impact Statement based on PLP's permit applications and subsequent scientific analyses, found PLP's 2020 Mine Plan would destroy approximately 100 miles of streams and 2,113 acres of wetlands, permanently degrading critical salmon habitat in Bristol Bay's headwaters.

This updated scientific assessment of the Pebble Project's impacts to the Bristol Bay watershed and its fisheries habitat led to the conclusion that PLP's 2020 Mine Plan would result in unacceptable adverse effects to aquatic resources, satisfying the statutory trigger to invoke Section 404(c) of the Clean Water Act. This finding is consistent with the findings of the Army Corps of Engineers, which in November 2020 denied PLP's permit application based on the 2020 Mine Plan for the same reason. Even without additional analysis on commercial fisheries economic impacts or longer-term failure scenarios, PSPA concurs that the unacceptable adverse effects standard has been met for 404(c) purposes and development of the Pebble Deposit should not advance.

EPA Response

EPA agrees with the commenter that the 2020 Mine Plan would have a larger physical footprint and greater aquatic resource impacts than the 0.25-billion-ton mine scenario analyzed in the Bristol Bay Assessment (EPA 2014a). EPA acknowledges the commenter's support for this action and agrees with the commenter that its determination regarding unacceptable adverse effects from construction and operation of the 2020 Mine Plan is consistent with USACE findings that led to denial of PLP's permit application.

2.B.3 Port of Seattle (Doc. #0159, p. 1)

The U.S. Army Corps of Engineers' final Environmental Impact Statement found that the discharges from mining the Pebble deposit would violate Clean Water Act standards, because the project would cause unavoidable adverse impacts and result in significant degradation. As a result of the Corps' findings and Record of Decision denying the Clean Water Act Permit, as well as the EPA's analysis, we support Region 10's proposed determination to restrict discharges of mining material from the Pebble deposit in the Bristol Bay watershed.

EPA Response

See EPA's response to comment 2.A.1 regarding the determination by USACE and EPA's independent determination that the proposed project would result in significant degradation within the context of the CWA Section 404(b)(1) Guidelines.

EPA acknowledges the commenter's support for this action.

2.B.4 Trillium Asset Management LLC (Doc. #0162, p. 3)

A final environmental review, released by the U.S. Army Corps of Engineers in November 2020, determined that the proposed 2020 Pebble mine plan, would not comply with the Clean Water Act (CWA) Section 404(b)(1) Guidelines and would be "contrary to the public

interest.” [https://www.alaskajournal.com/sites/alaskajournal.com/files/20201120_pebble_project_rod_0.pdf] The Corps determined that even with after consideration of proposed mitigation measures, “the proposed project would cause unavoidable adverse impacts to aquatic resources, which would result in significant degradation to aquatic resources.”

In May 2022, the U.S. Environmental Protection Agency announced its revised plan to use Section 404(c) of the CWA to protect the Bristol Bay watershed from mine waste disposal from the Pebble Deposit, setting the stage for lasting protection for the largest and most productive wild salmon fishery on earth. [<https://www.epa.gov/bristolbay>]

EPA Response

See EPA’s response to comment 2.A.1 regarding the USACE determination, and EPA’s independent determination, that the proposed project would result in significant degradation within the context of the CWA Section 404(b)(1) Guidelines.

2.B.5 Borell Consulting Services LLC (Doc. #0163, p. 1)

Pebble followed the rules and the U.S. Army Corps of Engineers Final Environmental Impact Statement findings were that the Pebble Project can be responsibly developed with no measurable harm to the Bristol Bay fisheries. Changing the rules after many years of work and millions of dollars have been expended may be typical for a “banana republic” but America is different, America is based on the rule of law.

I have discussed the project and the environmental baseline studies with many environmental scientists and every single one has agreed that the environmental work that has been done for Pebble is far more detailed and more thorough than has been done for any other project they have ever seen. It is essential that companies know what the requirements are and that if they meet those requirements, their project can be approved.

EPA Response

EPA disagrees with the commenter’s assertion that its action amounts to “changing the rules” and is somehow contrary to the rule of law. Section 404(c) is part of the CWA, the law that regulates discharges of dredged and fill material into waters of the United States. The EPA Administrator’s authority to restrict, prohibit, or withdraw specification of disposal sites has been part of the CWA Section 404 permit program since its inception, and all proposed specifications are subject to the Administrator’s authority.

The “years of work and millions of dollars” referenced by the commenter were necessary for PLP to assess the mineral deposit and prepare its CWA Section 404 permit application. EPA disagrees with any implied suggestion by the commenter that pre-application expenditures should be considered when a CWA Section 404 permit application is evaluated for compliance with the restrictions on discharge in the CWA Section 404(b)(1)

Guidelines. As required by the CWA, the Section 404(b)(1) Guidelines are the substantive environmental criteria used to evaluate proposed discharges of dredged or fill material.

EPA disagrees with the commenter’s suggestion that USACE “found” that the “Pebble Project could be responsibly developed.” As articulated in its Record of Decision (ROD), USACE determined that the project could not be authorized as proposed because it did not comply with the CWA Section 404(b)(1) Guidelines. Specifically, USACE determined that the aquatic resource impacts at the proposed mine site would cause significant degradation, and the proposed compensation would not reduce the severity of project impacts.

USACE’s determinations that the 2020 Mine Plan did not comply with the restrictions on discharge found in the CWA Section 404(b)(1) Guidelines and was not in the public interest were made notwithstanding statements in the FEIS about harm to the Bristol Bay fisheries. Appendix B of the FD addresses the relevance of such statements in the FEIS to EPA’s determination.

As explained in Section 4 of the FD, EPA has independently concluded that the direct and secondary impacts of the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan, as well as discharges that would result in effects similar or greater in nature and magnitude to the 2020 Mine Plan, would result in significant degradation under the CWA Section 404(b)(1) Guidelines. Both USACE and EPA evaluated the proposed project based on information provided by the applicant.

EPA agrees with the commenter that the environmental baseline studies for the Pebble project were more detailed and thorough than for most Alaska projects. This is appropriate because the CWA Section 404(b)(1) Guidelines indicate that the rigor of review for proposed discharges of dredged or fill materials should be commensurate with the potential harm of the discharges. The record indicates that the proposed project would be unusually large and impactful, warranting detailed and thorough baseline studies. We also note that numerous commenters, including federal and state resource agencies, have criticized elements of the baseline studies. We disagree with any suggestion that thorough baseline studies by themselves are a criterion for project approval.

2.B.6 Trout Unlimited (Doc. #0190, p. 1)

The people of Bristol Bay have been clear from the beginning that large mines like the proposed Pebble mine are unwanted. Science clearly shows a large mine would unacceptably harm the fishery, the region's irreplaceable water resources, and its economy and culture. When the 2014 Proposed Determination was released, more than 1.5 million people, including tens of thousands of Alaskans, commented that they supported protections for the Bristol Bay region.

EPA Response

The commenter is correct that most of the comments EPA received on the 2014 PD were supportive of EPA's action. In addition, most of the comments received on EPA Region 10's 2022 PD were also supportive of that action; see Section 2.2.2 of the FD.

2.B.7 Enervise (Doc. #0320, p. 1)

One need only listen to the Pebble mine tapes (The Pebble Tapes - EIA US) to hear firsthand the "bait and switch" tactics used by politicians and Canadian owned mining industry executives and their behind-the-scenes political dealings to subvert the intent of the permit process. The long-range goal of these mining interests was made clear and that is to eventually expand the footprint of The Pebble mine beyond the original permit.

EPA Response

See EPA's responses to comments 2.A.2 and 2.B.33 regarding how potential future mine expansion was addressed in the FD.

2.B.8 Center for Science in Public Participation (CSP2) (Doc. #0607, p. 3)

Identify any other documents from the USACE administrative record that EPA should consider in its decision-making for this CWA Section 404(c) review process.

EPA should consider the suggestion made to the USACE in comments that the technical findings of the EIS, with particular emphasis on the findings related to fisheries impacts, be peer reviewed by EPA before accepting their validity.

The findings by the Army Corps of Engineers in its EIS, and Environmental Protection Agency's findings that led to its proposed 404(c) veto, are diametrically opposed. The company proposing the Pebble Mine will certainly litigate both the Record of Decision by the USACE, and USEPA 404(c) determination, citing the findings in the Pebble Mine EIS.

EPA's Bristol Bay Watershed Assessment, which undertook a detailed assessment of the risks the Pebble Mine development posed to aquatic resources, did conduct a peer review of the science at issue. The Pebble EIS, like all EISs, did not receive peer review of the science presented by the project proponent, and the subsequent EIS findings were based on these scientifically unsupported judgements.

Unfortunately, the Pebble EIS is not the only example where the science used in an EIS, which is paid for by the project proponent, has led to significant unpredicted issues with a project. Mining, in particular, has many examples where things have gone unpredictably wrong.

EPA Response

As acknowledged in the comment, NEPA documents are not required to be peer reviewed. The commenter is correct that EPA's BBA was peer reviewed and available for public

comment. However, EPA's regulations for implementing CWA Section 404(c) indicate that the Regional Administrator will evaluate "available" information. There is no requirement that information be peer reviewed to be considered. On the contrary, both NEPA and EPA's CWA Section 404(c) regulations require the consideration of public comments and other information that will not be peer reviewed. EPA considers the analysis in the FD and the supporting record to be scientifically robust.

EPA disagrees that its findings are "diametrically opposed" to those of USACE. USACE determined that the project as proposed could not be authorized because the aquatic resource impacts at the proposed mine site would cause significant degradation, and the proposed compensatory mitigation would not reduce the severity of project impacts. As explained in Section 4 of the FD, EPA has independently concluded that the direct and secondary impacts of the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan, as well as discharges that would result in effects similar or greater in nature and magnitude to the 2020 Mine Plan, would result in significant degradation under the CWA Section 404(b)(1) Guidelines.

2.B.9 Alaska Miners Association (AMA) (Doc. #0803, pp. 1–2)

The EPA's Proposed Determination to restrict the use of waters within 309 square miles around the Pebble Deposit is yet one more occurrence in a decade-long string of actions by the agency that have put politics above science and process.

In 2012, EPA Region 10 released the Bristol Bay Watershed Assessment (EPA-HQ-ORD-2012-0276), one the agency conducted prior to the Pebble Partnership submitting any sort of mining plan or permit application. Instead, EPA designed a hypothetical mine scenario intentionally crafted to attempt to show negative impacts to the environment. A watershed assessment is not a step in permitting and was introduced arbitrability for the Pebble Project. In 2013, EPA released its revised assessment which continued a biased and scientifically specious review of the proposed project. Using the two flawed assessments, EPA ultimately released a Proposed Determination concluding mining cannot be done safely at Pebble and initiated a Section 404c veto process. Again, this was done in the absence of a permit application for mining in the area and without any formal, established environmental review. You will find AMA's comments on these actions as attachments to this letter.

Following both litigation and a change in the federal Administration, EPA began a process to withdraw its Proposed Determination and federal permitting for the Pebble Project began. From 2018 to 2020, the Pebble EIS scoping, draft, and final took place, in which we provide more detail below. Following a Final Environmental Impact Statement (EIS) that concluded the mine plan as proposed would not have negative impacts to the environment, the United States Army Corps of Engineers (Corps) denied a 404 permit to the project. This denial is still under appeal today, however, in May 2022, EPA announced a new Proposed Determination to again begin a Clean Water Act Section 404(c) veto.

The roller coaster of actions based on politics, and not science and law at Pebble has put Alaska, and the United States in a perilous position with investors questioning whether to expend major capital into resource and economic projects. Actions that go outside of the normal permitting process are precedent setting and they have placed giant red flags before our future opportunities. If Pebble is ultimately stopped by a political agenda, make no mistake, the next project on the horizon with any sort of opposition associated with it will be next. This could apply to a mine, a road, an oil exploration project, a wastewater treatment plant, a wind farm – it makes no difference. The EPA's actions have started a slippery slope and those that oppose development in our nation are paying attention. The arguments used against Pebble will become the norm for stopping development as many in the mining industry are already seeing similar arguments and actions at other projects in the U.S.

EPA Response

The current action by EPA is based on its evaluation of the predicted aquatic resource impacts of the 2020 Mine Plan, including those detailed in the FEIS, to determine whether the project would result in unacceptable adverse effects on fishery areas.

Additionally, EPA disagrees with several assertions made by the commenter. As explained in Section 2.2.3 of the FD, EPA may initiate a CWA Section 404(c) action prior to submission of a CWA Section 404 permit application. The BBA was used to share EPA's analytic framework with the public and relied heavily on PLP's environmental baseline document. In addition to being available for comment by the public, the BBA was peer reviewed by technical experts. EPA's Office of Inspector General (OIG) determined that EPA's actions in preparing the BBA were without bias.

The mine scenarios were based on public information about the mine project prepared for NDM and underestimated aquatic resource impacts by only evaluating a subset of mine site components. The mine scenarios analyzed in the BBA closely match portions of the proposed project and expanded mine scenario analyzed in the FEIS.

EPA has not concluded that development of the Pebble deposit cannot be done safely. As explained in Section 4 of the FD, EPA has determined that the mine site aquatic resource impacts associated with the 2020 Mine Plan analyzed in the FEIS would result in unacceptable adverse effects on fishery areas.

The FEIS also did not indicate that the proposed project "would not have negative impacts to the environment." As explained in the ROD, the CWA Section 404 permit application was denied in part because of the extensive aquatic resource impacts analyzed in the FEIS. USACE determined that the project as proposed could not be authorized under the CWA Section 404(b)(1) Guidelines because the aquatic resource impacts at the proposed mine site would cause significant degradation, and the proposed compensatory mitigation would not reduce the severity of project impacts. USACE also determined that the project was not in the public interest.

EPA disagrees with commenter that its final determination is “based on politics, and not science and law.” The scientific and legal basis of EPA’s action is discussed extensively in EPA’s FD and supported by an extensive administrative record.

EPA further disagrees that its present action is “precedent setting” and a “slippery slope.” EPA’s initiation of CWA Section 404(c) actions is discretionary, and that discretion is unconstrained by EPA’s prior action or inaction under CWA Section 404(c) for specific, defined areas. EPA also notes that although USACE authorizes approximately 74,000 permit activities in the nation’s waters each year, EPA has used its CWA Section 404(c) authority very sparingly, issuing only 13 final determinations since 1972.

2.B.10 Alaska Chamber (Doc. #0806, p. 2)

{In 2012, EPA Region 10 released the Bristol Bay Watershed Assessment (EPA-HQ-ORD-2012-0276), one the agency conducted prior to the Pebble Partnership submitting any sort of mining plan or permit application. Instead, EPA designed a hypothetical mine scenario intentionally crafted to attempt to show negative impacts to the environment. A watershed assessment is not a step in permitting and was introduced arbitrability for the Pebble Project. In 2013, EPA released its revised assessment which continued a biased and scientifically specious review of the proposed project.} Using the two flawed assessments, EPA ultimately released a Proposed Determination concluding mining cannot be done safely at Pebble and initiated a Section 404c veto process. Again, this was done in the absence of a permit application for mining in the area and without any formal, established environmental review.

EPA Response

See EPA’s responses to comments 2.B.16 and 2.B.9 regarding the BBA and 2014 PD.

2.B.11 Alaska Chamber (Doc. #0806, p. 2)

Following both litigation and a change in the federal Administration, EPA began a process to withdraw its Proposed Determination and federal permitting for the Pebble Project began. From 2018 to 2020, the Pebble EIS scoping, draft, and final took place, in which we provide more detail below. Following a Final Environmental Impact Statement (EIS) that concluded the mine plan as proposed would not have negative impacts to the environment, the United States Army Corps of Engineers (Corps) denied a 404 permit to the project. This denial is under appeal today, however, in May 2022, EPA announced a new Proposed Determination to again begin a Clean Water Act Section 404(c) veto.

EPA Response

Please see EPA’s response to comment 2.B.9 regarding how the extensive aquatic resource impacts of the proposed project led USACE to deny PLP’s CWA Section 404 permit application.

2.B.12 Alaska and 13 other States (Doc. #0810, p. 6)

Region 10 and the Corps also refused to include the State of Alaska in their § 404(b)(1) Guidelines discussions. Equally disconcerting was their cessation of communication with the State of Alaska about this project back in 2020—despite Alaska’s dual interest as regulator and landowner. [Alaska’s Department of Natural Resources (“ADNR”), as land manager, depended on this communication to engage with the Corps’ compensatory mitigation requirements, which would have required extensive restrictions on state-owned lands beyond the currently leased areas. The Corps also denied ADNR’s request to participate in the project proponent’s appeal of the Corps’ denial of the § 404 permit. Compare EPA, Final Rule, Denial or Restriction of Disposal Sites; Section 404(c) Procedures, 44 FR 58076–58085, at 58080 (EPA assuring the public that “[t]he fact that [§] 404(c) may be regarded as a tool of last resort implies that EPA will first employ its tool of ‘first resort’ e.g. comment and consultation with the permitting authority at all appropriate stages of the permit process”).], [Use of this power over lands the State received subject to protections under a statehood act, as here, is exceptionally concerning, because EPA’s action amounts to a diminishment of the rights guaranteed under the statehood act—i.e., the right to select and use former federal lands as directed by state legislature.]

EPA Response

Interactions between USACE and the State of Alaska during the NEPA and permit review processes and subsequent appeal of the permit denial are outside the scope of this action. EPA’s decision is based on its evaluation of the predicted aquatic resource impacts from the 2020 Mine Plan. Additionally, the record indicates that the State of Alaska was a cooperating agency during the NEPA review and participated in technical meetings and discussions of many aspects of the EIS, including water quality, fish, alternatives, and compensatory mitigation options with USACE and the applicant.

With regard to the commenter’s assertions about the Statehood Act, see EPA’s response to comment 2.C.17.

2.B.13 United Tribes of Bristol Bay (UTBB) (Doc. #0823, p. 2)

In 2010, six Bristol Bay Tribes, all of whom later founded UTBB, sent a petition to EPA requesting that the Agency take action to curtail or prevent potential mining projects that would negatively impact the Nushagak and Kvichak rivers. In answering that petition, EPA engaged in the process of developing a comprehensive science-based watershed assessment addressing the potential mining related impacts to Bristol Bay’s waters, salmon, wildlife, and most importantly, its Native people. In developing the Bristol Bay Watershed Assessment (BBWA), EPA incorporated the comments and suggestions of the Tribes and expanded the scope of the BBWA to include potential mine related impacts on such things as: non-salmonid fish species, waterfowl, terrestrial wildlife, and edible plants. The BBWA also includes expanded analysis on the salmon-based subsistence culture practiced by the Yup’ik, Dena’ina, and Alutiiq peoples of Bristol Bay. Previously, EPA worked together with its Tribal partners to incorporate this important information into the BBWA. UTBB wholeheartedly agreed with the BBWA’s ultimate

conclusion that any harmful environmental impacts on Bristol Bay's salmon populations will translate into harmful cultural impacts to Bristol Bay's Tribal communities.

II. THE BRISTOL BAY WATERSHED ASSESSMENT CONCLUSIVELY OUTLINED THE IMPACTS OF LARGE SCALE MINING ON BRISTOL BAY'S NATURAL AND NATIVE ENVIRONMENT.

Critical to the decision to move forward and finalize the section 404(c) process is the impact not only the natural environment, but to Bristol Bay's people. The BBWA contains a report from Drs. Alan Boraas and Catherine Knott (Report) which details many of the traditional hunting, fishing, and religious practices of the tribal communities in the region. Most importantly, the Report describes with precision the threats posed to these traditional practices by changes in the surrounding environment—particularly changes resulting from mineral development. Because a full reiteration of the Report's contents is unnecessary, UTBB will only highlight the Report's key findings and discuss how those findings are critical to fully understanding the need for section 404(c) protections as a whole.

EPA Response

EPA agrees with the commenter that the concerns of Alaska Natives from Bristol Bay have been an important consideration in EPA's action. Section 2.2.1 of the FD discusses the 2010 petition that six Bristol Bay tribal governments initially submitted to EPA, which three additional tribal governments subsequently signed. Section 6.3 of the FD discusses EPA's efforts to consult with tribal governments, and Section 6.3.1 discusses potential impacts of the 2020 Mine Plan to subsistence activities.

2.B.14 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 2)

For more than fifteen years, KSP and TU have worked with local tribes, anglers and hunters, commercial fishing interests and local businesses to protect Bristol Bay's world-class fisheries—and the many rivers, streams and lakes that sustain them. Members and supporters of TU and KSP have submitted countless individual comments to the EPA and other federal and state agencies advocating for the protection of the Bristol Bay region, testified at every opportunity in hearings from Dillingham to Washington D.C., and submitted volumes of technical comments over the years. When the EPA attempted to withdraw its original PD in 2019 for politically-motivated reasons and without adequate scientifically-based rationale, TU successfully challenged that decision and won a court order vacating the withdrawal. We remain committed to using every tool at our disposal to ensure Bristol Bay's headwaters remain free from large mines like the proposed Pebble mine.

EPA Response

Section 2.2.1 of the FD discusses the litigation over withdrawal of the 2014 PD that the commenter referenced.

2.B.15 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (BBFA) (Doc. #0830, p. 2)

The 2022 PD follows litigation over EPA Region 10's withdrawal of the 2014 PD. "The Ninth Circuit concluded that under EPA's regulations at 40 CFR 231.5(a), EPA is authorized to withdraw a proposed determination 'only if the discharge of materials would be unlikely to have an unacceptable adverse effect.'" 2022 PD citing Trout Unlimited v. Pirzadeh, 1 F.4th 738, 757 (9th Cir.) (emphasis in original). The Court explained:

Whether "unacceptable" adverse effects are "likely" is a flexible standard that draws considerably on the agency's expertise and judgment. Cf. 44 Fed. Reg. at 58078 ("[W]hat is required is a reasonable likelihood that unacceptable adverse effects will occur-not absolute certainty but more than mere guesswork.").

1 F.4th at 759 (emphasis added).

EPA Response

Section 2.2.1 of the FD discusses the litigation over withdrawal of the 2014 PD that the commenter referenced.

2.B.16 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 15–17)

B. Decades of Local Opposition to the Pebble Mine Project and Efforts Towards Section 404(c) Protections

In light of the enormous importance of salmon to Bristol Bay communities, the numerous proposals for mining of the Pebble deposit [PLP has submitted mine plans to regulatory agencies for various purposes. See, e.g., Northern Dynasty Minerals Ltd., Securities Exchange Comm'n Filing (Feb. 24, 2011), available at <http://www.sec.gov/Archives/edgar/data/1164771/000106299311000722/0001062993-11-000722-index.htm>; Pebble Project—ADNR Water Rights Applications (2006), available at <http://dnr.alaska.gov/mlw/mining/largemine/pebble/water-right-apps/index.cfm>.] have been of great interest to the people of the region. The consensus is that the proposed Pebble mine would severely undercut the very foundation of Bristol Bay – its incredible salmon resource. This is a conviction that has only grown stronger with time. PLP continues to push the mine, despite its oft-repeated statements of deference to the people of Bristol Bay. PLP's proposal has caused disruption, uncertainty, and fear throughout the region.

The unprecedented threat posed by the Pebble Mine, along with PLP's failure to address the concerns of local people over the course of a decade, spurred BBNC along with several Alaska Native Tribes and others to file petitions in 2010 asking EPA to impose § 404(c) protections for Bristol Bay water and salmon resources. [See, e.g., Letter from Jason Metrokin, BBNC to EPA Region 10 (Aug. 12, 2010); Joint Letter from Six Tribes to EPA (May 2, 2010); Letter from Alaska Independent Fishermen' Marketing Association to EPA (May 13, 2010); Letter from Bristol Bay Regional Seafood Devt. Ass'n to EPA (June 20, 2010); Bristol Bay Native Association, A Resolution Requesting the EPA to Invoke Section 404(c) of

the Clean Water Act as Appropriate in the Kvichak and Nushagak Drainages of the Bristol Bay Watershed to Protect Habitat and Existing Uses, Res. 2010-32 (Sept. 17, 2010). EPA also received 404(c) requests and letters of support from Ekuk Village Council, Clarks Point Tribal Council, Twin Hills Village Council, Alaska Independent Fishermen’s Marketing Association, Bristol Bay Regional Seafood Development Association, National Council of Churches, and numerous other sporting and conservation groups.] The request from Bristol Bay was echoed around Alaska and the nation from multiple stakeholder groups dependent on the fishery, such as commercial and recreational fishers, seafood processors and marketers, chefs and restaurant and supermarket owners, and sport fishing and hunting lodge owners and guides, as well as by jewelry companies, conservation organizations, members of the faith community, and elected officials from Alaska and other states.

Public opposition to the Pebble Mine has only increased over time as EPA undertook its efforts to study the Bristol Bay watersheds and impacts from mining. With increased opposition came increased support for EPA 404(c) action. Nationally since 2012, more than 2.5 million public comments have been submitted to EPA supporting the agency’s efforts to protect Bristol Bay from the proposed Pebble Mine Project. The vast majority of comments to EPA from Alaskans have been in opposition to the Project. The depth and breadth of this coalition is unprecedented for a major resource development project.

[Bar Graphs of Comments Supporting EPA Action to Protect Bristol Bay and Alaska Comments Supporting EPA Action to Protect Bristol Bay included in submission here]

The public’s opposition remained steadfast during the Army Corps NEPA process, with more than 400,000 comments during NEPA scoping in summer 2018 [U.S. Army Corps of Engineers, Pebble Project Final Environmental Impact Statement (July 2020), available at: <https://cdxapps.epa.gov/cdx-enepa-II/public/action/eis/details?eisId=301934>, [hereinafter “Final EIS” or “Pebble Final ES”], at Appx. A (Scoping Report), p. 7 (describing 171,236 form letters and 295,721 petition signatures received).] and more than 700,000 comments on the Draft EIS in summer 2019 expressing opposition to Pebble Mine.[Agency Comments Support People and Fish of Bristol Bay (July 16, 2019), <https://www.savebristolbay.org/bloghost/2019/7/16/agency-comments-support-people-and-fish-of-bristol-bay> (“on July 1, we celebrated the nearly 700,000 submitted comments opposing the mine plan due to destructive impacts the project would have on the fishery.”).]

Polling of Alaska residents over time also indicates steadfast opposition to the Project in the state. Most recently, a survey of likely November 2020 voters taken in June 2020 shows Alaskans oppose the mine by a 2-1 margin (62% to 31%). [Memo from David Binder Research to Bristol Bay Defense Fund, Alaska voters strongly oppose Pebble Mine and would support an EPA veto (July 2020), available at https://stoppebbleminenow.org/wp-content/uploads/2020/07/BBDF_PollingMemo.pdf.] BBNC’s own polling has shown similar results, with a majority of Alaskans opposing the mine dating back to at least 2012. [BBNC, Pebble Mine Polling Update (Feb. 2020), available at: <https://www.bbnc.net/wp-content/uploads/2020/01/BBNC-Pebble-Local-Opposition-2020.pdf>.]

[Line Graph of Alaskans Opposition to the Development of Pebble Mine from 2012 to 2022 included in submission here]

EPA Response

EPA acknowledges that a substantial number of public comments expressing opposition to development of the Pebble deposit have been submitted to EPA in response to the BBA, 2014 PD, and 2022 PD. USACE received similar comments in response to the Draft Environmental Impact Statement (DEIS).

2.B.17 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 22–29)

D. PLP's Permit Denial Appeal and Future Plans

On January 19, 2021, PLP filed a request for an appeal of the Army Corps permit denial with Pacific Ocean Division of the Army Corps. PLP's reasons for appeal include: (i) the Army Corps' finding of significant degradation is contrary to law and unsupported by the record; (ii) the Army Corps' rejection of PLP's compensatory mitigation plan is contrary to Army Corps regulations and guidance; and (iii) the Army Corps' determination that the Pebble Project is not in the public interest is contrary to law and unsupported in the record. [NDM, Second Quarter Financial Report for the period ending June 30, 2022 (filed with the SEC Aug. 16, 2022), available at:

https://www.sec.gov/Archives/edgar/data/0001164771/000165495422011412/ndm_6k.htm.] The Army Corps accepted the appeal on February 25, 2021, and review of the appeal is ongoing. An appeals conference between the Army Corps and PLP was held in July 2022. [Id.]

Concurrent with the appeal process, PLP and its parent company Northern Dynasty Minerals ("NDM") have made public pronouncements that the companies "have by no means given up on this project" and have publicly discussed potential amendments to the 2020 Mine Plan with the aim towards regulatory approval. [SmithWeekly Research Discussion with Ron Thiessen, Northern Dynasty Minerals, Part 1 June 22, 2021, available at: <https://www.youtube.com/watch?v=i8JcFccI04A> and <https://www.smithweeklyinternational.com/discussions>.]

Specifically, the companies have discussed moving the Project forward with new project design options such as dry stacking, underground mining at Pebble East, and chemical gold recovery and altering components of its 2020 Mine Plan such as water treatment: [SmithWeekly Research Discussion with Ron Thiessen, Northern Dynasty Minerals, Part 1 (June 22, 2021), available at: <https://www.youtube.com/watch?v=i8JcFccI04A> and <https://smithweekly.podbean.com/e/discussion-with-ron-thiessen-part-1-northern-dynasty-minerals-nysenak/> (discussion of new gold recovery and water treatment plans at 13:26 to 15:16; discussion of dry-stacking plans at 20:57 to 22:02; and discussion of an underground mine at Pebble at 22:26 to 24:46).] These options, however, were dismissed in the Army Corps permitting process as not qualifying as the Least Environmentally Damaging Practicable Alternative ("LEDPA") because the options either increased environmental impacts or were not financially viable. For example, the Army Corps found that developing an underground mine at Pebble East "would increase adverse environmental impacts," specifically by increasing direct wetlands impacts by approximately 2,600 acres and impacting Upper Talarik Creek. [Final EIS, Appx. B, p. B-9. See also, p. B-26 (dismissing secondary gold recovery by cyanide leaching

alternative because of environmental impacts such as toxicity to aquatic organisms and increasing the project footprint) and pp. B-69 to 70 (dismissing the dry stacking alternative because the milling rate at Pebble is too large and “would greatly complicate the logistics of the milling operation to include frequent clogging of filters [and] the need for an emergency slurry TSF.”.)]

In October 2021, NDM filed with the Securities and Exchange Commission (“SEC”) an updated Preliminary Economic Assessment (“2021 PEA”) that presents the projected economics of the 2020 Mine Plan and “explores potential expansion scenarios for the Project.” [Pebble Project Preliminary Economic Assessment NI 43-101 Technical Report, prepared for Northern Dynasty Minerals Ltd., prepared by Ausenco Engineering Canada (effective date: Sept. 9, 2021), on file with the SEC at: https://www.sec.gov/Archives/edgar/data/1164771/000165495421011600/ndm_ex991.htm [hereinafter “2021 PEA”].] Under the Expanded Mine Scenario, approximately 8.6 billion tons of ore would be mined over 58 years, with additional milling occurring over another 20 to 40 years, for a total of 78 to 98 years of additional activity at the mine site. This Expanded Mine Scenario, consisting of 55% of the delineated Pebble orebody, was also analyzed in the Final EIS as a reasonably foreseeable future action. [Final EIS at Table 4.1-1.]

That the companies continue to pursue a larger mine plan and alternative mine designs is unsurprising. Throughout the history of the companies, PLP and NDM have described mine plans differently depending on the audience, posing one plan to the regulatory community while promoting other plans to the investment community. As NDM CEO Ron Thiessen admitted to the investment community in summer 2021, the “purpose” of the 2020 Mine Plan was “to try and create something that people could get comfortable with, we could obtain, if you will, our social license.” [SmithWeekly Research Discussion with Ron Thiessen, Northern Dynasty Minerals, Part 1 (June 22, 2021), available at: <https://www.youtube.com/watch?v=i8JcFccI04A> and <https://smithweekly.podbean.com/e/discussion-with-ron-thiessen-part-1-northern-dynasty-minerals-nysenak/>.]

Some of PLP’s options for alternative mine plan designs were discussed and rejected in the Army Corps permitting process, including 26 alternative locations for tailings storage facilities (see Figure 1 below) and 7 alternative water management pond locations (see Figure 2 below). Many of these options were dismissed by PLP as not practicable due to greater impacts to wetlands, greater impacts to anadromous fish waters, legal impossibility due to Mineral Closure Order 393 or lack of financial viability. [Table 4 impacts numbers and PLP’s analysis of TSF options available in RFI 98. See enclosed Appx. C, at p. 2280.]

[Table 4. Selected PLP TSF Options Impacts Comparison Chart included in submission here]

Despite these high levels of impacts and PLP’s own dismissal of these options, PLP may try and resurrect rejected options, or some combination thereof, plans, as the company’s options for siting facilities are limited by the region’s topography, climate, and other factors. [For instance, as EPA noted in the 2014 BBWA, the topography in the region limits PLP’s options for siting its tailings storage and water management facilities. See EPA, An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska (2014), [hereinafter “Bristol Bay Watershed Assessment” or “BBWA”], at p. 6-2 and Appx. I at p. 7 (“The selection and design of a tailings disposal site is site specific and depend on factors

such as climate, topography, geology, hydrology, seismicity, economics, and environmental and human safety.”.)]

[Figure 1. Map of PLP Tailings Storage Facility Options included in submission here]

Of particular significance, from the 26 TSF options analyzed by PLP, two options were elevated by the Army Corps as alternatives to analyze in the EIS—NFK North and NFK East—as were all 7 alternative water management ponds. [Final EIS, Appx. B Figures B-3 and B-4.]

[Figure 2. Map of PLP Water Management Pond Alternatives included in submission here]

Finally, NDM and PLP frequently tout the undiscovered mineral potential of its claim block as a potential for future mining operations. PLP holds 1,840 mineral claims in a contiguous block covering approximately 274 square miles at the headwaters of Bristol Bay. [NDM, Second Quarter Financial Report for the period ending June 30, 2022 (filed with the SEC Aug. 16, 2022), available at: https://www.sec.gov/Archives/edgar/data/0001164771/000165495422011412/ndm_6k.htm.]

Within those claims, the companies describe a resource estimate at the Pebble deposit as 6.5 billion metric tons measured and indicated and 4.5 billion metric tons inferred.

[<https://www.northerndynastyminerals.com/pebble-project/project-overview/>] In defining its 11.0 billion metric ton deposit, the companies refer 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. [<https://www.northerndynastyminerals.com/pebble-project/geology-and-exploration/>] Indeed, 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.” [Id.]

Illustrating the incomplete delineated nature of the Pebble deposit, maps and cross sections of the deposit area published by NDM show that the deposit delineation is “open” in the north, south, and east and to varying depths below -4,000 feet.

[Figure 3. Map of the Pebble Deposit Delineation included in submission here] [See, <https://northerndynastyminerals.com/pebble-project/geology-and-exploration/> (with NDM noting that this figure “Shows copper equivalent grades, drill holes used in resource estimate (solid black) and expansion potential.”).]

[Figure 4. Cross Section of the Pebble Deposit Delineation included in submission here] [See, <https://northerndynastyminerals.com/pebble-project/geology-and-exploration/> (with NDM noting that this figure is “the Pebble deposit (as currently known), mineralization extends to depths of up to 6,000 feet.”).]

In addition to the Pebble deposit itself, NDM describes 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.” [Id.] 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. [Id.]

These 12 additional mineralized areas located on 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. [Technical Report NI 43-101, NDM, 2018 Technical Report on the Pebble Project, Southwest Alaska, USA (issue date Feb. 22, 2018), p. 65-68, available at <https://www.sedar.com/DisplayProfile.do?lang=EN&issuerType=03&issuerNo=00003151>. See also <https://www.northerndynastyminerals.com/pebble-project/maps-and-figures/>.]

[Figure 5. Map of Northern Dynasty Minerals, Pebble Deposit Geology and Exploration - 12 Mineralized Areas included in submission here]

Details pertaining to these other mineralized areas—demonstrating the pyritic nature of these areas—are found in USGS publications, [USGS, Alaska Resource Data File, <https://www.usgs.gov/centers/alaska-science-center/science/alaska-resource-data-file>.] PLP's Environmental Baseline Document (EBD), the 2021 PEA, the 2011 PEA, and other technical reports NDM has filed with the Canadian Securities. To summarize these descriptions:

[Table 5. Comparison Chart of Mineralized Areas Identified in PLP Claim Block included in submission here] [2021 PEA Table 10-1. See also, Pebble Project Environmental Baseline Document 2004 through 2008 Chapter 3. Geology and Mineralization Bristol Bay Drainages, prepared by Knight Piésold Ltd. [hereinafter "EBD Ch. 3], at Figure 3-2b.] [EBD Ch. 3, at p. 3-10.] [2021 PEA, at p. 77.] [EBD Ch. 3, at p. 3-10. See also, Technical Report on the 2009 Program and Update on Mineral Resources and Metallurgy Pebble Copper-Gold-Molybdenum Project, prepared for NDM Ltd. by Gaunt, J.D. et al., at p. 33 and Figure 9.2, available at:

<https://www.sedar.com/DisplayCompanyDocuments.do?lang=EN&issuerNo=00003151> (filed March 18, 2010).] [2021 PEA, at p. 77.] [EBD Ch. 3, at p. 3-10 to 11.] [Technical Report on the 2009 Program and Update on Mineral Resources and Metallurgy Pebble Copper-Gold- Molybdenum Project, prepared for NDM Ltd. by Gaunt, J.D. et al., at p. 33, available at:

<https://www.sedar.com/DisplayCompanyDocuments.do?lang=EN&issuerNo=00003151> (filed March 18, 2010).] [EBD Ch. 3, at p. 3-11 to 12.] [EBD Ch. 3, at p. 3-11. See also, NDM, Pebble Porphyry Gold-Copper-Molybdenum Project 2004 Exploration Program (March 31, 2005), pp. 46-47, available at:

<https://www.sedar.com/DisplayCompanyDocuments.do?lang=EN&issuerNo=00003151>(filed April 4, 2005).] [EBD Ch. 3, a p. 3-11. See also, NDM, 2003 Summary Report on the Pebble Porphyry Gold-Copper- Molybdenum Project (May 31, 2004), pp. 35-36, available at:

<https://www.sedar.com/DisplayCompanyDocuments.do?lang=EN&issuerNo=00003151> (June 30, 2004).] [EBD Ch. 3, at p. 3-11.] [EBD Ch. 3, at p. 3-12.]

As evidenced by statements from NDM and PLP, the companies have long-term plans to continue to assess the mineral potential of these exploration prospects. In its most recent corporate presentation to investors, NDM notes the “good potential for a cluster of deposits to occur in the vicinity of Pebble.” [Northern Dynasty Minerals Ltd. Corporate Presentation (June 16, 2022), p. 22, available at: https://northerndynastyminerals.com/site/assets/files/4617/ndm_presentation_june_16_2022-web.pdf.] And as NDM’s President & CEO plainly stated to investors during the permitting process regarding these potential deposits, “when you build the infrastructure in there and you’ve got a concentrator you can feed it forever.” [See The Pebble Project, A Pathway to Permitting, Denver Gold Forum, Sept. 2017, The Pebble Partnership, Northern Dynasty Minerals, Ltd., Webcast at 4:36 min., available at <http://www.denvergoldforum.org/dgf17/company-webcast/NDM:CN/>. See also, Pebble Watch—Northern Dynasty CEO predicts Pebble permit within three years (Oct. 6, 2017), <https://pebblewatch.com/northern-dynasty-ceo-predicts-pebble-permit-within-three-years/> (summarizing 2017 Denver Gold Forum presentation).]

EPA Response

See EPA’s response to comment 2.A.2 about how potential future mine expansion was addressed in the FD. EPA agrees with the commenter that public statements from NDM and PLP indicate that they will continue to assess the development potential of the mineral deposits within their mining claims. The prohibition and restriction in the FD do not prevent them from doing so. The FD only affects discharges of dredged and fill material associated with the 2020 Mine Plan to develop the Pebble deposit and future proposals to construct and operate a mine to develop the Pebble deposit within the defined area that would either individually or cumulatively result in adverse effects similar or greater in nature and magnitude as those of the 2020 Mine Plan. See Section 5 of the FD for information on the applicability of the prohibition and restriction.

2.B.18 Bristol Bay Native Corporation (BBNC) (Doc. #0832, Appendix A, pp. 2–16)

A. Nearly Two Decades of Uncertainty, Anxiety, Confusion, and Frustration over the Proposed Pebble Mine; Pre-Application Meetings with EPA and The Army Corps; and PLP’s Initial Mine Plans and State Applications

From 2004 to present, the Pebble Limited Partnership (PLP) and its parent company Northern Dynasty Minerals (NDM) made frequent statements about the company’s intention to soon enter permitting for the mine. The many years of broken promises and living under the threat of permitting created, as Senator Lisa Murkowski noted in 2013 in a letter to PLP, “anxiety, confusion and frustration” throughout the Bristol Bay region. [See Letter from Sen. Lisa Murkowski to PLP (July 1, 2013), available at http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=3b2efb37-cdd2-4203-8568-72c405e2a4e4.] The following are selected comments over time illustrating a pattern of broken promises that has persisted long before EPA’s involvement in Bristol Bay:

- * 2004 – Northern Dynasty Minerals (NDM) announces they expect “completion in 2005 of a Bankable Feasibility Study and permit applications for the construction and operation of a long life, large-scale, open pit gold-copper-molybdenum mine.” [NDM Press Release (Nov. 3, 2004), https://www.sec.gov/Archives/edgar/data/1164771/000116477104000013/ndm6k_110304.htm]
- * 2005 – NDM claims that it will “complete a feasibility study in December 2005 and prepare submissions to apply for environmental permits during 2006.” [NDM Press Release (Nov. 1, 2005), <https://www.sec.gov/Archives/edgar/data/1164771/000116477105000018/ndm6k-110105.htm>]
- * 2007 – PLP targets the “goal of the Partnership is to engineer, permit, construct and operate a modern, long-life mine at the Pebble Project. The partners are targeting completion of a pre-feasibility study in December 2008, a feasibility study by 2011 and commencement of commercial production by 2015.” [NDM Press Release (Oct. 4, 2007), https://www.sec.gov/Archives/edgar/data/1164771/000116477107000008/ndm6k_100407.htm]
- * 2008 – PLP was on “schedule to finalize a proposed development plan in 2009 and, following input from project stakeholders, apply for permits in early 2010.” [NDM Press Release (Oct. 27, 2008), <http://www.northerndynastyminerals.com/ndm/NewsReleases.asp?ReportID=595696>]
- * 2009 – PLP noted they were “completing a Prefeasibility Study and preparing the Pebble Project for permitting in 2010.” [NDM Press Release (March 19, 2009), https://www.sec.gov/Archives/edgar/data/1164771/000116477109000003/ndm6k_031909.htm]
- * 2010 – PLP claims it is “preparing to initiate project permitting under the National Environmental Policy Act (NEPA) in 2011.” [NDM Press Release (Feb. 1, 2010), https://www.sec.gov/Archives/edgar/data/1164771/000116477110000002/ndm6k_020110.htm]
- * 2010 – PLP CEO John Shively tells the Juneau Empire that PLP is likely to start applying for permits in early 2011. [http://juneauempire.com/stories/092410/sta_711593114.shtml#.VjEcCqR43Pw]
- * 2011 – PLP reports that “design process is nearing important milestones and that PLP intends to enter the permitting phase toward the end of 2012.” [NDM Press Release (May 2, 2011), <https://www.sec.gov/Archives/edgar/data/1164771/000106299311001739/exhibit99-1.htm>]
- * 2012 – PLP announces preparing the Pebble project for permitting at the end of 2012. [NDM Press Release (May 15, 2012), <https://www.sec.gov/Archives/edgar/data/1164771/000106299312001783/exhibit99-1.htm>]
- * 2013 – On E & E News, PLP CEO John Shively explains that he hopes “to have a project to take into permitting this year.” [E&E News (June 13, 2013), <http://www.eenews.net/tv/videos/1698/transcript>]
- * 2013 – NDM CEO Ron Thiessen stated to the International Business Times, that “We can permit this mine. There’s no question.” “The heavy lifting is done and we have all of the data.” Thiessen further stated that “Northern Dynasty will have permitting documentation done and ready to file by the first

quarter of 2014” [International Business Times (Nov. 27, 2013), <http://www.ibtimes.com/pebble-mine-executive-says-northern-dynasty-can-manage-giant-alaskan-copper-mine-alone-if-necessary>]

* 2015 – late 2017 – PLP’s website claims they are working toward the goal of submitting our initial project description for permitting” and “we’re only just now preparing to apply for permits” [<http://www.pebblepartnership.com/plan.html>]

* 2017 – NDM CEO Ron Thiessen states that PLP will enter into a new partnership and submit its permit applications by the third quarter of 2017. [NDM Press Conference (May 12, 2017), available at <http://www.northerndynastyminerals.com/site/assets/files/4390/ndm-conf-call-transcript-may-12-2017.pdf>]

From 2004 to 2011, PLP met with the Army Corps, EPA, and the State of Alaska dozens of times to discuss PLP’s proposal. [PD at 2-1 to 2-4.] At these meetings, PLP was informed that review of its plans to develop a hardrock mine in the headwaters of Bristol Bay “would include a public interest review, development of an environmental document in accordance with the National Environmental Policy Act (NEPA), and a review for compliance with the CWA Section 404(b)(1) Guidelines.” [PD at 2-3.] Also during this time, EPA staff reviewed various drafts and iterations of PLP’s Environmental Baseline Documents, study plans, field plans, progress reports and analytical quality assurance plan, as well as forming and joining interdisciplinary teams with the State of Alaska and Army Corps to visit the site and coordinate agency review of important environmental studies for NEPA. [Id.] In December 2011 and January 2012, PLP provided EPA, the Army Corps, State of Alaska, and other resource agencies with its more than 25,000-page Environmental Baseline Document, primarily presenting the results of the baseline studies conducted by NDM and PLP from 2004 to 2008. [PD at page 2-4.]

Despite PLP’s unfulfilled claims of a detailed 404 permit application that never materialized, [To be sure, PLP did file a 404 permit application in 2017. Yet for all the reasons BBNC has detailed in its March and June letters to the Corps, and in the main body of these comments, it is not a good-faith, detailed, permit application.] over the years PLP had indeed submitted mine plans to regulatory agencies for various purposes. [See, e.g., Northern Dynasty Minerals Ltd., Securities Exchange Comm’n Filing (Feb. 24, 2011), available at <https://www.sec.gov/Archives/edgar/data/1164771/000106299311000722/exhibit99-1.htm>; Pebble Project—ADNR Water Rights Applications (2006), available at <http://dnr.alaska.gov/mlw/mining/largemine/pebble/water-right-apps/index.cfm>.] In these submissions, PLP touted several scenarios and stages of mine development, the smallest being a 2.0-billion-ton mine taking 28 years to extract and the largest being a 6.5 billion-ton mine taking 78 years.

In 2006, NDM submitted water rights applications to Alaska Department of Natural Resources (ADNR). NDM applied for water rights permits to Upper Talarik Creek and the Kaktuli River for use in mining operations. In total, NDM applied for rights to approximately 35 billion gallons of groundwater and surface water per year. [PD at page 2-3.] In 2006, NDM also submitted to ADNR an Initial Application for Certificate of Approval to Construct a Dam for two tailings impoundments.

[<http://dnr.alaska.gov/mlw/mining/largemine/pebble/water-right-apps/index.cfm>] Then in February 2011, NDM submitted its preliminary plans for mining the Pebble deposit to the U.S. Securities and

Exchange Commission (SEC). [Northern Dynasty Minerals Ltd., Securities Exchange Comm'n Filing (Feb. 24, 2011), available at

<https://www.sec.gov/Archives/edgar/data/1164771/000106299311000722/exhibit99-1.htm>.] This submission described three stages of mine development at the Pebble deposit: an initial 2-billion-ton mine consisting of 25 years of open pit mining, a 3.8-billion-ton mine consisting of 45 years of open pit mining, and a 6.5-billion-ton mine consisting of 78 years of open pit mining. Ghaffari et al. (2011) also indicate that the total Pebble mineral resource may approach 12 billion tons of ore. [PD at page 2-3.]

As described below, for its BBWA development throughout 2011 to 2014 and in its 404(c) Proposed Determination issued in July 2014, EPA relied on its history of involvement in the Pebble Project since 2004 and PLP/NDM's own applications and plans submitted to the State of Alaska and SEC, as well as PLP/NDM's Environmental Baseline Document published in late 2011 and early 2012. [PD at 2-2 to 2-4.]

In fall 2017, PLP released to the public a new iteration of its proposal for a mine plan. [See PLP Presentation by Tom Collier to the Alaska Resource Development Council, Oct. 5, 2017, at 35 (PLP Current Plan), available at <http://www.akrdc.org/assets/Breakfasts/collier2017.pdf>.] That plan called for a mine footprint (mine pit, tailings facility, and waste pit) of 5.4 square miles, 1.2 square miles larger than the 0.25 scenario that EPA determined could have "unacceptable adverse effects" on the fishery. Then, in December 2017, PLP's 404 permit application described a 1.1 billion ton mine operating with 160,000 tons per day throughput, again larger than EPA's 0.25 scenario. Subsequently, in May 2018, PLP revised its mining plans upwards by 25% to 1.5 billion tons (or nearly six times the size of EPA's 0.25 billion ton scenario), operating with 180,000 tons per day throughput. Nothing in PLP's most-recent and evolving project proposal resolves or addresses the findings of both the BBWA and PD. In fact, as PLP itself notes, its most-recent project proposal remains larger than the EPA 0.25 mine scenario. [Id.]

Furthermore, it is clear PLP simply intends to start with a mine at this scale and then expand by artificially segmenting its project proposal. [See BBNC letter to the Army Corps (June 29, 2018), section III.C.2.] And, 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." [Statement of Tom Collier, PLP CEO, NBC Nightly News, Proposed Pebble Mine in Alaska could threaten world's largest salmon fishery (Feb. 3, 2018), available at <https://www.nbcnews.com/nightly-news/proposed-pebble-mine-alaska-could-threaten-world-s-largest-salmon-n844431>.]

B. Bristol Bay's Concerns about the Proposed Pebble Mine and a Petition to EPA for Protections

Bristol Bay is home to a 130-year-old commercial fishery that supports 14,000 American jobs in Bristol Bay and generates \$500 million in direct income annually. Nationally, the region's commercial fisheries support 15,000 annual jobs, and generates roughly \$2.2 billion in annual economic activity. [McKinley Research Group, The Economic Benefit of Bristol Bay Salmon, p. ES-3, available at:

<https://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf>.] Bristol Bay is also a bucket list destination for hunters and anglers, whose hunting and fishing trips support an additional jobs and add revenue to the region's economy. In 2019, tourism

spending in the Bristol Bay region generated \$155 million in total economic output and 2,300 jobs in Alaska. [EPA 2022 Proposed Determination, p. 6-3.] The people and communities of Bristol Bay economically and culturally depend on, and thus prioritize the stewardship of, Bristol Bay's salmon resource.

In light of the enormous importance of salmon to Bristol Bay communities, PLP's proposals for mining of the Pebble deposit [PLP has submitted mine plans to regulatory agencies for various purposes. See, e.g., Northern Dynasty Minerals Ltd., Securities Exchange Comm'n Filing (Feb. 24, 2011), available at <http://www.sec.gov/Archives/edgar/data/1164771/000106299311000722/0001062993-11-000722-index.htm>; Pebble Project—ADNR Water Rights Applications (2006), available at <http://dnr.alaska.gov/mlw/mining/largemine/pebble/water-right-apps/index.cfm>.] have been of great interest to the people of Bristol Bay since the deposit was first discovered in the late 1980s. After much study and deliberation, the consensus in Bristol Bay is that the proposed Pebble mine would severely undercut the very foundation of Bristol Bay – its incredible salmon resource. That PLP continues to push the mine, especially in light of its oft-repeated yet also ignored statements of deference to the people of Bristol Bay, PLP's proposal causes disruption, uncertainty, and fear throughout the region. Metallic sulfide mining of the Pebble ore deposit has the potential to cause devastating adverse impacts on the area's sensitive salmon habitats and to diminish the salmon resources that serve as the foundation of the region's subsistence way of life, Alaska Native culture, and robust commercial salmon fishing industry.

PLP's repeated promises and failure to file a permit application or otherwise address the concerns of local people over the course of a decade drove BBNC, along with several Alaska Native Tribes and others, to file petitions in 2010 asking EPA to impose § 404(c) protections for Bristol Bay water and salmon resources. [See, e.g., Letter from Jason Metrokin, BBNC to EPA Region 10 (Aug. 12, 2010); Joint Letter from Six Tribes to EPA (May 2, 2010); Letter from Alaska Independent Fishermen' Marketing Association to EPA (May 13, 2010); Letter from Bristol Bay Regional Seafood Devt. Ass'n to EPA (June 20, 2010); Bristol Bay Native Association, A Resolution Requesting the EPA to Invoke Section 404(c) of the Clean Water Act as Appropriate in the Kvichak and Nushagak Drainages of the Bristol Bay Watershed to Protect Habitat and Existing Uses, Res. 2010-32 (Sept. 17, 2010). EPA also received 404(c) requests and letters of support from Ekuik Village Council, Clarks Point Tribal Council, Twin Hills Village Council, Alaska Independent Fishermen's Marketing Association, Bristol Bay Regional Seafood Development Association, National Council of Churches, and numerous other sporting and conservation groups.]

In its initial 404(c) petition letter to EPA, BBNC explained that "risks to Bristol Bay resources from leaching and potential dam failure are something that the people of this region will face long after the proposed mine has stripped the mineral wealth and ceased operating." [Letter from Jason Metrokin, BBNC to EPA Region 10 (Aug. 12, 2010).] Specifically, BBNC was then, and remains today, concerned with "unacceptable risks of irreparable harm to the water quality and the natural and renewable resources" in Bristol Bay from long-term contamination that would be difficult to contain over time and would lead to chronic degradation of salmon habitat. [Id.] Chronic degradation of salmon habitat would

diminish the salmon resources that serve as the foundation of the region's subsistence way of life, Alaska Native culture, and robust commercial salmon fishing industry.

In its petition, BBNC also explained that "an impoundment failure quickly would reach BBNC lands and Bristol Bay itself, and thus be devastating to the people of this region." [Id.] As BBNC said in its petition, proposed Pebble mine development "poses an unacceptable risk to our shareholders, their subsistence-based livelihoods, and the prospects for the future, long-term economic development opportunities for the region." [Id.]

The stress created by this threat, coupled with the uncertainty surrounding a permitting timeline, has exhibited itself in social and economic ways throughout the region. Such fears and uncertainties have been expressed in comments submitted to EPA from BBNC shareholders and regional residents over the years.

The Corps should look to the lengthy administrative record compiled by the EPA, particularly the seventeen public hearing transcripts for the BBWA and 404(c) action to inform its analysis of the public interest. [Transcripts from seventeen EPA public hearings available at: <https://www.regulations.gov/docket?D=EPA-R10-OW-2017-0369> (2017 public hearings in Dillingham and Iliamna); <https://www.regulations.gov/docket?D=EPA-R10-OW-2014-0505> (2014 public hearings in Dillingham, New Stuyahok, Anchorage, Kokhanok, Nondalton, Iliamna, and Igiugig); and <https://www.regulations.gov/docket?D=EPA-HQ-ORD-2012-0276> (2012 public hearings in New Stuyahok, Anchorage, Nondalton, Dillingham, Igiugig, Naknek, Seattle, and Levelock).]

In public testimony taken in 2012, 2014, and 2017 EPA heard repeated comments concerning the hardship already being suffered by Bristol Bay fishermen, residents, and communities due to the uncertainty surrounding the proposed Pebble Mine and the continued threat it poses to the people there. Many commenters urged EPA to act promptly to protect the waters and fishery in Bristol Bay to ensure that fishermen, subsistence users, and residents can move forward with their economic and daily pursuits without the looming threat of large-scale destructive mining operations. Comments also reflected the current and on-going cultural pressures resulting from PLP's activities in the region, the ever-persistent uncertainty engendered by PLP and government inaction regarding the mine, as well as the direct threats of the proposed mine. Comments also discussed concerns over the increased presence of outside visitors, untrustworthy promises of money and jobs, fears of exploitation, and community tensions and fighting. Some examples of this include:

* "[W]e have a right to be afraid of what is happening, because we live in this land We have been in this battle long enough. We want to see something start happening that can assure Alaska native people in this area that our waters, our way of life will continue to be protected." [U.S. EPA Draft Bristol Bay Watershed Assessment Record of Public Comment Meeting – New Stuyahok, Alaska, at 15 (June 7, 2012) [hereafter "New Stuyahok Hearing Transcript"], available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-4154>.]

* “It’s been a decade that the threat of this mine has hung over our heads and for people in my generation investing in the fishery, buying in is a huge leap and financial risk and I see it as one that our fishery will pay back to us as long as we make sure that the habitat remains there.... For a fishery to be successful we need continued investment and for that we need the trust that our government is looking out for us. ... And now we need action. We can’t wait any longer; we can’t let the threat of this hang over us anymore.” [Statement of Katherine Carscallen, Bristol Bay Regional Seafood Development Association, to EPA Administrator Gina McCarthy (Aug. 27, 2013), audio file available at <http://kdlg.org/post/epa-administrator-listens-concerns-about-pebble-mine-during-visit-dillingham> (42:00 to 45:00).]

* “As I stand here in front of you today, my mind isn’t really here. It’s at home with my children that I’ve left for the fourth time this month on Pebble-related causes. It’s on my subsistence net I was supposed to mend. It’s on getting fish ready, the birch trees we were supposed to cut, it’s on my cabin and boat rentals, it’s on my clients I get in seven days for the sport fishing opener. [...] Standing here in front of you today, talking about a mining giant threatening my entire way of life wasn’t what I ever could have planned for . . .” [EPA Bristol Bay Watershed Assessment Public Hearing – Seattle, Washington at 24-25 (May 31, 2012) [hereafter “Seattle Hearing Transcript”], available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-1270>.]

* “Every year my freezer is full of meat, fish and berries from Bristol Bay. I look at this proposed mine as an attempt to take that from me, my children and future grandchildren. I believe with all of my heart that if this mine goes through, this will be the end of our lives as we know it. We will be forced to look to other sources for survival and will be forced to give up a part of our lives that is not just about food, but about a culture and a way of life.” [Public Comment Letter from Sherina R. Ishnook, Assistant Controller, BBNC (June 5, 2012), available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-0580>.]

* “[Y]ou have a lot of people concerned about the future and who knows what the future is.” [New Stuyahok Transcript, at 13.]

* Our food are in jeopardy, our future is in jeopardy. What my mind and heart can fathom is the future of my people We are of the fish people. We are the salmon people.” [U.S. EPA -- Region 10 Bristol Bay Watershed Assessment Public Hearing – Dillingham, Alaska, at 8-9 (June 5, 2012) [hereafter “Dillingham Hearing Transcript”], available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-1290>.]

* “And the thought of my children not being able to pass our way of life to their children makes my heart hurt. I come to you today for my children and my grandchildren’s way of life to continue to be passed on to the future generations. Please protect our water.” [Dillingham Hearing Transcript, at 86.]

* “Please help us, it would be the biggest mine in the world. It hurts me deeply, I have actually cried that our home might be destroyed and I want to save our fish and wildlife. I want my grandchildren to be able to fish like I did. I want to be using my fish camp and living off the fish and subsistence every

traditional way. I've lived this way my whole life and I'm 77 years old. I don't like people being against each other over this mine." [Nondalton Hearing Transcript, at 7.]

* "Nondalton has already been heavily impacted by the mining exploration in the area. In the last six years, there has been a steady increase in visitors to the village, including scientists, researchers, reporters, mining companies, anti and pro Pebble people. . . . There is an increased level of stress . . . The survival of our culture directly depends on the health of our land, the fish and the wildlife." [U.S. EPA Draft Bristol Bay Watershed Assessment Record of Public Comment Meeting – Nondalton Alaska at 1 (June 7, 2012) [hereafter "Nondalton Hearing Transcript"], available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-4830>.]

* "Any perception amongst salmon consumers that a toxin producing industrial mining complex is operating in the heart of our fishery will damage our marketability ... Acting proactively will also protect the mining industry by providing certainty of what standards would need to be met for any mineral development to occur." [Letter from Lindsay Bloom, F/V Rainy Day, to EPA, Docket No. EPA-HQ-ORD-2012-0276 (July 17, 2012), available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-2691>.]

* "My biggest concern is the future of the fishery. We need clear water here ... So I think my biggest concern is the future of the fishery. If that mine is developed up there, I think it's going to be -- it's going to be terrible on the water....[T]he salmon and the commercial fishery provides us with the cash, cash that we need for other products, ammunition, flour, and all the other things we need for to exist out here." [Testimony of Hjalmar "Ofi" Olson, former Chairman of the Board, President and CEO of BBNC and commercial fisher, Hearing Transcript from EPA Meeting, Dillingham, Alaska (June 5, 2012), at 16-17, available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-1290>.]

* "We have been in this battle long enough. We want to see something start happening that can assure Alaska native people in this area that our waters, our way of life will continue to be protected." [Testimony of Joe Chythlook, BBNC Chairman of the Board, Hearing Transcript from EPA Meeting, New Stuyahok, Alaska (June 7, 2012), at 15, available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-4154>.]

* "Our village, through the help of BBEDC grants will be implementing and will be utilizing a fish processing plant that will employ up to 22 local residents with the potential for growth. This employment will help us to become a more sustainable community. For how long? It is detrimental to our way of life to hang on to the ingenuity of the proposed Pebble project." [U.S. EPA Draft Bristol Bay Watershed Assessment Record of Public Comment Meeting – Levelock, Alaska, at 2 (June 6, 2013) [hereafter "Levelock Hearing Transcript"], available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-4037>.]

* "On the average, we do 160 million pounds of fish a year. If you do that [mine], you might as well shut down our plant in Naknek. I've talked to our buyers and if the mine goes through and pollutes the water

in front of Levelock, and that water goes down to the Kvichak and taints the fish, our market are done.” [Levelock Hearing Transcript, at 13-14.]

* “As the prospect of a mine becomes more real, major uncertainty will be created throughout the fishery, from production through consumption.” [Statement of Robert Waldrop, Executive Director, Bristol Bay Regional Seafood Development Association (July 11, 2012) available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-4525>.]

* “[T]he perception that these salmon are tainted food sources is all that it will take to drive prices down to a point where the industry will not survive. 15,000 jobs and hundreds of millions of dollars annually are at stake. My job is at stake. A way of life is at stake. The largest reason the community is here is at stake. The quality of the water is at stake. It is not worth the risk.” [U.S. EPA Draft Bristol Bay Watershed Assessment Record of Public Comment Meeting – Naknek, Alaska, at 11-12 (June 5, 2012) [hereafter “Naknek Hearing Transcript”], available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-4153>.]

* “The subject of Pebble is raised by concerned anglers in every conversation I have about the Bristol Bay fishery [D]evelopment of Pebble will put the sport fishing industry of the Bristol Bay region into a recession of long-term duration. It is unlikely my business nor more sport fishing businesses would survive. Development of Pebble would be the destruction of our Bristol Bay ‘brand’ of clean water and sustainable wild salmon.” [Public Comment Letter from Mark Rutherford, Owner, Wild River Guides Co. (May 31, 2012), available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-1353>.]

* “[N]o amount of money can replace the many different kinds of fish we enjoy or the experience of a first job in the commercial fishing industry.” [Public Comment Letter from Helen Gregorio, Togiak Resident (June 4, 2012), available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-0594>.]

* “As a member of a local fishing crew I fear for my fishing livelihood...” [Public Comment Letter from Robert Massengale, Fisherman and Dillingham Resident (June 24, 2012),

Available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2012-0276-1244>.]

C. EPA’S Watershed Assessment and 2014 Proposed Determination

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 the EPA to exercise its authority under CWA Section 404(c) to protect Bristol Bay salmon resources. [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.] In response, EPA undertook a three year long peer review process culminating in the publication of the 2014 BBWA. Shortly thereafter, EPA notified PLP that it intended to use its 404(c) authority due to the risk of unacceptable adverse effects to Bristol Bay’s fishery resources.

As described in detail below, EPA Region 10 had a solid foundation for its proposed “unacceptable adverse effects” determination under its CWA authority. As analyzed in the BBWA, a large-scale mine at the Pebble deposit, based on PLP’s own baseline data and plans submitted to the State of Alaska and SEC and confirmed in PLP’s 404 permit application plans, 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. [See BBWA, at Chapter 8.]

1. The Bristol Bay Watershed Assessment Provides the Best Available Science Regarding Bristol Bay and the Threats Posed by the Pebble mine

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, and two rounds of peer review, and 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). [See EPA, *An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska* (2014), available at <http://cfpub.epa.gov/ncea/bristolbay/recordisplay.cfm?deid=253500#Download>.]

EPA’s BBWA describes the Bristol Bay watershed and its outstanding ecological, cultural, and economic importance as well as evaluates the potential impacts of large-scale mining on the resources of Bristol Bay. [BBWA at ES-1.] The BBWA quantified, in a conservative manner, the expected loss of wetlands, streams, lakes, and ponds from the construction and operation of a porphyry copper mine at the Pebble deposit. EPA elected to focus on the Pebble deposit because its size and extensive characterization make it “the most likely site for near-term, large-scale mine development in the region.” [Id. at ES-3 to ES-4.]

To address the uncertainties regarding the size of a mine that might be proposed for construction at the Pebble deposit, EPA analyzed three potential mining scenarios—Pebble 0.25 (250 million tons of ore), Pebble 2.0 (2 billion tons of ore), and Pebble 6.5 (6.5 billion tons of ore) scenario. [The Pebble 2.0 and Pebble 6.5 scenarios were based on potential mine sizes suggested by planning work done by Northern Dynasty Minerals and the Pebble Limited Partnership. Id. at ES-10, 6-1, 6-20. These scenarios represent a realistic range for what might be proposed in a plan to mine the Pebble deposit, based on conventional

mining practices and the expressed intentions of the holders of the rights to mine the Pebble deposit. See generally BBWA, Chapters 4, 6.] EPA acknowledged that the exact details of any final mine proposal would differ from the specific elements of any one of the scenarios analyzed by EPA. However, the scenarios “reflect the general characteristics of mineral deposits in the watershed, modern conventional mining technologies and practices, the scale of mining activity required for economic development of the resource and the infrastructure needed to support large-scale mining.” [Id. at ES-10 to ES-11.] By assessing three separate mine sizes, EPA provided a realistic range of potential impacts based on the resources in the Bristol Bay watershed and the real world consequences of large-scale mining. The following discussion highlights some of the most important factors underlying EPA’s findings.

Location of the Pebble Ore Deposit. The mining claims that encompass the Pebble ore deposit cover roughly 186 square miles [NDM, *The Pebble Project: The Future of U.S. Mining & Metals*, available at http://www.northerndynastyminerals.com/i/pdf/ndm/NDM_FactSheet.pdf.] and straddle the river drainages that serve as the foundation of Bristol Bay’s world-renowned salmon fisheries. This represents a simple and straightforward geographic conflict—the Pebble minerals are lying directly underneath vital salmon spawning, rearing, and migration habitat. As a result, EPA concluded that the ordinary day-to-day operation of a large-scale mine—even without any accidents or catastrophic events—would result in the direct loss of large quantities of habitat important to salmon. [See BBWA at ES-14, 7-19 to 7-28.]

The “mine footprint” is described in the BBWA as the “area covered by the mine pit, waste rock piles, TSFs [tailings storage facilities], groundwater drawdown zone, and plant and ancillary facilities.” [Id. at ES-13.] According to EPA, if the Pebble deposit were to be fully developed at the 0.25 billion tons of ore level, direct impacts from the mine footprint alone would cause 24 miles of streams to be “lost—that is, eliminated, blocked, or dewatered,” including 5 miles “known to provide spawning or rearing habitats for coho salmon, sockeye salmon, Chinook salmon, and Dolly Varden.” [Id.] Reduced or altered stream flows would “reduce the amount and quality of fish habitat” in another 9.3 miles of salmon-bearing streams, [Id.] and stream flow alterations would also eliminate 1,300 acres of off-channel habitats for salmon and other fishes in wetlands, ponds, and lakes. [See id.]

Certainty of Toxic Waste Generation. The Pebble 0.25 scenario reflects the size of a mine associated with “a median-sized porphyry copper deposit of 250 million tons of ore.” [BBWA at 6-20.] The mining of the Pebble deposit at this level will lead to the generation of enormous quantities of acid mine waste and the leaching of copper and other toxic metals from mine tailings and waste rock. According to EPA, the expected scale of mining operations at the Pebble deposit, given the low-grade nature of the ore deposit, “will necessarily produce large amounts of waste material.” [Id. at ES-10.] Indeed, a mine developed at the 0.25 billion tons of ore level would generate an estimated 406 million tons of waste rock containing copper and other heavy metals. [See id. at ES-11 tbl. ES-1.] This amount of waste rock is greater than that produced to date by other Alaska mines: Fort Knox’s total waste rock production, for example, is reported to be 372.5 million tons, Red Dog’s is 157 million, while Greens Creek, Kensington, and Pogo are each reported at 2 million tons or less. [See Levit, Stuart & David Chambers, *Comparison of the*

Pebble mine With Other Alaska Large Hard Rock Mines at 11-12, Table 1 (Center for Science & Public Participation, Feb. 2012).] Moreover, given the low-grade nature of the Pebble ore body [See Letter from Gina McCarthy, EPA Administrator, to John Shively, PLP CEO (Sept. 30, 2013).] and the stated goals of PLP's parent company to expand mine operations for generations, [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.")] EPA was being conservative in utilizing the Pebble 0.25 scenario as it is far smaller than any PLP proposals. [PLP continues to state that the resource includes 6.44 billion tons of measured and indicated resources and 4.46 billion tons of inferred resources. See The Pebble Project, A Pathway to Permitting, Denver Gold Forum, Sept. 25 2017, The Pebble Partnership, Northern Dynasty Minerals, Ltd., at 3, available at <http://wsw.com/webcast/dgf17/ndm.to/presentationDownload.pdf>. PLP's website confirms that this is no small mine, stating "[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" and "[o]ur initial approach is for a 20-25-year mine. We believe it's possible that the project could extend for decades—the Deposit may hold a century's worth of minerals." See The Pebble Partnership Plan, <https://www.pebblepartnership.com/plan.html>.]

The waste rock associated with the Pebble ore body is acid-forming with high copper concentrations in test leachates. [BBWA at ES-15.] The exposure of waste rock to water would lead to leaching of metals and likely would lead to the generation of acid mine drainage. [PD at 4-52; BBWA at 8-3.] With respect to the Pebble deposit, copper is the major contaminant of concern as it is toxic to salmon in low concentrations. This is especially true in the streams near the Pebble deposit because they are low in hardness, and copper toxicity increases as water hardness decreases. [BBWA at 3-27.] According to EPA, "during routine operations," without any system failure or catastrophic event and no matter how effectively the wastewater treatment system was working, water contaminated with copper and other toxic metals "would enter streams" and "water quality would be diminished" through "uncollected runoff and leakage of leachates from the waste rock piles and TSFs." [Id. at ES-15.] Much of this water would contain heavy metals in extremely high concentrations. At Pebble, "[w]aste rocks associated with the ore body are acid-forming with high copper concentrations in test leachates, and would require 2,900- to 52,000-fold dilution to achieve water quality criteria." [Id.] Under the 0.25 scenario, leachate escaping during routine operations would cause death or reduced reproduction of aquatic invertebrates in 13 miles of streams, and since these invertebrates are the "primary food source for juvenile salmon and all life stages of other salmonids," the leachate "would be expected to reduce fish productivity." [Id.]

Acid mine drainage, moreover, can and does persist for many decades at abandoned and inactive mines throughout the nation and typically carries with it soluble metals that are toxic to aquatic life. [See generally U.S. Govt. Accounting Office (GAO), ENVIRONMENTAL LIABILITIES: HARDROCK MINING CLEANUP OPERATIONS (June 14, 2006), available at <http://www.gao.gov/assets/90/82282.pdf>; EPA, Office of Solid Waste, Special Waste Branch, TECHNICAL DOCUMENT: ACID MINE DRAINAGE PREDICTION (1994), available at <http://water.epa.gov/polwaste/nps/upload/amd.pdf>] Acid mine

drainage can accelerate the leaching of heavy metals from surrounding rock and soils, and even in the absence of acidity, arsenic and other metals can leach from tailings and waste rock piles, contaminating adjacent waters and posing a threat to human drinking water resources as well as aquatic organisms. [See, e.g., EPA Website, Abandoned Mine Drainage, http://water.epa.gov/polwaste/nps/acid_mine.cfm.] These types of severe impacts are not just hypothetical. It is well established that hard-rock mines can generate substantial amounts of toxic wastes, and these wastes have had devastating effects on ecological resources and human communities. [See generally U.S. Govt. Accounting Office (GAO), ABANDONED MINES: INFORMATION ON THE NUMBER OF HARDROCK MINES, COST OF CLEANUP, AND VALUE OF FINANCIAL ASSURANCES (2011), available at <http://www.gao.gov/new.items/d11834t.pdf>; GAO, ENVIRONMENTAL LIABILITIES: HARDROCK MINING CLEANING OBLIGATIONS (2006), available at <http://www.gao.gov/assets/90/82282.pdf>; EPA, Office of Solid Waste, Special Waste Branch, TECHNICAL DOCUMENT: ACID MINE DRAINAGE PREDICTION (1994), available at <http://water.epa.gov/polwaste/nps/upload/amd.pdf>] At many abandoned mine sites throughout the American West—including sites far less ecologically sensitive than the area surrounding the Pebble ore deposit—acid mine drainage contaminated with heavy metals has persisted for decades without abatement. [See GAO, ENVIRONMENTAL LIABILITIES, at 2.]

Monitoring and treatment of mine tailings, waste rock, and their associated wastewater would be required on a massive scale long after the cessation of active mining operations and potentially for hundreds to thousands of years, [BBWA at 6-33 (monitoring and management of exposed materials, leachate, and tailings storage facilities would be required for hundreds to thousands of years).] making it virtually certain that a catastrophic failure or accident will eventually occur. Ken Taylor, PLP's Vice-President for Environment has admitted that "[w]e have to think about what it's going to be like out there 10,000 years from now." [PBS Frontline, Alaska Gold (July 24, 2012), transcript available at <http://www.pbs.org/wgbh/pages/frontline/environment/alaska-gold/transcript-26/>.] Similarly, a consultant for PLP has acknowledged that the timeframe for "concern" for mine waste could be on the order of 10,000 years. [See The Keystone Center, Panels on Geology and Geochemistry & Hydrology and Water Quality (Oct. 2-4, 2012), video available at <https://www.youtube.com/watch?v=T9tD35mqab8>.] Indeed, it is widely recognized that hard-rock metallic sulfide mines require ongoing maintenance and water treatment. [See EPA, Identification of Priority Classes of Facilities for Development of CERCLA Section 108(b) Financial Responsibility Requirements, 74 Fed. Reg. 37,213, at 37,214-17 (July 28, 2009).]

PLP's current plans suggest that treatment in perpetuity may not be needed of the pyritic tailings facility and, according to their most recent plan, pyritic tailings will be returned to the open pit and stored below water. PLP claims that this eliminates the need for perpetual maintenance and water treatment. Given the uncertain technology and PLP's history of misstatements, the Corps must analyze this. For example, this plan is premised on PLP closing the open pit after 20 years, something that seems unlikely as the company simultaneously claims that the mine will operate for "generations" and upwards of 200 years. [<https://www.pebblepartnership.com/plan.html>. See also, Statement of Ron Thiessen, Vancouver Resource Investment Conference (Jan 22, 2018) video available at,

https://www.youtube.com/watch?v=pBs1dnP_9eo.] If PLP does not close the open pit for more than 200 years, where will the pyritic tails be stored in the meantime and how will effluent from these tails be treated? After 200 years, how will the water level in the open pit be maintained so that discharging will not be required? Once the level of the pit lake has risen to about 890 feet elevation, water will have to be pumped from the pit, treated as required, and discharged to the environment. Additionally, PLP only says that perpetual treatment of the pyritic facility will be eliminated; [Memo from James Fuego, PLP, to Shane McCoy, USACE (May 11, 2018), Technical Note on Updates to PLP's Proposed Project, pp. 2-3, available at

https://pebbleprojecteis.com/files/05_11_2018_Pebble_Project_Updates_to_Proposed_Project.pdf]

however, the Corps should look at whether other project components such as the main water management pond will continue discharging after closure.

Mining the Pebble deposit is also likely to result in further releases of copper and heavy metal contamination because mine tailings would have to be contained over long periods of time, during which a variety of system failures and catastrophic events could be expected to occur. In the BBWA, EPA explains that “[a] variety of water collection and treatment failures are possible, ranging from operational failures that result in short term releases of untreated or partially treated leachates to long-term failures to operate water collection and treatment systems in perpetuity. A reasonable but severe failure scenario would involve a complete loss of water treatment and release of average untreated wastewater flows into average dilution flows.” [BBWA at ES-16.] If just this moderate failure of the wastewater treatment system occurred in the Pebble 0.25 scenario, it would be sufficient to cause “direct effects” on salmon in 17 miles of streams, and the aquatic invertebrates that salmon feed on would be “killed or their reproduction reduced” in 48 to 62 miles of streams. [Id.] Similar adverse impacts on salmon could also occur through the overfilling of a tailings storage facility and spillage of contaminated water overflow during heavy rains. [See id.]

The failure of a tailings storage facility dam would result in serious adverse effects on salmon. [See generally id. at ES-17 to ES-24.] For instance, a failure of the dam at TSF 1 (which is included in all three of the BBWA scenarios) would “result in a flood of tailings slurry into the North Fork Koktuli River,” “scour the valley and deposit many meters of tailings fines in a sediment wedge across the entire valley,” “bury salmon habitat ... along nearly the entire length” of the river below the dam, “cause serious habitat degradation in the mainstem Koktuli River and downstream into the Mulchatna River,” and cause “[n]ear-complete loss of North Fork Koktuli River fish populations downstream of the TSF” plus additional salmon and other fish population losses in the mainstem Koktuli, Nushagak, and Mulchatna Rivers. [Id. at ES-23 to ES-24.]

Impossibility of Effective Mitigation. The BBWA establishes that many of the adverse impacts associated with the development of a large-scale mine at the Pebble deposit could not be adequately mitigated. [BBWA App. J. An article co-authored by one of BBNC's outside counsel undertook a similar analysis of potential compensatory mitigation measures for large-scale hardrock mining in Bristol Bay, evaluated them against the requirements of the Mitigation Rule and reached a similar conclusion. See Yocom, Thomas G. & Rebecca L. Bernard, Mitigation of Wetland Impacts from Large-Scale Hardrock Mining in

Bristol Bay Watersheds, Seattle J. Env't'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.”).] 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. [40 C.F.R. § 230.91(c).] Where impacts cannot be avoided or minimized, appropriate and practicable compensatory mitigation must be provided as required by the 404(b)(1) Guidelines. [Id. § 230.10(d); 40 C.F.R. § 230.91(c)(3).] The Mitigation Rule 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. [Id. 230.93(b).]

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. [BBWA, App. J at 11.]

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 [Id. §§ 230.93(b)(2); 230.93(b)(3).] – 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. [Id., App. J at 11, 13.] 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. [Id., App. J at 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 Kaktuli, South Fork Kaktuli, and Upper Talarik Creek watersheds. Id. at 9.] In addition, all of the permittee-responsible compensatory mitigation measures that have been suggested by PLP in its response to EPA’s 15-day letter [Letter from Tom Collier, PLP CEO, to Dennis McLerran, Region 10 Administrator, EPA (April 29, 2014), available at https://web.archive.org/web/20170216214136/http://www.northerndynastyminerals.com/ndm/EPA_BBWA.asp.] – 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. [BBWA, App. J at 13-32.] Finally, 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. [Id., App. J at 33.]

Looking outside of the affected watersheds, the potential mitigation measures that have been suggested by PLP in its response to EPA's 15-day letter – measures such as restoring old mine sites or constructing hatcheries – are problematic for various reasons and are not available at the necessary scale. [Id., App. J at 33-36.]

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. [Yocom & Bernard, supra note 249, at 22.]

EPA Response

In response to part A of the comment, EPA agrees that the project sponsors repeatedly indicated that they would initiate the permitting process but did not follow through with submitting permit applications. The timeline of key events in Section 2.2.1 of the FD is intended to summarize events over a 25-year period and does not address the numerous public statements the project sponsors made concerning when they would initiate permitting.

In response to part B of the comment, EPA agrees that transcripts from the public hearings it held in Bristol Bay communities in 2012, 2014, 2017, and 2022 consistently indicate a high level of concern about the potential impacts of mining the Pebble deposit. EPA also agrees that, in 2010, six Bristol Bay Tribes petitioned the agency to initiate a CWA Section 404(c) process. As discussed in Section 2.2.1 of the FD, this petition was supported by requests from additional regional stakeholders. Other stakeholders urged EPA to refrain from initiating a CWA Section 404(c) action.

In response to part C of the comment, EPA agrees with the general statements about preparation of the BBA. These topics are addressed in Section 2.2.1 of the FD. Sections 2.1.1 and 2.1.2 of the FD address the Pebble deposit itself and the 2020 Mine Plan described in the FEIS. Sections 4 and 6 of the FD address the potential for surface and groundwater impacts of the 2020 Mine Plan. EPA also agrees that limited restoration opportunities exist in the project area that would serve to offset the proposed aquatic resource impacts. Appendix C of the FD contains a technical evaluation of potential compensatory mitigation measures.

2.B.19 Bristol Bay Native Corporation (BBNC) (Doc. #0832, Appendix A, pp. 16–17)

2. EPA's Intent to Issue Notice of a Proposed Determination and Unacceptable Adverse Effects Finding

EPA released the final draft of the Bristol Bay Watershed Assessment on January 14, 2014.[79 Fed. Reg. 3,369 (Jan. 21, 2014).] With the release of the final BBWA, EPA also released two new documents related to the Peer Review of the BBWA, EPA's Response to Peer Review Comments and Peer Review Follow-on Comments on the second BBA draft.

[\[https://cfpub.epa.gov/ncea/bristolbay/recordisplay.cfm?deid=253500#Download\]](https://cfpub.epa.gov/ncea/bristolbay/recordisplay.cfm?deid=253500#Download) These documents detail very closely how EPA addressed all independent peer reviewer comments when finalizing the BBWA. In March 2014, EPA also released its responses to public comments on both drafts of the BBWA, closely detailing how the agency addressed the public's, and PLP's, concerns in the BBWA. [Id.]

After internal review and deliberation, on February 28, 2014, EPA announced that it was taking the first step to initiate its 404(c) action by issuing a 15-day letter to PLP, the Corps, and the State of Alaska (as landowner). [EPA Press Release, EPA moves to protect Bristol Bay fishery from Pebble mine (Feb. 28, 2014), https://yosemite.epa.gov/opa/admpress.nsf/names/r10_2014-2-28_bristol_bay.] In its announcement, EPA noted that “[t]his action, requested by EPA Administrator Gina McCarthy, reflects the unique nature of the Bristol Bay watershed as one of the world’s last prolific wild salmon resources and the threat posed by the Pebble deposit, a mine unprecedented in scope and scale.” On that day, Region 10 Regional Administrator Dennis McLerran sent letters to PLP, the Corps, and the State of Alaska noting that “[b]ased on the input that the EPA receives during [404(c) steps], the Agency could decide that further review under Section 404(c) is not necessary” and prompted PLP to engage in early consultation with EPA, the Army Corps, and the State by submitting “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.” [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).] Region 10 noted that it was taking the step to “review potential adverse environmental effects” of mining the Pebble deposit because “it has reason to believe that porphyry copper mining of the scale contemplated at the Pebble deposit would result in significant and unacceptable adverse effects to important fishery areas in the watershed.” [Id.] EPA provided PLP until April 29, 2014 to respond. [Letter from Dennis McLerran, EPA Region 10 Regional Administrator, to Tom Collier, PLP CEO (March 13, 2014).]

Following its proposed “unacceptable adverse effects” finding, EPA afforded PLP and the State of Alaska (as landowner) with 60 days to submit information, for the record, to demonstrate either that no unacceptable adverse effects on aquatic resources would result from discharges associated with mining the Pebble deposit or that actions could be taken to prevent such unacceptable adverse effects. [PD at 2-11.] After carefully considering responses from PLP, the Corps, and others, including nearly 1,500 pages of information and comments from PLP, EPA Region 10 was not satisfied that no unacceptable adverse effect could occur and took the next step under the 404(c) regulations to issue a Proposed Determination. [PD at 2-14.]

On July 18, 2014, EPA announced and made available its 404(c) Proposed Determination for the Pebble Deposit in Bristol Bay, Alaska, holding a 60-day comment period and public hearings and tribal consultations throughout the region.

[\[https://archive.epa.gov/epapages/newsroom_archive/newsreleases/b52a95f5b3adefc185257d1900056758.html\]](https://archive.epa.gov/epapages/newsroom_archive/newsreleases/b52a95f5b3adefc185257d1900056758.html) EPA’s proposed restrictions were broadly supported by the public – 99% of the more than 670,000 comments EPA received on the Proposed Determination supported the agency’s proposal. In

the seven public hearings held throughout Alaska on the Proposed Determination, more than 75% of Alaskans supported the agency's proposal, a number that grows to 82% when considering the Bristol Bay region alone.

EPA Response

EPA agrees with the commenter's statements about the 2014 PD. Information about the 2014 PD is found in Section 2.2.1 of the FD. The 2014 PD itself is available at <https://www.epa.gov/bristolbay/bristol-bay-404c-timeline>.

2.B.20 Bristol Bay Native Corporation (BBNC) (Doc. #0832, Appendix A, pp. 17–18)

3. EPA's 2014 Proposed Determination Technical and Scientific Findings

In its 404(c) Proposed Determination (2014 PD) for mining the Pebble deposit, EPA Region 10 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 stage mine at the Pebble deposit." [PD at ES-6, 5-1.] EPA Region 10 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. [PD at ES-6, 5-1.]

These restrictions were supported by the record and broadly supported by the public – 99% of the more than 670,000 comments EPA received on the 2014 PD supported the agency's proposal. In addition, in the seven public hearings held throughout Alaska on the 2014 PD, more than 75% of Alaskans supported the agency's proposal, a number that grows to 82% when considering the Bristol Bay region alone.

EPA Response

The commenter correctly identifies the proposed restrictions in the 2014 PD. As the commenter referenced, those proposed restrictions were derived from the estimated impacts resulting from the discharge of dredged or fill material associated with construction and routine operation of a 0.25-stage mine at the Pebble deposit, as evaluated in the BBA. As explained in Section 5 of the FD, the prohibition and restriction

contained therein are derived from the aquatic resource impacts associated with construction and routine operation of the mine at the Pebble deposit described in the 2020 Mine Plan.

2.B.21 Bristol Bay Native Corporation (BBNC) (Doc. #0832, Appendix A, pp. 18–19)

4. EPA Keeps the 2014 Proposed Determination in Place; Public Support Continues for Final EPA Action

In summer 2017, following litigation from PLP and a settlement agreement with EPA, EPA undertook a public process regarding whether or not to withdraw the 2014 PD. 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. Of the 120 people who testified in the two public hearings in Dillingham and Iliamna, more than 85% of them supported keeping the Proposed Determination in place and opposed EPA’s proposal to withdraw

the Proposed Determination. EPA heard strong testimony about the cultural and economic uncertainty the people in the region are facing if the agency withdraws its Proposed Determination.

EPA received more than one million public comments in fall 2017, more than 99.9% of which supported keeping the agency’s Proposed Determination in place as PLP was entering the 404 permitting process. In addition, in 2017 Alaskans commented to EPA in record numbers asking the agency to keep protections for Bristol Bay in place.

On January 26, 2018, one month after PLP submitted its 404 permit application to the Army Corps of Engineers, then-EPA Administrator Pruitt announced that, after hearing directly from stakeholders and the people of Alaska, the agency would keep the Proposed Determination 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.”

[\[https://www.epa.gov/newsreleases/epa-administrator-scott-pruitt-suspends-withdrawal-proposed-determination-bristol-bay\]](https://www.epa.gov/newsreleases/epa-administrator-scott-pruitt-suspends-withdrawal-proposed-determination-bristol-bay)

Indeed, over time, support has grown for EPA’s Proposed Determination and for final 404(c) action. Nationally since 2012, more than 2.5 million public comments have been submitted to the agency supporting its efforts to protect Bristol Bay from the proposed Pebble Mine Project.

[Bar Graph of Comments in Support of EPA Action to Protect Bristol Bay included in submission here]

EPA Response

EPA agrees with the commenter’s general characterization of the 2017 proposal to withdraw the 2014 PD and EPA’s suspension of that withdrawal in 2018. These actions are addressed in Section 2.2.1 of the FD.

2.B.22 Alaska Wildlife Alliance (AWA) (Doc. #0836, pp. 1–2)

The EPA’s Proposed Determination would restrict discharges for the construction and routine operation of a mine at the Pebble deposit anywhere in the SFK, NFK, and UTC watersheds that would either individually or collectively result in adverse effects similar or greater in nature and magnitude to those associated with the 2020 U.S. Army Corps of Engineers (USACE) permit application in these watersheds. The USACE denied the permit application due to unavoidable adverse impacts that would result in significant degradation to aquatic resources and determined the project would be contrary to the public interest (USACE 2020). We applaud the agency for acting on this conclusion, as it holds scientific merit.

EPA Response

EPA acknowledges the commenter’s support for basing the prohibition and restriction on the 2020 Mine Plan, which USACE determined would cause significant degradation.

2.B.23 Competitive Enterprise Institute et al. (Doc. #0838, pp. 1–2)

EPA Continues To Needlessly Interfere In The Army Corps’ NEPA Process

We were particularly concerned about EPA’s 2014 Bristol Bay Watershed Assessment (BBWA), both regarding its quality and objectivity as well as its timeliness given that it was conducted before any mine application had been submitted and thus was based on purely hypothetical mine scenarios. The BBWA provided the basis for the original “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,” (2014 Proposed Determination). The 2014 Proposed Determination served as a pre-emptive veto of the project, effectively circumventing the Army Corps’ NEPA process just as it was commencing.

In November of 2018, the Competitive Enterprise Institute filed a Notice of Correction, pursuant to the Information Quality Act, detailing the factual errors in the BBWA. [Competitive Enterprise Institute, “Information Quality Act Request for Correction or Withdrawal Regarding the Bristol Bay Watershed Assessment,” November 14, 2018, https://cei.org/sites/default/files/RFC_20181114_Bristol_Bay.pdf.] The agency delayed responding to this petition and then declared the issue moot with the withdrawal in 2019 of the 2014 Proposed Determination (subsequently vacated by a federal court). However, the BBWA itself was never withdrawn and has continued to be cited by mine critics, and its content provides part of the support for the 2022 Proposed Determination that is the subject of this comment.

Although the 2014 Proposed Determination was made in the absence of any mine permit application, one has since been filed in 2017 and revised in 2020, and thus our previous concern that the BBWA was premature is no longer relevant. However, our other concerns with the factual content of the BBWA, as well as similar ones repeated in subsequent materials relied upon by EPA, remain valid. This includes a bias towards extreme scenarios, selective use of inputs, and failure to acknowledge the full range of mitigation options. [Ibid. at 7-9.] They provide ample reason to oppose the 2022 Proposed Determination.

EPA Response

EPA disagrees with the commenter's contention that the BBA was "based on purely hypothetical mine scenarios." As explained in Section 2.2.1 of the FD, the 2-billion and 6.5-billion mine scenarios that the BBA assessed were based on stages of mine development described in the *Preliminary Assessment of the Pebble Project, Southwest Alaska* (Ghaffari et al. 2011). This report was prepared for NDM and submitted to the Securities and Exchange Commission.

EPA also disagrees with the commenter's suggestion that USACE was "commencing" a NEPA process in 2014. As explained in Section 2.2.1 of the FD, NDM began pre-application engagement with federal and state agencies in 2004 as it prepared to collect environmental baseline information. PLP did not submit a CWA Section 404 permit application for development of the Pebble deposit (as opposed to exploration activities) until December 2017.

Without providing specifics, the commenter states that "materials relied upon by EPA" to prepare the 2022 PD exhibit "a bias towards extreme scenarios, selective use of inputs, and failure to acknowledge the full range of mitigation options." EPA disagrees with these characterizations. As explained in Section 4.2 of the FD, EPA considered the direct and some secondary mine site aquatic resource impacts of the 2020 Mine Plan that PLP proposed, and the FEIS quantified.

As explained in Section 4.3.2 and Appendix C of the FD, EPA considered all mitigation measures identified in the FEIS, which includes all measures that PLP identified and additional measures from a variety of sources. Section 7 of the PD solicited comments "on the potential for mitigation to be successful in reducing the impacts on aquatic resources from discharges of dredged or fill material associated with mining the Pebble deposit." No commenters, including PLP, have identified specific mitigation options that EPA "failed to acknowledge."

2.B.24 Competitive Enterprise Institute et al. (Doc. #0838, p. 2)

Separately, the Army Corps has issued a Final Environmental Impact Statement (FEIS) and rejected the mine permit application in 2020, and the matter is currently subject to the appeals process under NEPA. [U.S. Army Corps of Engineers Press Release, "USACE POD Receives Pebble Mine Appeal Administrative Record," May 27, 2021, <https://www.pod.usace.army.mil/Media/News-Releases/Article/2637978/usace-pod-receives-pebble-mine-appeal-administrative-record/>.] Thus, once again, a flawed EPA Notice of Proposed Determination is circumventing the Army Corps' process.

EPA Response

EPA disagrees with the commenter’s assertion that EPA is “circumventing the Army Corps’ process.” As an initial matter, PLP is appealing the denial of its permit application pursuant to the USACE administrative appeal process found in 33 CFR Part 331. The appeals process is specific to USACE permits and approved jurisdictional determinations. It is not an “appeals process under NEPA,” as suggested by the commenter.

Pursuant to 33 CFR 331.10, the final USACE decision on an appealed action occurs when the appeal is resolved. Contrary to what some commenters have suggested, the initiation of a CWA Section 404(c) action by EPA prior to a final permit decision does not interfere with the USACE appeal process. CWA Section 404(c) allows, and EPA’s CWA Section 404(c) regulations provide for, the initiation of action before a permit application has been submitted, prior to a permit being issued, or after a permit has been issued. The preamble to EPA’s regulations identifies a general preference for exercising its CWA Section 404(c) authority prior to permit issuance and this circumstance is addressed in the regulations of both agencies. Pursuant to 33 CFR 323.6(b), USACE will complete the administrative processing of a permit application while the CWA Section 404(c) procedures are underway. This would include resolution of an appeal. EPA’s implementing regulations for CWA Section 404(c) at 40 CFR 231.3(a)(2) address the circumstance where a permit application is pending, but no permit has been issued (which includes where an appeal of a permit denial is pending).

Additionally, the commenter fails to identify any legal deficiency with the timing of EPA’s CWA Section 404(c) action. As courts have acknowledged,

Section 404 imposes no temporal limit on the Administrator's authority to withdraw the Corps' specification but instead expressly empowers him to prohibit, restrict or withdraw the specification “whenever” he makes a determination that the statutory “unacceptable adverse effect” will result. Mingo Logan Coal Co. v. U.S. E.P.A., 714 F.3d 608, 613 (D.C. Cir. 2013)

2.B.25 SalmonState (Doc. #0858, pp. 1–2)

The factual record and the best available science support the restrictions and prohibitions set forth in the revised PD, and finalizing this proposal is consistent with the purpose and intent of Section 404(c) of the Clean Water Act (“CWA”). The EPA spent years conducting peer reviewed scientific studies and evaluating the potential impacts of mining operations in these watersheds [See, An Assessment of Potential Mining Impacts of Salmon Ecosystems of Bristol Bay, Alaska (“BBWA”), U.S. Environmental Protection Agency, EPA-910-R-14-001ES (2014).], as well as was thoroughly engaged in the NEPA review process for Pebble Limited Partnership’s (“PLP”) “2020 Mine Plan” [“2020 Mine Plan” here is referenced as defined by EPA in the 2022 Proposed Determination.]. The findings of the Watershed Assessment and the EPA’s review of the Pebble 2020 Mine Plan support the preservation of these headwaters of Bristol Bay through a Final Determination under CWA § 404(c).

EPA Response

EPA acknowledges the commenter's support of the prohibition and restriction; these are discussed in Section 5 of the FD.

2.B.26 World Wildlife Fund (WWF) (Doc. #1739, p. 2)

WWF agrees with the EPA's conclusion that given the extensive scientific and regulatory record supporting this designation, it is not necessary to engage in another multi-year National Environmental Protect Act (NEPA) or CWA Section 404 review process for future plans that may propose to discharge dredged or fill material in the area that could result in effects that are similar or greater in nature and magnitude to effects of the 2020 Mine Plan.

EPA Response

EPA acknowledges the commenter's support of the restriction; these are discussed in Section 5 of the FD.

2.B.27 Natural Resources Defense Council (NRDC) (Doc. #1744, p. 1)

In 2020, the Army Corps of Engineers denied the Pebble Mine project, noting that the proposed open-pit, gold and copper mega-mine would cause significant degradation to the water and marine life of Alaska's Bristol Bay. This decision was a promising victory in the fight to save Bristol Bay -- but a temporary one. The mining company and its backers have already appealed the Army Corps' decision and will continue to push to develop its mega-mine.

EPA Response

The commenter is correct that PLP has appealed USACE's denial of its permit application and has publicly stated that it will continue to pursue development of its mining claims.

2.B.28 National Audubon Society (Doc. #1745, p. 1)

The Yup'ik, Dena'ina, and Alutiiq Tribes in the region, as well as scientists and mine opponents, have advocated against Pebble Mine for decades. Last year, the Army Corps of Engineers rejected the Pebble Mine project as it would have "unavoidable adverse impacts to water and marine life."

EPA Response

EPA agrees that USACE denied PLP's permit application in November of 2020.

2.B.29 The Pebble Limited Partnership (PLP) (Doc. #1912, pp. 8–14)**II. Background****A. The Revised Proposed Determination Is the Result of a Long EPA Anti- Pebble Campaign**

Although the Proposed Determination has been “revised,” the new document repeats many of the fundamental flaws of the 2014 version. EPA does not hide that it relies on its previous findings. It admits that it has been studying potential mining of the Pebble Deposit “for nearly two decades,” that the Revised Proposed Determination “is based upon this extensive record of scientific and technical information,” [Id. at ES 1.] and that the Agency “continues to believe” the conclusions it reached in 2014. [See, e.g., id. at ES 9.]

But the 2014 Proposed Determination was corrupted by bias, prejudice, collusion with anti-Pebble opponents, and inadequate scientific support. Ultimately, it reached a predetermined outcome based on a process EPA manipulated. It is thus not surprising that, in the Revised Proposed Determination, EPA reached essentially the same conclusions it did in 2014; both documents reflect the culmination of a years-long campaign within the Agency to kill the Pebble Project. EPA’s blatant bias and wrongdoing from the earlier process is evident throughout the Revised Proposed Determination.

Prior to issuing the 2014 Proposed Determination, EPA Headquarters and Region 10 held countless closed-door political advocacy meetings and shared hundreds of communications with anti-Pebble activists. These contacts were part of a much larger scheme, which began when EPA decided to veto the Pebble Project and to work with these activists to obtain the political cover necessary to defend their decision. As far back as 2009, a Region 10 ecologist, Phil North, who would later become a technical lead for the Bristol Bay Watershed Assessment (“BBWA”), wrote to other EPA officials concerning the agenda for EPA’s annual mining retreat. North wrote: “As you know, I feel that both of these projects [the Chuitna and Pebble mines] merit consideration of a 404C veto.” [Ex. 1, The Cohen Group, Report of An Independent Review of The United States Environmental Protection Agency’s Actions In Connection With Its Evaluation of Potential Mining In Alaska’s Bristol Bay Watershed at 38 (Oct. 6, 2015) (“Cohen Report”).] North’s “presentation outlined his intent to advocate for a preemptive veto before PLP submitted a permit application.” [Staff of H. Comm. on Oversight & Gov’t Reform, 114th Cong., The U.S. Environmental Protection Agency’s Unprecedented 404(c) Action in Bristol Bay, Alaska at 7 (2015) (“House Oversight Report”), <https://republicans-oversight.house.gov/wp-content/uploads/2015/11/2015-11-04-JC-CL-JJ-to-McCarthy-EPA-Bristol-Bay-due-11-181.pdf>.] North then told his colleagues: “We should begin to identify the information needed for a review or [sic] 404(c) and begin to collect that information.” [Id.] Region 10 showed interest in North’s plan, with one EPA employee, Mary Thiesing, suggesting that they “approach it as though there will be a 404(c)...” [Id. at 8.] North and Thiesing were not alone. In sworn testimony, EPA officials testified that multiple leaders within Region 10, including Michael Szerlog, manager of the Aquatic Resources Unit, and Richard Parkin, deputy director of the Office of Ecosystems, Tribal, and Public Affairs, were in favor of invoking 404(c) to block Pebble before the Agency had completed any scientific analysis. [See, e.g., Deposition of Michael Szerlog at 76:23-77:18, Pebble Ltd. P’ship v. EPA, Case No. 3:14-cv-00171-HRH (D. Alaska Apr. 12, 2016) (admitting favoring using 404(c) on Pebble by 2010); Deposition of Phillip North at 91:14-92:2, Pebble Ltd. P’ship v. EPA, Case No. 3:14-cv- 00171-HRH (D. Alaska Mar. 30, 2016) (indicating that Richard Parkin began supporting using 404(c) on Pebble by 2009 or 2010).]

Knowing that 404(c) vetoes were rare and highly politicized, [Cohen Report at 42.] EPA covered up its role in instigating the Section 404(c) process. EPA began by enlisting Jeff Parker, an anti-mine activist and attorney for several Alaska Native Tribes. Both the U.S. House Oversight Committee and EPA's own Office of Inspector General have concluded that in January 2010, North helped Parker draft a petition to EPA, signed by Parker's clients, requesting that the Agency initiate a 404(c) veto of the Pebble Project (the "Tribal Petition"). [House Oversight Report at 9-10; EPA Office of Inspector General, EPA's Bristol Bay Watershed Assessment: Obtainable Records Show EPA Followed Required Procedures Without Bias or Predetermination, but a Possible Misuse of Position Noted, Report No. 16-P-0082 at 15 (Jan. 13, 2016).] On May 21, 2010, Parker sent the Tribal Petition to EPA. EPA has long touted this Tribal Petition as the impetus for its decision to initiate a Section 404(c) veto of the Pebble Project.

At the very same time that North and Parker were drafting the Tribal Petition, EPA officials were crafting the Agency's veto strategy, all with Parker's assistance. In early 2010, before the Tribal Petition or any scientific analysis, EPA started drafting a policy document that outlined its options for a veto (the "Options Paper"). [Cohen Report at App-91 to App-98.] Parker sent several ideas to North and others at EPA as they drafted this paper, several of which were adopted by EPA. [House Oversight Report at 12.] In the end, the Options Paper read: "Region 10's Aquatic Resources Unit (ARU) believes that [the already available] information, as it relates to Bristol Bay and its watersheds, is sufficient to make a 404(c) determination now," and that "[w]aiting to make the determination does not seem necessary or a prudent use of anyone's resources." [Cohen Report at App-93, App-95.] And Richard Parkin admitted that in a Region 10 briefing, he was "viewing [the Options Paper] as a background piece but" in his "pitch" he would be "going right back to a recommendation for option 3" – initiating a preemptive veto. [Id. at 40; H. Comm. on Science, Space & Technology, Hearing - Examining EPA's Predetermined Efforts to Block the Pebble Mine, Part II, 114th Cong., Documents for the Record at 97 (2016) ("Science Committee Documents"), <https://docs.house.gov/meetings/SY/SY00/20160428/104889/HHRG-114-SY00-20160428-SD003.pdf>.] Region 10 reached this conclusion despite there being no permit application and no scientific analysis of the project.

EPA then began to lay the groundwork for a veto. EPA produced a budget document for Fiscal Year 2011, calling for the requisite funds to "[i]nitiate the process and publish a CWA 404(c) 'veto' action for the proposed permit for the Pebble gold mine." [Cohen Report at 45.] It then informed other relevant agencies of its decision. EPA prepared to brief the U.S. Fish and Wildlife Service ("FWS") on its plan. In an internal FWS briefing document, it explained that EPA was seeking their support "when they use Section 404(c) of the Clean Water Act" to "prevent the [Pebble] project from receiving the necessary federal permits to develop a mine in the Nushagak and Kvichak watersheds." [Id. at 44, App-111.]

While EPA had obtained the political cover necessary for a veto by recruiting the help of federal agencies and Parker, it recognized the need for scientific cover as well. Thus, EPA embarked on a campaign to solicit scientific data, policy suggestions, and briefings from other anti-Pebble activists. For example, throughout 2010, Trout Unlimited worked closely with EPA, preparing several briefings and offering the Agency considerable information about 404(c), including information on prior EPA vetoes. [Id. at App-14.] Then, after The Nature Conservancy ("TNC") issued a Bristol Bay Ecological Risk Assessment, EPA

repeatedly requested background, briefings, and more information on the study so it could use it as the basis for the Agency's own analysis. [Id. at App-15 to App-16.] EPA even went so far as to invite several anti-Pebble scientists from TNC to meet with EPA and its contractors to discuss EPA's "own risk assessment," even though the Agency had not yet publicly disclosed its plan to conduct such an assessment. [Id. at App-15.] EPA continues to cite TNC studies in the Revised Proposed Determination. [See, e.g., Revised Proposed Determination at 8-27 (citing TNC-published 2013 study by C. Woll and D. Albert titled, A Preliminary Classification and Mapping of Salmon Ecological Systems in the Nushagak and Kvichak Watersheds, Alaska).]

Armed with all of this material from anti-Pebble sources, EPA sought to minimize its "litigation risk" by launching its own process of "information gathering and analysis...in order to support a decision to formally initiate...404(c)." [Cohen Report at 45, App-103.] Thus, in February 2011, EPA announced its decision to conduct the BBWA to gather the information it would need to justify its veto. To achieve their goal, and because Pebble had not submitted a permit application to USACE, EPA designed three "hypothetical" mine scenarios that used outdated mining practices and then evaluated whether these contrived scenarios would cause adverse environmental impacts.

Designing a flawed analysis was not enough, however. EPA decided it also had put the right BBWA leaders in place. For example, the Agency appointed Richard Parkin to be the "team leader." [House Oversight Report at 5.] Parkin was not an objective and disinterested leader. Indeed, in February 2011, as EPA was rolling out the BBWA, Parkin met with members of an Alaska Native Tribe and admitted to them that "while a 404c determination would be based on science – politics are as big or bigger factor." [Science Committee Documents at 121.]

Parkin and North recruited like-minded authors. For example, Phil Brna, an FWS employee, co-authored a major appendix to the BBWA, despite previously expressing his excitement at the possibility of a Pebble veto, stating: "[t]his [i.e., a decision barring Pebble] is going to happen and it's going to get bloody. I am looking forward to it!" [Cohen Report at 44.] The Revised Proposed Determination cites Brna's work in several places. [See, e.g., Revised Proposed Determination at 8-4.] Likewise, Alan Boraas, who conducted tribal outreach for the BBWA and authored the appendix on Traditional Ecological Knowledge, drafted several anti-Pebble Op-Ed pieces, concluding that "indigenous resistance" would kill the Pebble Project, and reflecting his view that the mine would result in "a few floaters in your salmon streams and a little mercury in your wild salmon." [Cohen Report at 51 n.328 (citing Alan Boraas, Murkowski risks salmon for gold mine, Anchorage Daily News (Dec. 1, 2005)).] The Revised Proposed Determination also cites Boraas's work throughout. [See, e.g., Revised Proposed Determination at 8-4.]

Finally, a draft of the BBWA incorporated and appended two anti-Pebble studies authored by Ann Maest. Maest attended several meetings with key EPA decision-makers on behalf of Pebble project opponents as part of the anti-Pebble campaign. [See Cohen Report at 55 n.355, 55 n.357, App-15, App-17.] EPA relied on her work despite her overt hostility to Pebble. But Maest's work was not just biased, it was unreliable. During the preparation of the BBWA, it became well known that Maest had admitted to submitting inaccurate expert reports in environmental litigation against Chevron in Ecuador beginning

in 2006. See Witness Statement of Ann Maest ¶¶ 4, 9, 11-12, 27, 38-42, *Chevron Corp. v. Donziger*, Case No. 1:11-cv-00691-LAK (S.D.N.Y. filed Apr. 12, 2013); *id.* ¶ 50 (“I disavow any and all findings and conclusions in all my reports and testimony on the Ecuador Project.”). Maest’s wrongdoing in Ecuador was public knowledge when EPA relied on her work, but as public pressure mounted, EPA withdrew formal references to her work from the final BBWA “because accusations of fraud in another matter against Dr. Maest led to questions concerning the potential for fraud in” the studies relied upon by EPA. [EPA, Response to Peer Review Comments on the May 2012 and April 2013 Drafts of An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska at 49-50.]

Throughout this process, EPA communicated hundreds of times with anti-Pebble campaign leaders and scientists to share information, technical studies and other intelligence relevant to EPA’s 404(c) strategy. [Cohen Report at 33-34, App. C.] For example, in April 2012, EPA hosted several anti-mine scientists with the purpose of “coordinat[ing] science research related to the fisheries of Bristol Bay and their relation to the” BBWA. [*Id.* at App-17.]

In July 2014, EPA issued the 2014 Proposed Determination, relying on its conclusions in the final draft of the BBWA to give it the scientific cover it needed to fulfill its purpose of precluding any development of the Pebble Deposit. Despite the fundamental flaws and bias permeating the BBWA and 2014 Proposed Determination, the Revised Proposed Determination continues to tout these documents. The Revised Proposed Determination contains well over 100 citations to the BBWA, and where EPA does not explicitly cite the BBWA, it relies heavily on the same biased studies underlying the 2014 Proposed Determination. Indeed, the majority of the references are identical between the 2014 and Revised Proposed Determinations.

B. Every Independent Review of EPA’s Conduct Has Indicated that EPA Bias Infected the Outcome of the 2014 Proposed Determination

In 2014, Pebble retained Former U.S. Congressman, Senator, and Secretary of Defense William Cohen to conduct an independent review of EPA’s conduct with respect to the preparation of the BBWA and the 2014 Proposed Determination. Secretary Cohen served as both a Republican Congressman and the Secretary of Defense in a Democratic Administration. Thus, Secretary Cohen was selected for this review because of his unimpeachable reputation for independence, impartiality and credibility.

With the assistance of a preeminent law firm, Secretary Cohen launched his independent review. The Cohen team reviewed over 42,500 documents from multiple federal agencies and interviewed more than 60 witnesses, including former EPA employees. [*Id.* at 4-5.] Ultimately, Secretary Cohen issued a comprehensive report totaling 176 pages, including 618 footnotes documenting every factual statement in the report. Based on the conduct outlined above, plus additional evidence, Secretary Cohen concluded that his investigation “raise(s) serious concerns as to whether EPA orchestrated the process to reach a predetermined outcome; had inappropriately close relationships with anti-mine advocates; and was candid about its decision-making process.” [*Id.* at ES 8.] Secretary Cohen further stated that he had “concerns about various statements and actions by EPA suggesting an intent to invoke Section 404(c)

even before it conducted an environmental assessment.” [Id. at 2.] Notwithstanding these findings, EPA has continued to rely on the BBWA and the 2014 Proposed Determination.

Secretary Cohen was not the only reviewer to conclude EPA acted inappropriately. In November 2015, the House Committee on Oversight and Government Reform issued a report following its lengthy investigation of EPA’s conduct. It concluded that blocking the Pebble Project was the goal all along: “EPA planned to halt mining activity in Bristol Bay well before receiving petitions from local tribes that urged EPA to take action. EPA’s claim that it took action under Section 404(c) in response to the tribal petitions is not true.” [House Oversight Report at 5.]

And, in November 2014, after PLP sued EPA alleging the Agency violated the Federal Advisory Committee Act, a statute designed to ensure that special interests do not hijack agency decision-making processes to produce biased studies, the district court in Alaska found that PLP had demonstrated a likelihood of success on its claims and granted PLP a preliminary injunction preventing EPA from taking any further action to veto the project until it adjudicated the merits of the case. [Order, Pebble Ltd. P’ship v. EPA, Case No. 3:14-cv-00171-HRH, Dkt. 90 (D. Alaska Nov. 25, 2014).] Indeed, at every turn, the court indicated its agreement with PLP, for example, denying EPA’s motion to dismiss the case, finding that PLP had sufficiently alleged its claims, including making specific allegations of work by the various alleged advisory committees in drafting memoranda for the EPA, attending meetings that the EPA called and chaired, and providing advice and recommendations to the EPA. [Order, Pebble Ltd. P’ship v. EPA, Case No. 3:14-cv-00171-HRH, Dkt. 128 (D. Alaska June 5, 2015).] Ultimately, EPA was forced to settle the litigation and permit PLP to file its Section 404 permit application.

As this history demonstrates, the Revised Proposed Determination is the fruit of a poisonous tree. In addition to being scientifically and legally flawed for independent reasons, withdrawal of the Revised Proposed Determination is necessary to restore trust in EPA’s scientific decision-making processes.

C. PLP Filed a Permit Application That Complied with Section 404

In December 2017, PLP submitted its Section 404 permit application to USACE for the Pebble Project, which included the mine site at the Pebble Deposit and associated infrastructure including a transportation corridor. In 2018, USACE began the National Environmental Policy Act process for the application. Throughout the process, PLP worked with USACE and other government agencies, including EPA, to refine its application. USACE published a draft Environmental Impact Statement (“EIS”) in March 2019, and, after further collaboration among PLP and the various agencies, including EPA, USACE published its final EIS (“FEIS”) in July 2020. The FEIS concluded that the Pebble Project could be developed without “a measurable impact on fish populations” resulting from the mine. [FEIS at 4.24-1.] The FEIS further found that the Pebble Project would provide numerous benefits to the Bristol Bay region and Alaska as a whole, including short- and long-term employment opportunities, millions of dollars in taxes, and royalty payments to the state government. [Id. at ES 47 to ES 48, 4.3-6 to 4.3-7, 4.3-20.]

A key part of PLP's application was its compensatory mitigation plan ("CMP"). During the permit application process, PLP prepared several versions of the CMP based on changing USACE direction. PLP's final CMP was submitted in November 2020, see ROD Attachment B- 5 (the "November 2020 CMP"), and proposed preservation of a 112,445-acre Kaktuli Conservation Area in the Kaktuli River watershed. This would allow the long-term protection of a large and contiguous ecosystem that contains highly valuable aquatic and upland habitats, including 31,026 acres of aquatic resources within the national importance-designated Kaktuli River watershed. And this preservation plan was in addition to the extensive applicant-proposed mitigation for the Project – over 70 such measures are described in the FEIS. [Id. at Table 5-2.] Despite this, USACE issued its Record of Decision ("ROD") denying PLP's application on November 25, 2020. USACE concluded that "the proposed discharge does not comply with the 404(b)(1) Guidelines" and "the proposed project is contrary to the public interest." [ROD at 2-1.] USACE also concluded that PLP's November 2020 CMP was insufficient under USACE's CWA regulations. [Id. at B2-4.] PLP appealed the permit denial on January 19, 2021, and that appeal is pending before the USACE Pacific Ocean Division.

EPA Response

In response to part A of the comment, EPA disagrees with commenters' various characterizations of EPA's actions as biased, unlawful, or otherwise wrongful. The commenter recognizes that the EPA OIG determined that, in preparing the BBA, EPA followed required procedures without bias or predetermination. EPA also notes that the May 2017 settlement agreement between EPA and PLP stipulates that "EPA may use the Bristol Bay Watershed Assessment without any limitation."

In response to part B of the comment, EPA disagrees with the commenter's assertion that "Every independent review of EPA's conduct has indicated that EPA bias infected the outcome of the 2014 Proposed Determination." The January 2016 OIG report referenced above is an "independent review" that "found no evidence of bias or a predetermined outcome." The OIG's review was initiated in response to congressional inquiries and hotline complaints about potential bias in EPA's actions. It included the review of materials that PLP provided, and testimony given before the House Committee on Science, Space and Technology and the House Committee on Natural Resources. The OIG's findings are consistent with EPA's intent to conduct a public process that accounted for all perspectives and engaged all interested stakeholders to ensure that the resulting document was a valuable scientific resource. In addition to creating and maintaining an open and transparent process, EPA also sought to guarantee that the assessment incorporated high-quality data and that all findings were scientifically sound by conducting an independent, external peer review process.

Section 2.2.1 of the FD discusses the litigation that PLP filed and the May 2017 settlement. The settlement agreement itself is available at: <https://www.epa.gov/bristolbay/bristol-bay-404c-timeline>. EPA disagrees with the commenter's suggestion that the settlement

was necessary for “PLP to file its Section 404 permit application.” The litigation filed by PLP in no way impeded its ability to submit a CWA Section 404 permit application. Only EPA’s work on the 2014 PD was halted by the preliminary injunction. PLP remained free to submit applications for federal and state permits, and the applicable agencies were free to adjudicate them.

EPA disagrees with the commenter’s characterization of the 2022 PD as “the fruit of a poisonous tree.” As an initial matter, EPA’s past CWA Section 404(c) action is a distinct action from EPA’s current CWA Section 404(c) review process; as described above, EPA’s process was free of bias or predetermination. Moreover, although EPA relies on an extensive and well-supported scientific and technical record that spans decades, EPA engaged in a new, open, and transparent CWA 404(c) review process, which, consistent with EPA’s CWA Section 404(c) regulations, included providing multiple opportunities for the applicant, the State of Alaska, USACE, and other owners of record to consult with EPA, as well as a public review and comment period and public hearings.

In response to part C of the comment, EPA agrees with the commenter that USACE denied PLP’s permit application with issuance of its ROD in November of 2020. The ROD articulates USACE’s conclusion that the permit application did not demonstrate compliance with the restrictions on discharge found in the CWA Section 404(b)(1) Guidelines. USACE determined that the proposed discharges would violate 40 CFR 230.10(c) because the mine site aquatic resource impacts would cause significant degradation. As explained in Section 6 of the ROD (USACE 2020b), USACE considered all proposed mitigation measures and determined they were “inadequate to overcome the significant degradation identified in the 404(b)(1) analysis rendering the permit application noncompliant with the 404(b)(1) Guidelines.”

2.B.30 Hazel Nelson (Doc. #2667-15, p. 43)

In releasing the proposed revisions, EPA stated as one of its justifications, the need to avoid another multi-year NEPA and CWA Section 404 Review Process for future mining plans. Thank you for acknowledging this great burden that Pebble has put on the people of Bristol Bay.

EPA Response

EPA acknowledges the commenter’s support for the forward-looking nature of the restriction defined in the FD.

2.B.31 Frances Nelson (Doc. #2667-21, pp. 54–55)

Over the last 17 years, I have given public testimony to state and federal agencies, asking for permanent protection of Bristol Bay from large scale development and the proposed Pebble Mine.

Just a few months after Northern Dynasty came to Bristol Bay and shared their proposal with tribe (unintelligible), New Koliganek Village Council, and Koliganek Natives, Ltd., by a joint resolution - look, I'm shaking - opposing large scale development in Bristol Bay, and the proposed Pebble Mine. New Stuyahok and Ekwok followed soon after, and also filed a joint resolution opposing large scale development in Bristol Bay, and the proposed Pebble Mine.

EPA Response

EPA acknowledges long-standing concerns expressed by many Alaska Natives about large-scale development within the Bristol Bay region, and potential impacts of the proposed Pebble mine. As part of its CWA Section 404(c) process, EPA consulted with tribal governments on the BBA and PD in 2014 and on the revised PD in 2022. Section 2.2.1 and 2.2.2 of the FD discuss consultation with tribal governments and Alaska Native Corporations. Section 6.3 of the FD discusses other tribal concerns, including potential impacts to subsistence activities, traditional ecological knowledge, and environmental justice.

2.B.32 Teresa Capa (Doc. #2662-1, pp. 3-4)

In 2008, I was part of the group that went out and took signatures for the Clean Water Act. I worked for Molly Nelson, whose parents were Nida (phonetic) and Andrew Nelson, living here at the Dillingham at the time. But I was in Anchorage, and so I did that there. And - because I understood the importance of clean water in our area.

I went - I had a college - I started a college as a result of this - transferring my permits to my children, my life because a little more open to other things. And I had to do a paper on Pebble, even though the professor had said, 'If it's a passionate subject, don't do that. Don't do a subject you're passionate about.' That was my first year of college, Pretty unskilled, and he assigned it to me. And so I was studying Anglo American at the time, the big - the big company that had its grip in our region. And I was so, so overwhelmed, I couldn't study. I would just cry, and cry, and cry.

And I look at it today, I look at the State of Alaska, and their stance of not help - helping or protecting our region.

EPA Response

EPA acknowledges that the prospect of development of a mine at the Pebble deposit is of grave concern to some Bristol Bay residents and that concerns about the potential impacts of a mine are heartfelt. As part of its CWA Section 404(c) process, EPA held numerous public hearings in Bristol Bay communities to hear from those who would be most directly affected, both positively and negatively, by development of a mine at the Pebble deposit and restrictions that EPA might put in place. Most testimony within Bristol Bay communities in 2014, 2017, and 2022 expressed concerns about mining impacts and support for restrictions on discharges to waters of the United States imposed pursuant to

CWA Section 404(c). See Section 2.2.2 of the FD and EPA's responses to comments 1.A.1 and 2.B.6.

2.B.33 United Tribes of Bristol Bay (Doc. #2667-43, pp. 101–102)

But the one thing I will add is that someone earlier said that this company is very sneaky, and that they consistently try to disguise this project in different ways, and rebrand it in different ways over time. When we were in the 2020 NEPA process, or the couple years up to the decision in that process, the company while it was applying for a mine plan that was supposed to only mine 15% of the entirety of the ore body, was simultaneously telling its shareholders that it was going to be a generational mine - that they - this was just the beginning. This was just Step One. Please do not make - please make sure that your actions don't just stop Step One, and whatever version that they're pretending to put forth at that time.

EPA Response

EPA agrees that the size of the ore deposit and NDM's and PLP's public statements suggest that mining of the Pebble deposit could continue beyond the 20-year operational phase that the 2020 Mine Plan identified. The FEIS considered an expanded mine scenario as part of the cumulative effects analysis. The expanded mine scenario in the FEIS was based on information from PLP, and the *Pebble Project Preliminary Economic Assessment NI 43-101 Technical Report* (Kalanchey et al. 2021) considered seven potential expansion scenarios. Six of the expansion scenarios were modeled on the expanded mine scenario from the FEIS. The February 2022 IHS Markit report, *Economic contribution assessment of the Proposed Pebble Project to the US national and state economies*, also considered five potential expansion scenarios.

EPA considered the potential for future expansion of a mine but focused its evaluation on the direct and secondary impacts of the 2020 Mine Plan. See Sections 4.3.1.2.1 through 4.3.1.2.4 of the FD for detailed discussions of the predicted aquatic resource impacts from the expanded mine scenario analyzed in the FEIS. As explained in Section 4.3.1.2 of the FD, the expanded mine scenario is not a basis for the FD because it is not part of the 2020 Mine Plan, has not otherwise been proposed, and would require additional and separate permitting.

2.B.34 Les Gara (Doc. #0132, pp. 2–3)

As you know, the Pebble project owners have improperly segmented the project into phases. Both the falsely reduced size of the first segment, and the 800% larger full project violate the law. The first "phases" is dangerous enough, but this also the tip of the Titanic.

The CEO of the foreign mining corporation, Northern Dynasty, which runs the "Pebble Partnership", admitted at a 2019 investor conference that Pebble will be expanded far beyond Phase One's 1.4 billion ton waste ore project - after they get their nose under the tent.

Northern Dynasty's CEO called expansion of the mine after Phase 1 the "whole purpose" of this project at a February, 2019 investor and mining forum in Denver, where they were pitching the project to possible investors. That explains why Northern Dynasty lists the size of the mine with Canadian regulators at 11 billion tons of removed ore and earth, or eight times the size of this first phase project.

That would be the largest toxic open pit mine in North America. I feel this reality should also factor into the decision in this case.

EPA Response

The response to comment 2.B.33 identifies how EPA considered the potential for expansion of a mine at the Pebble deposit.

2.B.35 Pebble Project (Doc. #0817, p. 2)

Blatant Bias- EPA has repeatedly shown it is biased during the development of the BBWA and RPD from the clandestine internal consideration of a strategy to preemptively veto Pebble through the development of the current version of the RPD. Documents disclosed under the Freedom of Information Act show that EPA looked to use Pebble to attempt to expand their authority under Section 404c of the Clean Water Act to implement a preemptive veto. There is also ample evidence to show that EPA officials colluded with Pebble's opposition during the process to develop both the BBWA and original Proposed Determination. Indications of such collusion include:

- * The clear showing that EPA staff and ENGOs facilitated the development of the Tribal petition requesting a 404c veto and worked with the Tribes and their attorney to file the petition;
- * The use of consultants who had publicly opposed the project such as Ann Maest and Alan Boraa despite Pebble's requests that EPA employ more neutral people; and
- * The number of interactions between EPA staff and representatives of and consultants to our opposition during this process.
- * EPA Administrator Michael Regan met with one our wealthy opponents, Gwendolyn Sontheim, to discuss Pebble, but turned down several requests to meet with me, the CEO of the project.

Two examples of this collusion are:

- * The Tribal Governments filed their petition on May 27, 2010, but EPA intentionally concealed the existence of the petition from Pebble and the public. Two months later, we had a meeting with EPA Administrator Lisa Jackson in Anchorage. At that meeting EPA continued to hide the existence of the petition from us. In fact, EPA never informed us of the existence of the petition. We learned of it from an article in the Los Angeles Times.
- * In September of 2013 EPA Administrator Gina McCarthy wrote a letter to me outlining certain issues that Pebble should consider in moving the project forward. That letter was given to someone from our

opposition by a member of EPA Region 10 staff before I received it. We learned that the opposition had the letter from a call from a reporter who had received the letter from our opposition.

These are only a couple of examples of many whereby EPA violated its responsibility to have an open and transparent process. This type of behavior by EPA staff is not only irresponsible, but also reprehensible and shows the clear bias which has pervaded the process from beginning to the current state of affairs.

EPA Response

EPA disagrees with the commenter that EPA actions indicate bias. As recognized by the commenter in an earlier comment (comment 2.B.29), EPA’s OIG determined that, in preparing the BBA, EPA followed required procedures without bias or predetermination. EPA also notes that the May 2017 settlement agreement between EPA and PLP stipulates that “EPA may use the Bristol Bay Watershed Assessment without any limitation.”

EPA previously provided opportunities for comment, including public hearings, on the peer-reviewed BBA and 2014 PD. Those previous documents and comments are part of the administrative record for this action, but the commenter fails to identify specific errors in them or in the 2022 revised PD that resulted from reliance on the BBA or 2014 PD. EPA notes that PLP was provided opportunities to meet directly with EPA on the 2014 PD, the 2022 revised PD, and the FD.

2.B.36 Loren Karro (Doc. #0847, p. 3)

It is important to note that all of the effects of the mine, as described in the Proposed Determination, are based on the amended small mine size described by the Pebble Partnership. It is recognized that the mining to the limited extent they initially propose is not even thought to be commercially feasible. The real intent is to amend the mining application, once approved, to a much larger project, perhaps in stages. This was made blatantly obvious in the now infamous “Pebble Tapes”. The true damage to the area, it’s habitat, it’s resources, and thus to the people who inhabit it and who work and recreate there, is probably greatly understated.

EPA Response

See EPA’s responses to comments 2.A.2. and 2.B.33 regarding how the FD considered the potential for expansion of a mine at the Pebble deposit.

2.B.37 Charles Borbridge (Doc. #2097, p. 2)

The Pebble partnership is not so much a mining concern as it is a financial concern that happens to mine. What it understands, its goals, its perceived pressures are all financial. It must minimize expenses and maximize revenue to maximize profit. This drives the concern. This is why a smaller initial mine must become a larger mine. It must only spend as much as is required to prevent pollution. Long term of forever structures are not even seriously considered. Forward funding the massive financial investment

to pay for a forever monitoring, repair, and replacement of mining structures can never happen. Only enough is pledged to provide a fig leaf to gain project approval.

EPA Response

EPA agrees with the commenter that financial considerations are of great importance to private-sector sponsors of development projects. Projects may be revised, postponed, or cancelled if the sponsor determines that they are not economically feasible. Some regulatory provisions, such as requirements for financial assurances, are put in place specifically so that changing economic circumstances do not lead to environmental harm.

2.C Authority and Justification for Undertaking a Section 404(c) Review

2.C.1 Resource Development Council for Alaska, Inc. (RDC) (Doc. #0130, p. 1-2)

I testify on behalf of RDC to oppose the EPA's notice of Proposed Determination (PD) Pursuant to Section 404(c) CWA for the Pebble Deposit Area that would expand beyond the current proposed project to additional state owned lands in Southwest Alaska. This is consistent with RDC's position on the EPA's attempt in 2014 to preemptively veto the project.

The new PD does not allow the project to be fully evaluated for several reasons. First, the comment period is insufficient to allow a thorough evaluation of the impacts and consequences of EPA's proposed action. The timing of this action now is without explanation. This is a critical time of year for Alaskans when we are out fishing, subsisting and doing field work. At a minimum, and consistent with past agency actions, the comment period should be extended beyond the fishing and subsistence seasons to allow Alaskan stakeholders a reasonable time to review and meaningfully comment. There is no rationale that justifies rushing this process now.

Second, the selected area goes well beyond the project site and has long lasting impacts on state lands. This action is not just a veto of the proposed project, but a preemptive veto for any future development of approximately 309 square miles of state owned lands. The 404(c) process should not be used lightly and RDC disagrees that the expansive area of state-owned lands the EPA seeks to withdraw is adequately justified. The federal government should be able to use the 404(c) process as an end-run around state's rights; and, in particular, the "no more" clause of ANILCA, which was the final federal lands compromise in Alaska.

Further, the PD does not sufficiently justify the "unacceptable adverse effects" necessary to support such action. Rather, the document is full of conclusions and hypotheticals. Statements of mere belief should not be able to justify the magnitude of prohibitions and restrictions the PD would permanently impose on these state-owned lands. For example, the PD inexplicably ignores science-based findings in the 2020

EIS that alternatives presented in that document would not measurably affect the health or value of the Bristol Bay fisheries.

Finally, there is still a process pending before the Army Corps of Engineers and the applicant should be entitled to due process. As in 2014, the PD would preemptively veto the permitting process. Every project, no matter its size or location, should be allowed to go through the permitting process. That process should ultimately determine whether a project moves forward.

EPA Response

With respect to the commenter's concerns related to the length and timing of the comment period, EPA provided a comment period consistent with regulatory requirements at 40 CFR 231.4 and subsequently extended the comment period pursuant to 40 CFR 231.8.

EPA disagrees that its action will "veto" "any future development of approximately 309 square miles" of state-owned land. EPA's action limits USACE's ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with mining the Pebble deposit only. Section 5 of the FD describes the defined area for prohibition and the defined area for restriction, within which EPA's action limits USACE's ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD.

The Agency has authority to act under CWA Section 404(c) "whenever" it makes the required determinations under the statute, including before a permit application has been submitted, at any point during the permitting process, or after a permit has been issued. 33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (D.C. Cir. 2013). Nothing in the CWA or EPA's CWA Section 404(c) regulations precludes EPA from exercising its authority where USACE has denied a permit or is in the process of reviewing an appeal of a permit denial. See Section 2 of the FD for a detailed description of EPA's CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency's rationale for acting now.

Section 404(c) of the CWA provides EPA with independent authority, separate and apart from the USACE permitting process, to review and evaluate potential discharges of dredged or fill material into waters of the United States.

Prior to this action, EPA used its CWA Section 404(c) authority judiciously, having completed only 13 Section 404(c) actions in the 50-year history of the CWA. EPA exercises its CWA Section 404(c) authority on a case-by-case basis based on the specific facts of

each situation consistent with applicable statutory and regulatory requirements. EPA has engaged in an open and transparent CWA Section 404(c) review process. After consideration of an extensive scientific and technical record, as well as the public comments on the PD, EPA determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. EPA's determination of an "unacceptable adverse effect" in this and in every CWA Section 404(c) action necessarily involves a case-by-case determination that accounts for the unique characteristics of the aquatic resource that would be affected by discharges of dredged or fill material. Appendix B, Attachment 1, of the FD addresses FEIS conclusions that appear to be inconsistent with the FD.

To the extent the commenter contends that EPA's use of CWA Section 404(c) violates the Alaska National Interest Lands Conservation Act, EPA disagrees. See EPA's response to comment 2.C.26.

2.C.2 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 26-27)

7. The pre-application portion of the 2022 PD would be a regulation, so EPA should draft it accordingly and use severability clauses and the judicial doctrine of severability.

Regulations are "rules" under the Administrative Procedure Act (APA). The entire APA "is based upon a dichotomy between rule making and adjudication." [See U.S. Attorney General's Manual on the APA (1947) at 13-15 for a full discussion.] The APA defines a "rule" in part as a "statement of ... particular applicability and future effect designed to implement, interpret, or prescribe law or policy." 5 U.S.C. § 551(4).

Of particular importance is the fact that [the definition of] "rule" includes agency statements not only of general applicability but also those *of particular applicability applying either to a class or to a single person*. In either case, they must be of future effect, implementing or prescribing *future law*. Accordingly, the approval of a corporate reorganization by the Securities and Exchange Commission, the prescription of future rates by a single named utility by the Federal Power Commission, and similar agency actions, *though applicable only to named persons, constitute rule making*. [A.G. Manual on the APA at 13 (italics partly original) (citations to legislative history and footnotes omitted).]

Obviously, the pre-application portion of the 2022 PD would not be an adjudication of an application for a permit or a license. Therefore, the pre-application portion is a "rule." See 44 Fed. Reg. 58078-79 (language in 404(c) is identical to language in 404(e) which "clearly involves rulemaking").

Section 5 of the 2022 PD states that it uses four types of limits on adverse effects to restrict future plans to mine the Pebble deposit. 2022 PD at 5-2. EPA should rewrite the operative text of Section 5 to be in the format of a regulation, so that EPA can insert severability clauses and take advantage of the judicial

doctrine of severability that a court should sever any part of a law or regulation found unlawful and allow the remainder to operate whenever possible.

By the same token, EPA can help end this dispute and create stability relying on severability. Whenever the science, facts, precautionary approach, good judgment, and case law permit, stability is more likely achieved if EPA establishes more rather than few prohibitions or restrictions applicable to discharges of future mine plans, so that if one is held to be arbitrary and capricious, others may stand. That will not avoid all legal challenges that are based on the whole of the determination, but that may limit some. Those aspects of a decision that survive legal challenges may yield a stable situation.

EPA Response

With respect to the commenter’s position that any part of EPA’s action is a rulemaking, EPA disagrees.

EPA historically has exercised its authority pursuant to CWA Section 404(c) through informal adjudication. It is well-established that when Congress has not specified a process, the choice between rulemaking and adjudication lies within the informed discretion of the Agency. *Securities & Exchange Comm’n v. Chenery Corp.*, 332 U.S. 194, 203 (1947); see *Nat’l Labor Relations Bd. v. Bell Aerospace Co.*, 416 U.S. 267, 291-295 (1974); *Atochem North America, Inc. v. USEPA*, 759 F. Supp. 861, 868-69 (D.D.C. 1991). See also *Neustar, Inc. v. FCC*, 857 F.3d 886, 893 (D.C. Cir. 2017) (“agencies may use informal adjudications when they are not statutorily required ‘to engage in the notice and comment process’ or to ‘hold proceedings on the record...’”).

EPA’s FD is not a rule. The FD is the disposition of EPA’s fact-intensive inquiry into whether proposed and potential impacts from certain discharges of dredged or fill material into discrete areas containing particular types and quality of aquatic resources with have unacceptable adverse effects. EPA’s FD limits USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material. The FD is an appropriate informal adjudication for this “highly fact-specific context. *Neustar, Inc.* 857 F.3d at 893. It reflects the sort of “case-by-case” review that presents “a straightforward instance of adjudication.” *Nat’l Biodiesel Bd. v. EPA*, 843 F.3d 1010, 1018 (D.C. Cir. 2016); see also *Neustar*, 857 F.3d at 894-95. In addition, the FD has immediate concrete effect. Rules, in contrast, generally do so only after being subsequently applied. See *Providence Yakima Medical Center v. Sebelius*, 611 F.3d 1181, 1188 (9th Cir. 2010).

EPA acknowledges that the statutory language in CWA Section 404(e) requires “notice and an opportunity for a public hearing” and that EPA’s 1979 preamble to the final CWA Section 404(c) regulations stated that “Section 404(e), at least, clearly involves rulemaking” 44 Fed. Reg. 58076, 58078-79 (Oct. 9, 1979) (emphasis added). Neither CWA Section 404(e) nor the 1979 preamble, however, require that a CWA Section 404(c) final

determination take the form of a rulemaking. The statutory language in CWA Section 404(c) does not mandate use of the formal rulemaking process. *See, e.g., James City County, Virginia v. EPA*, 12 F.3d 1330, 1337 n.4 (4th Cir. 1993), *cert. denied*, 513 U.S. 823 (1994) (“[I]t is apparent that the EPA’s determination is not required to be made on the record of a hearing, but rather must be made ‘after notice and opportunity for public hearings’”). Nor is informal rulemaking mandated. EPA’s 1979 preamble expressly does not state that EPA considered CWA Section 404(c) determinations should take the form of a rulemaking. Every CWA Section 404(c) action undertaken by EPA, beginning in 1981, has taken the form of an informal adjudication. Accordingly, since promulgation of the 1979 regulations, EPA has consistently exercised its discretion in favor of using informal adjudication as suited to the fact-intensive, case-by-case nature of CWA Section 404(c) determination. Moreover, the use of rulemaking-type procedures, undertaken consistent with EPA’s CWA Section 404(c) regulations, does not dictate whether an action is a rule or an adjudication or transform an adjudication into a rulemaking.

To the extent that the commenter believes that any part of EPA’s action must be characterized as a rulemaking for severability to apply or that EPA must insert severability clauses to take advantage of the judicial doctrine of severability, EPA disagrees. Severability is based on Agency intent, not on the type of action. *See North Carolina v. FERC*, 730 F.2d 790, 795-96 (D.C. Cir. 1984) (“Whether an administrative agency’s *order* or regulation is severable, permitting a court to affirm it in part and reverse it in part, depends on the issuing agency’s intent.” (emphasis added)). Here, EPA intends that the prohibition and restriction in the FD are distinct and operate independently.

2.C.3 H2T Mine Engineering Services, LLP (Doc. #0270, p. 1, 2)

2. The proposed determination is a political action and is being taken outside of the normal permitting process. It is preemptive and precedent setting. There is an established process for evaluating resource development and other projects in the US and that should be followed.

(...)

3. The land around Pebble was specifically selected by the state of Alaska for its mineral potential. When Alaska became a state, it was granted the opportunity to select 105 million acres for the purpose of helping the young state’s economy. Permanent federal action blocking development of 309 square miles of Alaska’s selected lands is a violation of this agreement.

(...)

5. EPA must grant the state of Alaska a leading role in evaluating the project as it is on Alaska land and removing 309 square miles of Alaska’s land by fiat is a violation of Alaska’s Statehood Compact with the federal government.

Due Process

1. The arguments used against Pebble will become the norm for stopping development as many in the mining industry are already seeing similar arguments at other projects in the U.S.
2. The EPA's actions are inexcusable. The actions are outside the normal permitting process and the agency has allowed politics to interfere with its core regulatory mission.
3. The Proposed Determination should be rejected, and the agency should return to its proper regulatory role.
4. EPA should withdraw the proposed determination (preemptive veto) and allow the established process to play out.
5. Politicizing EPA's role is a very dangerous precedent.

EPA Response

See EPA's response to comment 2.C.1. EPA's decision is based not on politics but on an extensive scientific record and public comment.

With respect to the commenter's position that EPA's CWA Section 404(c) action violates the agreement the federal government made with the State of Alaska when it became a state, EPA disagrees. Nothing in the Alaska Statehood Act precludes the application of duly enacted federal legislation to lands and mineral deposits granted to the State, nor does it serve as a barrier to EPA's use of Section 404(c) of the CWA. The CWA, including CWA Section 404(c), applies to waters of the United States on lands and mineral deposits granted to the State just as they do elsewhere. Please see EPA's response to comment 2.C.17.

While EPA agrees with the commenter's position that the State of Alaska has a role in managing the State's resources, state laws aimed at managing state resources do not supersede, amend, modify, or repeal the CWA or impinge on EPA's CWA Section 404(c) authority.

2.C.4 National Association of Wetland Managers (NAWM) (Doc. #0606, p. 1)

First, NAWM wishes to affirm that the Clean Water Act 404(c) regulations effectively provide careful and thoughtful use of the "veto authority" which allows the U.S. Environmental Protection Agency (EPA) to restrict, prohibit, deny, or withdraw the use of an area as a disposal site for dredged or fill material. EPA has generally taken 404(c) actions in response to unresolved U.S. Army Corps of Engineers (USACE) permit applications, [USEPA (U.S. Environmental Protection Agency). Clean Water Act Section 404(c) "Veto Authority" Factsheet. <https://www.epa.gov/sites/default/files/2016-03/documents/404c.pdf>] and since 1972, EPA has made only 13 final determinations under this authority. Only occasionally does the typical 404 permitting process warrant interruption, and this provision remains an important

measure for those extremely rare instances. NAWM understands the proposed Pebble deposit mine to be a prudent and judicious example of EPA exercising its 404(c) authority and that the agency is doing so within the framework of a diligent, inclusive, and transparent process.

EPA Response

EPA agrees that CWA Section 404(c) is an important provision that authorizes EPA to limit the use of a defined area for discharges of dredged or fill material to prevent unacceptable adverse effects on specific aquatic resources. EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas.

2.C.5 Alaska Miners Association (AMA) (Doc. #0803, p. 3-4)

This preemptive veto also goes further than just the Pebble Project. The EPA is clear in its intent to preclude any activity in the watershed around the Pebble site (these are the watershed boundaries of the North Fork Koktuli, South Fork Koktuli, and Upper Talarik Creek) regardless of action by the USACE. This results in a total of 309 square miles (nearly 200,000 acres) of Alaska's land that will be fully blocked from any development. These lands were specifically selected as part of Alaska's selections authorized when it achieved statehood, an opportunity it was granted to select 105 million acres for the purpose of helping the young state's economy. Permanent federal action blocking development of 309 square miles of Alaska's selected lands is a violation of this agreement, and it is a violation of the "No More" clause of the Alaska National Interest Lands and Conservation Act (ANILCA).

In Alaska, more than 56% of federal lands are set aside as Conservation System Units (CSUs) that are off limits to any extractive resource use or potential development. The Alaska National Interest Lands and Conservation Act (ANILCA) defines CSUs to include "any unit in Alaska of the National Park System, National Wildlife Refuge System, National Wild and Scenic Rivers Systems, National Trails System, National Wilderness Preservation System, or a National Forest Monument" (see ANILCA Sec 102(4)). Millions of acres of state lands are in "protected status" such as State Parks, State Recreation Areas, State Wildlife Sanctuaries and Refuges, and more. In Alaska, over 40% of the state's entire land mass is already in areas that by definition should be considered managed exclusively for Conservation (see table below). This is an area larger than the entire states of California and Washington combined.

When Congress passed ANILCA in 1980, it declared that no more land withdrawals were necessary in Alaska, and placed specific limits on the federal administration's efforts to withdraw additional lands. These are often referred to as ANILCA's "No More" clauses. Congress' intent is stated in ANILCA Section 101(d):

"This Act provides sufficient protection for the national interest in the scenic, natural, cultural and environmental values on the public lands in Alaska, and at the same time provides adequate opportunity

for satisfaction of the economic and social needs of the State of Alaska and its people; accordingly the designation and disposition of the public lands in Alaska pursuant to this Act are found to represent the proper balance between the reservation of national conservation system units and those public lands necessary and appropriate for more intensive use and disposition, and this Congress believes that the need for future legislation designating new conservation system units, new national conservation areas, or new national recreation areas, has been obviate thereby.”

Congress included in ANILCA two very specific restrictions on federal administrative actions:

1. ANILCA Section 1326(a) limits federal administrative authority (e.g., limits size of Antiquities Act withdrawals) to 5,000 acres without Congressional approval; and
2. ANILCA Section 1326(b) prohibits single purpose studies to establish new conservation areas in Alaska.

EPA’s Proposed Determination to block development in the entire watershed is a gross violation of the Congressional intent and statutory requirements associated with ANILCA.

EPA Response

To the extent that the commenter contends that it is the Agency’s “intent to preclude any activity in the watershed around the Pebble site” or that EPA’s action will fully block any development within the defined areas for prohibition or restriction, EPA disagrees. See EPA’s response to comment 2.C.1.

EPA disagrees with the commenter that the lands surrounding the Pebble deposit were specifically selected “as part of Alaska’s selections authorized when it achieved statehood.” EPA also disagrees that EPA’s CWA Section 404(c) action violates the federal government’s agreement with the State and the “No More” clause of the Alaska National Interest Lands and Conservation Act (ANILCA). Nothing in the Alaska Statehood Act or ANILCA precludes the application of duly enacted federal legislation to lands and mineral deposits granted to the State, nor does either law serve as a barrier to EPA’s use of Section 404(c) of the CWA. The CWA, including CWA Section 404(c), applies to waters of the United States on lands and mineral deposits granted to the State just as they do elsewhere. Please see EPA’s responses to comments 2.C.17 and 2.C.26.

2.C.6 Associated General Contractors of Alaska (AGC) (Doc. #0804, p. 1)

The EPA was a full participant in the Environmental Impact Statement (EIS) process for the Pebble Project, and within the process, did not raise objections of this scale. Doing so now, while the U.S. Army Corps of Engineers Record of Decision is in the appeal stage, constitutes a preemptive veto of the project. This action has demonstrated the politicization of our permitting process, and it will continue to chill investment in Alaska resource projects.

EPA Response

See EPA's response to comment 2.C.1. EPA's decision is based not on politics but on an extensive scientific record and public comment.

On December 22, 2017, PLP submitted to USACE a CWA Section 404 permit application for the discharge of dredge and fill material to waters of the United States to develop a mine at the Pebble deposit, as well as associated infrastructure (e.g., ports, roads, and pipelines). On January 5, 2018, USACE issued a public notice that provided PLP's permit application to the public and stated that an EIS would be required as part of its permit review process, consistent with NEPA. USACE also invited relevant federal, state, and local agencies, as well as tribal governments, to be cooperating agencies on the development of this EIS. EPA accepted the USACE invitation and became a NEPA cooperating agency.

On March 29, 2018, USACE published in the Federal Register a Notice of Intent to prepare an EIS and a Notice of Scoping for the Pebble Project. 83 Fed. Reg. 13483, Mar. 29, 2018). On June 29, 2018, EPA Region 10 submitted a comment letter to USACE, pursuant to the White House Council on Environmental Quality (CEQ) NEPA regulations and Section 309 of the Clean Air Act (CAA), that contained recommendations for the EIS in response to the scoping process.

On March 1, 2019, USACE released the Draft EIS (DEIS) for public comment. Also on March 1, 2019, USACE published a public notice soliciting comment on PLP's CWA Section 404 permit application (Public Notice POA-2017-00271). On July 1, 2019, EPA sent a letter to USACE with its comments and recommendations on the DEIS, pursuant to EPA's review responsibilities under the CEQ NEPA regulations and CAA Section 309. On July 1, 2019, EPA sent a separate letter to USACE with comments on the CWA Section 404 permit public notice, including its initiation of the CWA Section 404(q) process. These EPA comment letters included more than 160 pages of comments in which EPA identified substantial potential impacts and risks of the proposed project. *See* Section 2 of the FD.

In February 2020, USACE released the preliminary FEIS to the cooperating agencies for comment. EPA Region 10 submitted comments and recommendations to the USACE on the preliminary FEIS on March 26, 2020.

From March 12, 2020 through May 28, 2020, an interagency team of managers and scientific and technical staff from USACE, EPA, and USFWS met weekly to evaluate the proposed project for compliance with the CWA Section 404(b)(1) Guidelines and discuss concerns. As discussed in the FD, on May 28, 2022, EPA issued a letter that had the effect of discontinuing the formal 404(q) process because "[USACE] has demonstrated its commitment to the spirit of the dispute resolution process pursuant to the 1992 Memorandum of Agreement between EPA and the Department of the Army regarding CWA Section 404(q) by the extensive engagement with the EPA over the recent months"

and USACE’s “recent commitment to continue this coordination into the future, outside of the formal dispute process.”

As discussed during its March 12, 2020 through May 28, 2020, coordination with USFWS and EPA, based on its review of the Section 404(b)(1) Guidelines, USACE determined that EIS Alternative 3 (North Road Only with concentrate and return water pipelines) was the least environmentally damaging practicable alternative (LEDPA). In June 2020, PLP submitted to USACE a revised permit application (i.e., the 2020 Mine Plan) to incorporate changes to the project based on USACE’s LEDPA determination.

On July 24, 2020, USACE published a Notice of Availability for the FEIS in the Federal Register (USACE 2020a). USACE shared with EPA its August 20, 2020 letter to PLP that reflected the outcome of USACE’s March 2020 through May 2020 CWA Section 404(b)(1) Guidelines coordination with USFWS and EPA. Specifically, this letter states that “[a]s part of the ROD the District made Clean Water Act Section 404(b) (1) factual determinations that discharges at the mine site would cause unavoidable adverse impacts to aquatic resources and, preliminarily, that those adverse impacts would result in significant degradation to those aquatic resources.” The letter also identified compensatory mitigation requirements that would need to be satisfied to overcome the significant degradation finding. In response to that letter, PLP prepared a revised compensatory mitigation plan but USACE’s review of that plan found that it did not overcome the finding of significant degradation. And on November 20, 2020, USACE issued its Record of Decision (ROD) denying PLP’s CWA Section 404 permit application on the basis that the proposed project would not comply with the CWA Section 404(b)(1) Guidelines and would be contrary to the public interest.

EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, including the USACE administrative record and the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas.

2.C.7 National Mining Association (NMA) (Doc. #0809, p. 3)

As the agency is aware, the denial of Pebble’s CWA Section 404 permit is undergoing an administrative appeal before the U.S. Army Corps of Engineers (Corps). At a minimum, EPA should allow that process to conclude. Further, EPA’s proposed determination does not align with the agency’s Memorandum of Agreement (MOA) with the Department of the Army under Section 404(q) of the CWA. The MOA provides a process within the existing permitting regulations for elevating and working through EPA’s concerns with a Corps permit. [Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army, Aug. 11, 1992, available at https://www.epa.gov/sites/default/files/2015-06/documents/1992_moa_404q.pdf.] These existing

processes provide a predictable path for project proponents and should be exhausted before proceeding with a CWA Section 404(c) action. EPA's preemptive approach also fails to consider the ability to mitigate for unavoidable impacts that should be evaluated as part of a proposed mining project within the Pebble region.

EPA Response

EPA explains its CWA Section 404(c) authority, its rationale for acting now, and the relationship between CWA Section 404(c) and CWA Section 404(q) in Section 2 of the FD. Section 2 of the FD also explains that the Section 404(q) elevation process is not intended to constrain EPA's CWA Section 404(c) authority. Indeed, the Section 404(q) MOA itself recognizes that it does not constrain EPA's statutory authority under CWA Section 404(c): "[t]his agreement does not diminish either Army's authority to decide whether a particular individual permit should be granted, including determining whether the project is in compliance with the Section 404(b)(1) Guidelines, or the Administrator's authority under Section 404(c) of the Clean Water Act" (EPA and DOA 1992: Part I, paragraph 5).

EPA disagrees that it failed to consider the ability to mitigate for unavoidable impacts. EPA Region 10 evaluated the two compensatory mitigation plans (CMPs) PLP submitted to USACE in 2020 in Section 4.3.2 of the FD. Appendix C of the PD, RD, and FD includes a detailed technical evaluation of all additional mitigation measures identified by PLP, as well as a variety of sources. Section 7 of the PD solicited comments "on the potential for mitigation to be successful in reducing the impacts on aquatic resources from discharges of dredged or fill material associated with mining the Pebble deposit." Moreover, in accordance with 40 CFR 231.6, EPA solicited information on the potential corrective action from USACE, PLP, and the State of Alaska. Neither PLP, the State, USACE nor any commenter has identified specific mitigation measures that EPA "failed to consider."

2.C.8 National Mining Association (NMA) (Doc. #0809, p. 3)

EPA's Proposed Determination is Overly Broad and Seeks to Stop Future Development Activities Important to the State of Alaska

EPA's proposed determination is overly broad and seeks to stop future development activities within the state of Alaska. Its preclusion of development on Alaska state land violates CWA Section 101(b) and usurps the state's primary authority to manage its own land and water resources. Cooperative federalism is the cornerstone of the CWA and requires States, Tribes, and the federal government to work together to balance responsible development and environmental protection. This important policy is expressly articulated in CWA Section 101(b) to "recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, [and] to plan the development and use (including restoration, preservation, and enhancement) of land and water resources...." EPA's proposed preemptive use of 404(c) amounts to a land use planning decision that far

exceeds what Congress could have imagined, and is in violation of Alaska's own laws. As Governor Dunleavy recently stated, "Congress promised the State of Alaska the state would receive both ownership of minerals in the subsurface of state land, and "[t]he right to prospect for, mine, and remove the same. Sec. 6(i). Alaskans bargained hard and fought for the right to own state lands, own the minerals under those lands, and to remove minerals for the benefit of all Alaskans. The federal government agreed but now wants to break that promise." [Office of Governor Mike Dunleavy, Press Release: EPA and the Biden Administration Block Alaska's Rights, Threaten Alaska's Entire Mining Industry (May 25, 2022), available at <https://gov.alaska.gov/newsroom/2022/05/25/epa-and-the-biden-administration-block-alaskas-rights-threaten-alaskas-entire-mining-industry/>.]

EPA Response

See EPA's response to comment 2.C.1.

With respect to the commenter's contentions related to cooperative federalism, EPA agrees that the CWA generally established a structure for state and federal partnership in various ways to advance protection of waters of the United States, as well as other waters. EPA disagrees that the Agency's CWA Section 404(c) action violates CWA Section 101(b) and usurps the State's primary authority to manage its own land and water resources. As an initial matter, the commenter refers to language in Section 101(b) regarding "rights of States to prevent, reduce and eliminate *pollution*." (emphasis added). Congress's use of the broad term "pollution" in Section 101(b) indicates that the policy in that section is intended to recognize and preserve, among other things, states' authority to prevent, reduce, and eliminate all kinds of pollution, including pollution falling outside the scope of federal regulatory authority. "Pollution" is a defined term in the Act that means "man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water" (Section 502(19)). It has a broader scope than the "discharge of a pollutant" subject to regulatory jurisdiction under the Clean Water Act (*e.g.*, dredged or fill material).

CWA Section 101(b) also refers to states' rights and responsibilities "to plan the development and use (including restoration, preservation, and enhancement) of land and water resources." But Congress's general policy recognition of the states' primary planning role in this domain does not limit or constrain EPA's CWA Section 404(c) authority to protect federal interests by preventing unacceptable adverse effects from the discharge of dredged or fill material to statutorily enumerated resources from the discharge of dredged or fill material.

Nor does CWA Section 101(b) as a whole reflect a general policy of deference to state regulation to the exclusion of federal regulation, which would be inconsistent with Congress's enactment of the Clean Water Act because of the failures of a statutory scheme that relied primarily on state enforcement of State water quality standards, S. Rep. No. 92-414, 92d Cong., 1st Sess. 7 (1971) (observing that prior statutes had been "inadequate

in every vital aspect”). Instead, CWA Section 101(b) sets forth a policy focused on preserving the responsibilities and rights of States to work to achieve the objective of the Act. Those rights and responsibilities are to prevent, reduce, and eliminate pollution generally, including, but not limited to, through their authority over any source of pollution subject to state law, consulting with the Administrator in the exercise of his or her Clean Water Act authority, and implementing the Act’s regulatory permitting programs, in partnership and with technical and financial support from the federal government.

Further, CWA Section 101(b) cannot be read in isolation from the rest of the Act. The statute as a whole contains detailed provisions that show how the general objective in Section 101 is to be achieved, including through EPA’s exercise of its express and exclusive Section 404(c) authority. Specifically, to achieve the objective and goals outlined in CWA Section 101(a), Congress established a series of detailed programs (*e.g.*, the Section 303 water quality standards program, the Section 402 discharge elimination program, and the Section 404 dredge and fill program) designed to meet that objective. So too, Congress gave detailed instructions on how it intended to apply its policy of preserving the primary role of the states. As referenced explicitly in CWA Section 101(b), it gave states the option to implement the key permitting programs under Sections 402 and 404 of the Act – *i.e.*, their authority to assume administration of the federal regulatory program for discharges of pollutants under Sections 402(b) and 404(g).⁷ The Act likewise delineates a role for states in implementing numerous other CWA programs central to achieving the Act’s objective, including the water quality standards program and impaired waters and total maximum daily load program under CWA Section 303. CWA Section 401 grants primary authority to states and authorized tribes to grant, deny, or waive certification of proposed federal licenses or permits that may discharge into “waters of the United States” within their borders. And under CWA Section 510, unless expressly stated, nothing in the CWA precludes or denies the right of any state or tribe to establish more protective standards or limits than the Act. As described above, the CWA further assigns exclusive authority to the states to regulate non-point sources.

However, although the CWA recognizes the “primary responsibility and right of States” to reduce pollutants and plan development, it also gives EPA the authority to “administer this chapter,” and provides that the States may “consult with the Administrator in the exercise of his authority.” 33 USC 1251(b), (d). Moreover, the specific provision at issue here expressly and solely authorizes EPA to limit the use of any defined area for the discharge of dredged or fill material “whenever [EPA] determines . . . that the discharge of

⁷ While the State of Alaska has assumed responsibility for permit programs governing discharges addressed in Section 402 of the CWA, the State has not assumed responsibility for permit programs governing discharges of dredged or fill material discharges under Section 404. Moreover, doing so would not alter EPA’s authority under Section 404(c) of the CWA. 40 CFR 231.1, 231.3.

such materials into such area will have an unacceptable adverse effect” on enumerated resources. 33 USC 1344(c). While the State has multiple opportunities to provide input during EPA’s regulatory review process, see, e.g., 40 CFR 231.3, 231.4, 231.6, the CWA does not make EPA’s authority to make CWA Section 404(c) final determinations contingent upon any action or approval by the State.

Importantly, the D.C. Circuit Court has held that even when EPA considers impacts under its CWA Section 404(c) evaluation that could be construed to be within the state’s assumed responsibilities under the CWA, EPA does not intrude on the state’s authority. *Mingo Logan Coal Co. v. EPA*, 829 F.3d 710, 725 (D.C. Cir. 2016). In that case, Mingo Logan argued that EPA was “not authorized to reassess water quality under section 404(c) using its own ad hoc standards” because doing so would “impermissibly traverse[] the Congress’s intent by ignoring the bright line between section 402 regulation and section 404 regulation and raise[] federalism concerns.” *Id.* However, the D.C. Circuit agreed with the district court that “there is an important difference between ‘regulating’ pollutant discharge under section 402 and identifying unacceptable adverse effects on four specific categories of resources as a result of spoil disposal under section 404(c),” and held that EPA’s action did “not intrude on [the state’s] authority to regulate under section 402” because (1) EPA was “assessing whether discharging spoil into a particular stream will produce ‘unacceptable adverse effect[s]’ on wildlife[,]” and (2) EPA properly “evaluate[d] the effects of that spoil—both inside and outside the fill’s footprint—in making its assessment, including the changes the spoil might bring about in downstream water quality.” *Id.*

To the extent the commenter asserts that EPA’s action amounts to land use planning, EPA disagrees. As an initial matter, EPA’s action prohibits and restricts USACE’s ability to specify certain *waters of the United States* as disposal areas for certain discharges – specifically, discharges of dredged or fill material associated with mining the Pebble deposit that would have certain adverse effects on such waters. Moreover, any argument that EPA’s action constitutes an unconstitutional intrusion on the State’s land use authority is without merit. *See Hodel v. Virginia Surface Mining and Reclamation Ass’n, Inc.*, 452 U.S. 264, 283-292 (1981) (rejecting arguments that the Surface Mining Control and Reclamation Act, which required the reclamation of mining sites, illegally infringed on the “States’ freedom to make decisions in areas of ‘integral governmental functions’” or illegally “interferes with the States’ ability to exercise their police powers by regulating land use.”). Citing numerous cases, *Hodel* also clarified that “[a] wealth of precedent attests to congressional authority to displace or pre-empt state laws regulating private activity affecting interstate commerce when these laws conflict with federal laws.” 452 U.S. at 290. The Court explained further that, “[a]lthough such congressional enactments obviously curtail or prohibit the States’ prerogatives to make legislative

choices respecting subjects the States may consider important, the Supremacy Clause permits no other result.” *Id.*

EPA also disagrees that the Agency’s exercise of its CWA Section 404(c) authority violates “Alaska’s own laws.” To the extent that the commenter was referring to Alaska-specific federal law, such as the Alaska Statehood Act or ANILCA, please see EPA’s response to comments 2.C.17 and 2.C.26.

2.C.9 Alaska and 13 other States (Doc. #0810, p. 1)

Region 10’s proposed determination at Dkt. No. EPA-R10-OW-2022-0418. [May 26, 2022 Proposed Determination of the U.S. Environmental Protection Agency Region 10 Pursuant to § 404(c) of the Clean Water Act, Pebble Deposit Area, Southwest Alaska (87 FR 39091) (hereinafter Proposed Determination).] Region 10 is proposing to subjectively and unreasonably target a project in Alaska and pre-emptively veto the federal permitting of that project in an unprecedented abuse of its perceived authority pursuant to Clean Water Act (“CWA”) § 404(c). [To exercise a § 404(c) veto, EPA must establish that a project’s proposed “discharge[s]” “will have an unacceptable adverse effect on” one of four resources, including “shellfish beds and fishery areas (including spawning and breeding areas).” 33 U.S.C. § 1344(c).] If finalized, this proposed determination would: (1) prevent the permitting of a proposed Alaska mining project before the Army Corps of Engineers (“Corps”) has determined to issue a § 404 permit; and (2) impose a blanket prohibition on all future, similar mining projects over a 309-square-mile area, which is 23 times the size of the proposed project footprint and comprises lands owned by the State of Alaska. Due primarily to its lack of discernible standards or uniform application, this veto sets a dangerous precedent. If Region 10’s proposed determination is adopted, it will affirm an expansive, unconstrained interpretation of EPA’s § 404(c) power—effectively creating a § 404(c) wild card, playable at whim to stop projects.

EPA Response

EPA disagrees that the Agency’s CWA Section 404(c) action is an abuse of its authority. EPA explains its CWA Section 404(c) authority, as well as its rationale for acting now, in Section 2 of the FD. EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas. *See also* EPA’s response to comment 2.C.1.

2.C.10 National Mining Association et al. (Doc. #0812, p. 1)

1.) The business community relies on fair, consistent, and predictable permitting processes. EPA’s Proposed Determination, if finalized as proposed, will preemptively veto the Pebble Project before the project has had the opportunity to go through the permitting process. All project proponents deserve a

fair and objective review through the U.S. Army Corps of Engineers' (Corps) established permitting processes, that importantly include extensive environmental reviews, mandatory consideration of reasonable alternatives, and numerous opportunities for public engagement as required pursuant to the CWA and the National Environmental Policy Act.

EPA Response

See EPA's response to comment 2.C.1. EPA explains its CWA Section 404(c) authority, as well as its rationale for acting now, in Section 2 of the FD. EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas.

2.C.11 National Mining Association et al. (Doc. #0812, p. 2)

2.) EPA should allow the established legal and regulatory processes to proceed. As EPA is aware, an administrative appeal of the Corps' denial of the project's CWA Section 404 permit is ongoing. EPA should respect the Corps' processes and allow the administrative appeal to be decided before taking this preemptive action. EPA also should act consistent with the Memorandum of Agreement (MOA) it signed with the Department of the Army under Section 404(q) of the CWA. The MOA provides a predictable process within the existing permitting regulations for elevating and working through EPA concerns with a Corps permit.

EPA Response

See EPA's response to comment 2.C.7.

2.C.12 National Mining Association et al. (Doc. #0812, p. 2)

EPA should respect the state of Alaska. Cooperative federalism is the cornerstone of the CWA. The federal government, states, and Alaska Native organizations must work together to balance environmental protection and responsible development. EPA's preemptive veto of the Pebble Project will block development on hundreds of acres of Alaska state land. The agency must respect the state's authority to facilitate responsible development on its own land.

EPA Response

With respect to the commenter's contentions related to cooperative federalism and the State's role in managing its resources, see EPA's response to comment 2.C.8. See also EPA's response to comment 2.C.1.

2.C.13 National Mining Association et al. (Doc. #0812, p. 2)

EPA's preemptive Section 404(c) veto will set damaging precedent and inject significant regulatory uncertainty into a broad swath of the U.S. economy. The regulatory uncertainty from EPA's action regarding the Pebble Project will set damaging precedent. If EPA can preemptively veto this project while in the middle of an administrative appeal to the Corps and before the project has gone through the permitting process, it could do so for any development project in any sector. Any business that must obtain a CWA Section 404 permit from the Corps will be forced to run the risk that its project could be preemptively blocked by EPA without a fair evaluation through the established Corps permitting processes.

EPA Response

EPA explains its CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency's rationale for acting now, in Section 2 of the FD. EPA has engaged in an open and transparent CWA Section 404(c) review process and, after consideration of an extensive scientific and technical record, as well as the public comments on the PD, has determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas.

EPA disagrees that by acting now the Agency will inject regulatory uncertainty and disagrees that the Agency's action here will have any bearing on EPA's potential future use of its CWA Section 404(c) authority. As described in Section 2 of the FD, by acting now EPA makes clear its assessment based on an extensive and carefully considered record, which promotes regulatory certainty for all stakeholders, including USACE and the regulated community. EPA has used its CWA Section 404(c) authority judiciously, having completed only 13 Section 404(c) actions in the 50-year history of the CWA prior to this action. EPA exercises its CWA Section 404(c) authority on a case-by-case basis based on the specific facts of each situation consistent with applicable statutory and regulatory requirements.

2.C.14 National Mining Association et al. (Doc. #0812, p. 2)

The permitting system is designed to provide due process for project consideration. The process alone does not authorize any activities on the ground and therefore, should not be characterized as creating the potential for environmental harm. Indeed, EPA does not give up any authority to use its powers under Section 404(c) by waiting until the permitting process is complete. Given that, EPA should defer any further action under Section 404(c) until the permitting process is done.

EPA Response

EPA agrees with the commenter that EPA does not give up its authority to exercise CWA Section 404(c) by waiting until the permitting process is complete. However, EPA disagrees with the commenter’s suggestions that “the permitting process” does not create the potential for environmental harm and that EPA should defer further action until the permitting process is done. A permit issued by USACE would explicitly authorize the discharge of dredged or fill material into waters of the United States. As expressed in the preamble to EPA’s CWA 404(c) regulations, it is the Agency’s preference to exercise its CWA Section 404(c) authority prior to permit issuance both out of “concern for the plight of the applicant, and a desire to protect the site before any adverse impacts occur.” 44 Fed. Reg. 59077 (Oct. 9, 1979). Initiating CWA Section 404(c) prior to a final permit decision in no way disrupts USACE’s permit review process.

EPA explains its CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency’s rationale for acting now in Section 2 of the FD. EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas.

2.C.15 Alaska Department of Environmental Conservation (Doc. #0814, p. 8-10)

1. Proposed Veto

Region 10’s veto proposes two distinct determinations: the Proposed Prohibition and the Proposed Restriction.

Proposed Prohibition: Region 10 seeks to prohibit any discharge of “dredged or fill material for the construction and routine operation of the 2020 Mine Plan” in “the portion of the mine site footprint for the 2020 Mine Plan within the [South Fork Koktuli] and [North Fork Koktuli] watersheds,” which is a 13.1 square mile area (“Proposed Prohibition”). [USEPA Proposed Determination of the U.S. Environmental Protection Agency Region 10 Pursuant to Section 404(c) of the Clean Water Act, Pebble Deposit Area. Region 10, Seattle, WA 2022 (hereinafter “PD”), at ES-13.] The Proposed Prohibition is based on “four independent unacceptability findings”: (1) “[t]he loss of approximately 8.5 miles (13.7 km) of documented anadromous fish streams”; (2) “[t]he loss of approximately 91.2 miles (146.8 km) of additional streams that support anadromous fish streams”; (3) “[t]he loss of approximately 2,113 acres (8.6 km²) of wetlands and other waters that support anadromous fish streams”; and (4) “[a]dverse impacts on at least 29 additional miles (46.7 km) of documented anadromous fish streams resulting from greater than 20% changes in average monthly streamflow.” [PD at ES-12.]

Proposed Restriction: Region 10 would further “restrict” the “use of waters of the United States within the Defined Area for Restriction”—a 309 square mile area [An area greater than the total land area of New York City, including all five of its boroughs.]—“for specification as disposal sites for the discharge of dredged or fill material for the construction and routine operation of any future plan to mine the Pebble deposit that would either individually or collectively result in adverse effects similar or greater in nature and magnitude” to the four unacceptability findings supporting the Proposed Prohibition (“Proposed Restriction”). The Proposed Restriction is based on the four unacceptability findings listed above as well as the “pristine condition and productivity of anadromous habitat throughout the [South Fork Koktuli], [North Fork Koktuli], and [Upper Talarik Creek] watersheds”; the “large amount of permanent loss of anadromous fish habitat”; the “degradation of additional downstream spawning and rearing habitat for coho, Chinook, and sockeye salmon due to the loss of ecological subsidies provided by the eliminated streams, wetlands, and other waters”; and the “resulting erosion of both habitat complexity and biocomplexity within the [South Fork Koktuli], [North Fork Koktuli], and [Upper Talarik Creek] watersheds, which are key to the abundance and stability of salmon populations within these watersheds.” [PD at ES-12.]

The remainder of Region 10’s proposed veto is a confusion of additional information whose relevance to the two proposed determinations is not clearly articulated.

2. EPA’s § 404(c) Veto Power

Section 404(c) of the CWA, enacted in 1972, provides in full:

(c) Denial or restriction of use of defined areas as disposal sites

The Administrator is authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and he is authorized to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. Before making such determination, the Administrator shall consult with the Secretary. The Administrator shall set forth in writing and make public his findings and his reasons for making any determination under this subsection. [33 U.S.C. § 1344(c).]

“Such materials” refers to “dredged or fill material.” [33 U.S.C. § 1344(a).] The Clean Water Act does not define “discharge” as a standalone term, but defines “discharge of a pollutant” as “any addition of any pollutant to navigable waters from any point source.” [33 U.S.C. § 1362(12).] “Point source” means “any discernible, confined and discrete conveyance . . . from which pollutants are or may be discharged.” [33 U.S.C. § 1362(14).] “Pollutant” includes “dredged spoil.” [33 U.S.C. § 1362(6).]

In its fifty years of existence, § 404(c) has been used to veto only 13 projects. [See EPA, Chronology of CWA Section 404(c) Actions, retrieved from <https://www.epa.gov/cwa-404/chronology-cwa-section-404c-actions>.] These projects included 1800 acres of duck hunting grounds in South Carolina, [Michael

C. Blumm, *Vetoing Wetland Permits Under Section 404(c): A History of Inter-Federal Agency Controversy and Reform*, 33 U.C.L.A. J. Envtl. L. & Pol'y 215, 252 (2015) (discussing Jack Maybank site).] a shopping mall in Massachusetts, warehouses in New Jersey, [Id. at 263 (discussing Russo Development Corporation Site).] and dams in Virginia, [Id. at 273–78 (discussing James County Water Supply Dam).] Rhode Island, and Colorado. [Id. at 279–81 (discussing Big River Dam); id. at 241 (discussing Two Forks Dam).] The power has not been used to veto myriad others.

EPA's justifications for these vetoes appear to have been made ad hoc, and follow no discernible criteria. Justifications have ranged from "generation of leachate," to "toxicity," to "adverse impacts on the American Alligator." Sometimes EPA considers the availability of less environmentally damaging alternatives, sometimes not. Sometimes EPA takes compensatory mitigation into account, sometimes not.

Perhaps there is no pattern to be discerned. Washington, of course, is the State with the salmon most in need of saving. [As Washington State explains its dire salmon situation: "We have damaged their habitat, hindered their migration, and polluted their waters. We've overfished, forced them to compete for limited resources, and made their journey home that much harder." Washington State Recreation and Conservation Office, *Salmon and Orca Recovery: Problem*, retrieved from <https://rco.wa.gov/salmon-recovery/problem/>. The same cannot be said for Alaska.]

With this proposed veto, the entropy increases. Region 10 now seeks to veto a project proposed on State land—land that was conveyed to the State, by the federal government, precisely for this kind of development. Not stopping there, Region 10 would impose a blanket veto on all future, similar projects (yet to be conceived, much less permitted) over an area 23 times the size of the proposed project. One starts to wonder where the boundary lines are—or if they exist.

EPA Response

The commenter summarizes portions of the Executive Summary for the PD and takes the position that "[t]he remainder of Region 10's proposed veto is a confusion of additional information whose relevance to the two proposed determinations is not clearly articulated." As an initial matter, EPA's proposed determination was comprised of two parts, a proposed prohibition and a proposed restriction, both of which relied on underlying "unacceptability findings." EPA explained the proposed prohibition and proposed restriction in Section 5 of the PD. EPA explained the basis for the proposed prohibition and proposed restriction in Section 4 of the PD. Section 5 of the FD describes the defined area for prohibition and the defined area for restriction. In both of defined areas, EPA's action limits USACE's ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD. See EPA's response to comment 2.C.1. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas.

To the extent that the commenter asserts that the justification for EPA's prior CWA Section 404(c) actions "appear to have been made ad hoc, and follow no discernible criteria," EPA disagrees. EPA's determination of an "unacceptable adverse effect" in this and in every CWA Section 404(c) action involves a case-by-case determination that accounts for the unique characteristics of the aquatic resource that would be affected by discharges of dredged or fill material. As such, it necessarily follows that EPA's considerations, and in particular its justifications, vary between actions. Indeed, CWA Section 404(c) itself authorizes EPA to prohibit or restrict the use of any defined area as a disposal site if discharges into such area would have an unacceptable adverse effect on any of several disparate aquatic resources. *See* 33 USC 1344(c). Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas.

With respect to the commenter's statement that salmon in the State of Washington are most in need of saving, that statement is outside the scope of EPA's CWA Section 404(c) review process for the Pebble deposit area and this action. Congress provided EPA with broad authority to decide whether or when to exercise its discretionary CWA Section 404(c) authority. *See* Section 2 of the FD for a detailed description of EPA's CWA Section 404(c) authority.

With respect to the commenter's statement about the location of the proposed project, the CWA, including CWA Section 404(c), applies to waters of the United States situated on lands and mineral deposits granted to the State just as they do elsewhere. *See* EPA's response to comment 2.C.17.

With respect to the commenter's statements about the geographic scope and timing of EPA's action, CWA Section 404(c) authorizes EPA to prohibit the specification of any defined area as a disposal site, and to deny or restrict the use of any defined area for specification as a disposal site "whenever" it makes the required determination under the statute. *See* 33 USC 1344(c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (D.C. Cir. 2013). EPA explains its rationale for the defined area for prohibition and the defined area for restriction in Section 5 of the PD and FD. EPA explains its CWA Section 404(c) authority, as well as its rationale for acting now, in Section 2 of the FD.

2.C.16 Alaska Department of Environmental Conservation (Doc. #0814, p. 11-13)

ALASKA-SPECIFIC REASONS REQUIRING WITHDRAWAL OF THE PROPOSED DETERMINATION

The United States Supreme Court has recognized the "simple truth" that "Alaska's unique conditions" mean that "Alaska is often the exception, not the rule." [*Sturgeon v. Frost* (*Sturgeon I*), 577 U.S. 424, 440 (2016).] Alaska's exceptional nature created the need for a Statehood Act addressing Alaska's unique needs. Congress' intent with the Alaska Statehood Act was "to provide the new state with a solid

economic foundation.” [United States v. Atlantic Richfield Co., 435 F. Supp 1009, 1016 (D. Alaska 1977) (citing U.S. Code Congressional and Administrative News, 85th Cong., 2d Sess. (1958) Legislative History, p. 2933).] To this end, Congress conferred upon the young state the right to select lands, and promised that these lands’ mineral deposits would be “subject to lease by the State as the State legislature may direct.” [Statehood Act, § 6(i); see S. Rep. No. 1028, 83rd Cong. 2d Sess. 6 (1954) (“[T]he State is given the right to select lands known or believed to be mineral in character[.]”).]

The lands overlying the Pebble deposit were conveyed to Alaska by the federal government under a subsequent three-way land exchange that incorporated these crucial provisions. These lands are now subject to a State-created (legislature-directed) comprehensive land management plan that contemplates responsible mining of the Pebble deposit.

It is these lands that Region 10 would have EPA unilaterally shut down, in perpetuity.

1. The centerpiece of the Alaska Statehood Act is the State’s right to select and manage lands, including the development of “mineral deposits in such lands” as “the State legislature may direct.”

Alaska’s need for greater control over Alaska’s lands and resources became a coalescing force behind the statehood effort following World War II. [See *Sturgeon v. Frost* (*Sturgeon II*), 139 S. Ct. 1066, 1073–76 (2019) (recounting history); *Metlakatla Indian Cmty., Annette Islands Reserve v. Egan*, 369 U.S. 45, 47 (1962) (recounting long-running dispute between Alaska and federal government over fish traps); see generally Terrance Cole, *Fighting for the Forty-Ninth Star: C. W. Snedden and the Crusade for Alaska Statehood* (U. of Alaska Press, 2010) (“The quest for statehood in the 1950s was fueled by growing dissatisfaction with federal management of the territory.”).] Opponents to statehood raised several compelling objections, including Alaska’s small population, narrow tax base, and the questionable financial means to govern itself. [See *Trustees for Alaska v. State*, 736 P.2d 324, 335–36 (Alaska 1987) (recounting history).] To overcome these objections, advocates of statehood argued that Congress should convey significant lands to the new state in the hope that the lands would generate enough revenue for the State to govern itself. [Id. at 336 (“The congressmen who favored statehood conceded that it would impose an additional financial burden on the territory, but they maintained that the Statehood Act sufficiently provided for Alaska’s financial well-being.”).] As the Alaska Supreme Court explained, this argument won the day:

That Congress recognized the financial burden awaiting the new state is clear from its debates. It is equally clear that the large statehood land grant and the grant of the underlying mineral estate were seen as important means by which the new state could meet that burden. Congress, then, granted Alaska the mineral estate with the intention that the revenue generated therefrom would help fund the new state’s government. [Id. at 337.]

Congress eventually agreed to admit Alaska into the Union on terms set out in the Statehood Act. [Id.] The Act’s passage, however, did not complete the statehood process. Before Alaska could enter the Union, the Act had to be “ratified by the people.” [Statehood Act, § 8(b).] Relying on the provisions and promises set forth in the Statehood Act, Alaskans ratified statehood on August 26, 1958.

The United States Supreme Court has characterized statehood land-grant provisions as a “solemn agreement’ which in some ways may be analogized to a contract between private parties,” [Andrus v. Utah, 446 U.S. 500, 507 (1980).] and as “an unalterable condition of the admission, obligatory upon the United States.” [Beecher v. Wetherby, 95 U.S. 517, 523 (1877).] The centerpiece of this compact is the State’s right to select lands and manage these lands for the public’s benefit. [See Trustees for Alaska, 736 P.2d at 335 (“The primary purpose of the statehood land grants contained in section 6(a) and (b) of the Statehood Act was to ensure the economic and social well-being of the new state.”).] The Alaska Statehood Act expressly provided the State with the right to select over 103 million acres of federal land, along with the underlying mineral resources. [Statehood Act, § 6(a)–(b).] Congress allowed the State to select lands that would fund State government and provide economic benefits to State residents. [Trustees for Alaska, 736 P.2d at 336–37.] It also gave the State all right and title to the selected lands and provided that “mineral deposits in such lands shall be subject to lease by the State as the State legislature may direct.” [Statehood Act, § 6(i); see also, S. Rep. No. 1028, 83rd Cong. 2d Sess. 6 (1954) (“[T]he State is given the right to select lands known or believed to be mineral in character[.]”).] The conveyance of mineral rights was deemed so essential to the State’s ability to provide for itself that, should the State convey the surface estate of selected lands, it was required to reserve all mineral rights or forfeit those rights back to the federal government. [Statehood Act, § 6(i).] The Statehood Act additionally required Alaska to satisfy the Secretary of the Interior that “the Alaska State Legislature has made adequate provision for the administration, management, and conservation of said resources in the broad national interest.” [Statehood Act, § 6(e).] Following that, it was left to the new state to make the most of its selection options and to fully utilize these lands in order to satisfy the State’s budgetary obligations and the needs of Alaskans.

The rights conferred under the Statehood Act remain essential to the State’s continuing vitality and prosperity. For all States, but particularly for Alaska, the right to manage its lands is a foundational aspect of its sovereignty. These lands provide the revenues necessary to support state and local governments and sustain Alaska’s economy, culture, and way of life. [See, supra footnote 3.] In the words of the Statehood Act, these lands were to be used “[f]or the purposes of furthering the development of and expansion of communities” [Statehood Act, § 6(a).] as the State saw fit.

This commitment is reflected by Alaska’s Constitution, which obliges the State to ensure that Alaska’s lands and resources are managed to benefit its citizens and are developed and conserved in a responsible manner. [Alaska Const. art. VIII, § 1 (“It is the policy of the State to encourage the settlement of its land and the development of its resources by making them available for maximum use consistent with the public interest.”); id. § 2 (“The legislature shall provide for the utilization, development, and conservation of all natural resources belonging to the State, including land and waters, for the maximum benefit of its people.”).] “During the formative stages of our state constitution,” the Alaska Supreme Court has emphasized, “considerable attention was focused on designing a system of local government to answer to the perceived unique needs of Alaska.” [Liberati v. Bristol Bay Borough, 584 P.2d 1115, 1119 (Alaska 1978).]

An expansion of federal authority that impinges upon the State’s management and use of its own lands and resources restricts Alaska’s ability to provide for Alaskans. Importantly, the rights granted to the State of Alaska in the Statehood Act, and reflected in our Constitution, cannot be unilaterally diminished by any federal agency. [See *Hawaii v. Office of Hawaiian Affairs*, 556 U.S. 163, 176 (2009) (“[T]he consequences of admission are instantaneous, and it ignores the uniquely sovereign character of that event to suggest that subsequent events somehow can diminish what has already been bestowed”)]. And that proposition applies a fortiori where virtually all of the State’s public lands . . . are at stake.”) (quoting, in part, *Idaho v. United States*, 533 U.S. 262, 284 (2001) (Rehnquist, C.J., dissenting)); see also *Alaska v. Ahtna, Inc.*, 891 F.2d 1401, 1404, 1406 (9th Cir. 1989).]

EPA Response

To the extent the commenter claims that EPA’s action would “unilaterally shut down” land, EPA disagrees. EPA’s action limits USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with mining the Pebble deposit only. Section 5 of the FD describes the defined area for prohibition and the defined area for restriction, within which EPA’s action limits USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD.

With respect to the commenter’s claims regarding the Alaska Statehood Act, see EPA’s response to comment 2.C.17.

2.C.17 Alaska Department of Environmental Conservation (Doc. #0814, p. 13-14)

The federal government, via the Cook Inlet Land Exchange, expressly subjected the Pebble lands to the same conditions as lands selected under the Statehood Act.

Ownership of the lands underlying both the 2020 Mine Plan footprint (the subject of the Proposed Prohibition) and lands underlying the 309-square-mile area (the subject of the Proposed Restriction) is vested in Alaska pursuant to the 1976 Cook Inlet Land Exchange. [Terms and Consolidation for Land Consolidation and Management in the Cook Inlet Area was enacted by Congress as Public Law No. 94-204, 89 Stat. 1145 (1976) (“Cook Inlet Land Exchange”). This was an amendment to the Alaska Native Claims Settlement Act (“ANCSA”) and was approved by the Alaska Legislature in 1976. See also Pub. L. No. 96-311, 94 Stat. 947 (time extension for selecting lands).] This was a three- way exchange of lands between the State, the federal government, and Cook Inlet Region, Inc. (“CIRI”). [CIRI is one of 12 land-based Alaska Native Regional Corporations created under ANCSA. The Cook Inlet Land Exchange was codified first in Public Law 94-204 on Jan. 2, 1976, and then in its clarified form in Public Law 94-456 on Oct. 4, 1976.] Recognized as the “largest land exchange in American history,” [H.R. 104-643, CONVEYANCES OF LANDS TO CERTAIN NATIVE VILLAGES UNDER THE ALASKA NATIVE CLAIMS

SETTLEMENT ACT, Rpt. to accompany H.R. 2560, 104th Cong. 2d Sess. (June 27, 1996).] this was supposed to be a win [The federal government was able to create Lake Clark National Park following the “Lake Clark Tradeout,” under which all previous village selections were removed from the heart of the proposed Lake Clark National Park, creating a public land ownership pattern which made the park’s establishment a realistic possibility. This required CIRI and the State of Alaska to give up claims to “certain prime lands” and commit to supporting the creation of Lake Clark National Park.]-win [The villages selected land along the coast of Cook Inlet valuable for its economic potential via oil-and-gas leasing. For the villages, the Cook Inlet Land Exchange was intended to remedy, or at least ameliorate, the “in-lieu” withdrawals that the villages within the Cook Inlet Region had been required to make following the passage of ANCSA. The withdrawals these villages had previously made were in-lieu of lands located near their traditional ancestral homes, which had been already accounted for at the time of ANCSA’s passage, including by the federal government’s withdrawals of land in the Cook Inlet region for Elmendorf Air Force Base, Fort Richardson, Chugach National Forest, and Kenai National Moose Range. See H.R. 104-643, CONVEYANCES OF LANDS TO CERTAIN NATIVE VILLAGES UNDER THE ALASKA NATIVE CLAIMS SETTLEMENT ACT, Rpt. to accompany H.R. 2560, 104th Cong. 2d Sess. (June 27, 1996).]-win [The State of Alaska, of course, obtained land with a valuable underlying mineral deposit.] situation.

Alaska’s benefit of the bargain was acquiring mineral-rich lands specifically for their mineral potential. These lands, which included the lands containing the Pebble deposit, were expressly accorded the same status as if originally selected under the Alaska Statehood Act, [See Cook Inlet Land Exchange.] making these lands’ “[m]ineral deposits . . . subject to lease by the State as the State legislature may direct.” [See Statehood Act, § 6(i).] In exchange, Alaska relinquished certain lands, which resulted in the creation of Lake Clark National Park—the federal government’s benefit of the bargain.

With this proposed veto, Region 10 would—unilaterally, without congressional review or consent—deprive Alaska of the benefit of this bargain. [This would have legal consequences, which Alaska will bring to the courts.] When a more recent, and more specific congressional action conflicts with an older, vaguer congressional enactment, the more recent and specific action controls. [The Cook Inlet Land Exchange was entered into after the enactment of the Clean Water Act. At the time of the Exchange Agreement, then, Congress was aware of EPA’s 404(c) power. This means that were the two to ever conflict— as they are now—the more recent, and more specific, action controls. *Tug Allie-B, Inc. v. United States*, 273 F.3d 936, 948– 49 (11th Cir. 2001) (“[I]f two statutes conflict, the more recent or more specific statute controls.”); see *S. Nat. Gas Co. v. Land, Cullman Cnty.*, 197 F.3d 1368, 1373 (11th Cir. 1999) (“more recent or specific statutes should prevail over older or more general ones” (quotation and citation omitted)); *United States v. Devall*, 704 F.2d 1513, 1518 (11th Cir.1983) (because the conflict between the Bankruptcy Code and the Social Security Act is apparent and cannot be reconciled without limiting one to accommodate the other, the later enacted statute must prevail over the earlier enacted, more general statute); *Hines United States*, 551 F.2d 717, 725 (6th Cir. 1977) (when the purposes of two statutes appear to be in conflict with each other, and there is no statutory language which makes any cross reference and the legislative history is silent as to the possible conflict, it is generally assumed that

the later statute constitutes an amendment of the earlier one); *I.C.C. v. Southern Ry. Co.*, 543 F.2d 534, 539 (5th Cir.1976) (where there is conflict, the subsequent enactment governs).]

EPA Response

EPA disagrees with the commenter’s claims regarding the Alaska Statehood Act for several reasons. The Alaska Statehood Act does not preempt or modify the CWA or impinge on EPA’s CWA Section 404(c) authority. In addition, EPA disagrees with the commenter’s contentions regarding the reason that the State of Alaska selected the lands overlaying the Pebble deposit and that Alaska’s only “benefit of the bargain was acquiring mineral-rich lands specifically for their mineral potential.” As discussed below, the commenter overstates the extent to which the mineral potential of the lands overlaying the Pebble deposit played a role in the State’s selection of those lands and ignores subsequent developments that undercut its assertions. Finally, while the issue may not affect the legal analysis, the commenter also appears to be incorrect in its assertion that Alaska acquired the lands as part of the Cook Inlet Exchange.

Neither the Alaska Statehood Act nor the Cook Inlet Land Exchange Act bars EPA from undertaking a CWA Section 404(c) review process or from taking final agency action under CWA Section 404(c).

Section 6(i) of the Statehood Act provides in full:

All grants made or confirmed under this Act shall include mineral deposits. The grants of mineral lands to the State of Alaska under subsections (a) and (b) of this section are made upon the express condition that all sales, grants, deeds, or patents for any of the mineral lands so granted shall be subject to and contain a reservation to the State of all of the minerals in the lands so sold, granted, deeded, or patented, together with the right to prospect for, mine, and remove the same. Mineral deposits in such lands shall be subject to lease by the State as the State legislature may direct: Provided, That any lands or minerals hereafter disposed of contrary to the provisions of this section shall be forfeited to the United States by appropriate proceedings instituted by the Attorney General for that purpose in the United States District Court for the District of Alaska.

Alaska Statehood Act, Pub. L. No. 85-508, 72 Stat. 339 (1958).

This provision, which the commenter’s argument appears to rely on, was intended to codify two basic restrictions that also apply to other land grant states: “a requirement that grantee states reserve the mineral interest when disposing of granted lands, and a provision allowing grantee states to dispose of minerals only by lease.” *Trustees for Alaska v. State of Alaska*, 736 P.2d 324, 334 (Alaska 1987) (discussing *Alaska v. Lewis*, 559 P.2d 639, 636 (Alaska 1977)) (footnote omitted). And, if Alaska disposed of the lands or minerals in contravention of Section 6(i), then the State would incur the sanction of

forfeiting the lands or mineral deposits back to the United States. Statehood Act, Section 6(i).

As the Alaska Supreme Court further explained, Section 6(i) only placed Alaska on an equal footing as compared to other public land states:

The leasing restriction in section 6(i) was intended to further the goal of state revenue production. . . That language was copied advisedly *so that Alaska would be on an equal but not a favored footing with other public land states with respect to the disposition of mineral lands.*

Trustees for Alaska, 736 P.2d at 337 (emphasis added). *Accord Lewis*, 559 P.2d at 638. Accordingly, while Section 6(i) clarified that Alaska was to receive the mineral deposits underlying the lands that it was granted for purposes of generating revenue, a fundamental purpose of Section 6(i) was to impose restrictions on Alaska's disposal of lands and minerals that it was granted, with forfeiture of the minerals back to the United States as the penalty for non-compliance. Contrary to any arguments that Section 6(i) placed Alaska in a unique position regarding mineral deposits, granting the mineral deposits along with the land and imposing those restrictions merely placed Alaska "on an equal but not a favored footing" as compared to other public land states regarding such lands and deposits. *Trustees for Alaska*, 732 P.2d at 337; *see also Metlakatla Indian Cmty v. Egan*, 369 U.S. 45, 57 (1962) (the Alaska Statehood Act only created in Alaska the same authority as that given to other states).

Moreover, Section 6(i) does not purport to limit the application of federal law to lands and mineral deposits granted to Alaska under the Statehood Act. There is nothing in the language of the Act, much less in Section 6(i), that suggests that the laws of the United States would not apply with full force and effect to the lands or mineral deposits granted to Alaska upon statehood. Indeed, other than providing that Alaska would receive the mineral deposits underlying the lands that Alaska was granted, the text of Section 6(i) only sets forth conditions that go with those grants and a penalty to be imposed against Alaska if it does not comply with those conditions. The commenter does not point to any other provision of the Alaska Statehood Act that purports to limit the application of federal law to the use of the granted lands or mineral deposits, including Congress's express grant of authority to EPA to prohibit the specification of or restrict the use for specification any defined area as disposal sites for the discharge of dredged or fill material associated with mining those deposits when such activities will have unacceptable adverse effects.

Accordingly, neither the Statehood Act nor the Cook Inlet Exchange provides support for the commenter's contention that EPA's CWA Section 404(c) authority should be curtailed when applied to the granted lands and mineral deposits. Thus, contrary to the commenter's arguments, there is no conflict between the granting of lands and mineral

deposits to Alaska on the one hand and the application of the laws of the United States to the potential mining of the mineral deposits on the other. Under the Alaska Statehood Act, the laws of the United States are to be applied to such activities (including their associated discharges of dredged or fill material) as they would apply elsewhere.

In addition, the commenter's reliance on *Sturgeon v. Frost*, 577 U.S. 424 (2016) ("*Sturgeon I*") and *Sturgeon v. Frost*, 139 S. Ct. 1066 (2019) ("*Sturgeon II*"), does not change the outcome that the CWA applies with full force on the lands selected by Alaska here. Indeed, both of those cases acknowledged the need to comply with and address continuing obligations under generally applicable laws like the CWA, even for water and lands that are "non-public" under ANILCA. *Sturgeon II*, 139 S. Ct. at 1084; *Sturgeon I*, 577 U.S. at 1069. Similarly, the commenter's reliance on *Andrus v. Utah*, 446 U.S. 500 (1980), does not alter this outcome. That case involved school trust lands, which courts also have accorded special treatment. Nonetheless, states cannot use those lands "in a manner which would conflict with valid legislation enacted by Congress in the national interest." *Bd. of Natural Resources of State of Washington v. Brown*, 992 F.2d 937, 944 (9th Cir. 1993) (quoting *Case v. Bowles*, 327 U.S. 92, 100 (1946)).

Despite the lack of substantive support in the Alaska Statehood Act for its assertions, the commenter also attempts to rely on certain canons of statutory construction to argue that the Alaska Statehood Act should govern – namely that more recent and more specific statutes should govern when statutes conflict. The commenter argues that because the Cook Inlet Land Exchange Act was entered into after the enactment of the CWA, the Cook Inlet Land Exchange Act should govern when statutes conflict. As an initial matter, it appears that documents related to Alaska's acquisition of the lands overlaying the main Pebble deposit specify that at least some of the lands were conveyed under the Statehood Act and not through the Cook Inlet Land Exchange.⁸ However, even assuming for the sake of argument that some or all of the lands were conveyed through the Cook Inlet Land Exchange Act, the statutory construction argument is without merit.

There is no basis to assume, much less a clear statement, that Congress intended the Cook Inlet Land Exchange to amend or supersede the CWA. *See, e.g., Vill. of Barrington, Ill. v. STB*, 636 F.3d 650, 661-62 (D.C. Cir. 2011); *see also Mingo Logan Coal Company Co. v. EPA*, 714 F.3d 608, 615 (D.C. Cir. 2013) (rejecting argument that later in time amendments to CWA Section 404 limited EPA's authority under CWA Section 404(c)). In addition, the commenter relies on a canon of statutory construction that address situations in which two statutes related to the same subject matter cannot be reconciled. *See Southern Natural Gas Co. v. Land, Cullman County*, 197 F.3d 1368, 1373 (11th Cir. 1999) ("[c]ourts

⁸ Nonetheless, the CWA, including Section 404(c), applies with full force and effect to waters of the United States situated on lands selected under either the Alaska Statehood Act or the Cook Inlet Land Exchange Act. As a result, the commenter's claim that EPA may not pursue a CWA Section 404(c) action related to these lands fails regardless of which authority the lands were selected or conveyed under.

generally adhere to the principle that statutes relating to the same subject matter should be construed harmoniously if possible, and if not, that more recent or specific statutes should prevail over older or more general ones.”). Here, however, there is no conflict between the statutes. They address different subjects and can be easily harmonized. There simply is no conflicting overlap between the Cook Inlet Land Exchange Act and the CWA to implicate the cited canon.

Furthermore, other canons of construction undermine the commenter’s assertions. For example, when Congress enumerates an exception to a rule, one can infer that Congress did not intend for any other exceptions to apply. *See, e.g., United States v. Novak*, 476 F.3d 1041, 1049 n.9 (9th Cir. 2007) (stating that the court’s “case law dictates that when Congress provides a list of exceptions in a statute, that list is presumed exclusive”). Here, the CWA Amendments of 1977 added Section 404(f) exemptions and Section 404(r). Section 404(f) includes a list of non-prohibited discharges of dredged or fill material that are exempt from 404 permitting. Section 404(r) excludes certain Federal Projects from regulation under Section 404, including Section 404(c). Of course, those provisions were enacted after the Cook Inlet Land Exchange of 1976. As Congress did not exempt discharges or federal permits relating to the use of land or mineral deposits allegedly granted under the Cook Inlet Land Exchange Act, the cited canons of statutory construction dictate that the use of such lands or mineral deposits is not exempt from Section 404, including Section 404(c). In other words, Congress knows how to make exemptions from the CWA, and did not do so when it passed the Cook Inlet Exchange Act or the 1977 CWA Amendments. And, as the commenter pointed out, at the time of the Exchange Agreement, “Congress was aware of EPA’s 404(c) power.”

The commenter also appears to contend that EPA should not be able to proceed under CWA Section 404(c) because doing so is “an expansion of federal authority” that infringes upon the State’s management and use of its lands and resources. As an initial matter, EPA disagrees that its use of CWA Section 404(c) is an expansion of federal authority. Congress granted EPA broad authority to, among other actions, prohibit the specification of, or deny or restrict the use of, any defined area as a disposal site for discharges of dredged or fill material into waters of the United States “whenever” it makes the required determination under the statute. 33 USC 1344(c). *See* Section 2 of the FD. EPA also disagrees that its action impinges on the State’s management and use of its lands and resources. As noted above, and discussed in more detail below, EPA’s authority under the CWA Section 404(c) relates to limits on the use of defined areas as disposal sites for the discharge of dredged or fill material to waters of the United States. To the extent that EPA’s exercise of its CWA Section 404(c) authority incidentally affects land use, that does not somehow transform CWA Section 404(c) or EPA’s action here into a federal land use action.

The commenter's claims that EPA's action would deprive the State of Alaska of the benefit of its bargain are also flawed. First, the commenter overstates the extent to which the mineral potential of the lands overlaying the Pebble deposit played a role in the State's selection of those lands and ignores subsequent developments that undercut its assertions. The "Public Comment Draft" issued by the Alaska Department of Natural Resources that contained Alaska's preliminary identification of lands potentially to be selected makes clear that the State of Alaska considered the lands for many reasons, including accessibility, possible future settlement, close proximity to Lake Iliamna, "high fisheries values," and "superb recreational opportunities." Alaska DNR, Area Descriptions of State Interest Lands; Public Comment Draft (November 24, 1977) at 7. Indeed, only after listing numerous other reasons for selecting the lands overlying the Pebble deposit did the State mention "hard rock mineral potential." *Id.* Similarly, in the subsequent document where Alaska identified its "final selections" of lands, including the lands in "Unit 23," which includes the Pebble deposit, the Alaska Department of Natural Resources focused on the "outstanding values" of fisheries, recreation, and access. State of Alaska Land Selection Program – State Lands to be Conveyed by Congress (May 15, 1978) at 16-17. The State DNR reported, for example, that "[t]he fisheries value throughout the area is extremely high" and that, "[w]hen viewed in combination, the drainages encompassed by Units 23-1 and 23-2 provide key habitat for an important subsistence fishery, a multi-million-dollar commercial salmon fishery, and a sport fishery that is unequalled in quality anywhere in the State of Alaska." *Id.* at 16. On the other hand, the State DNR's overview did not include the areas of the Pebble deposit among the "[t]wenty-five million acres of land with hard rock mineral potential," and instead only mentioned later that the lands near the Pebble deposit had been rated with "moderate potential for hard rock minerals." *Id.* at 8, 16.

An Alaska Department of Natural Resources press release issued when the lands were anticipated to be part of the Cook Inlet Land Exchange stated even more strongly that Alaska was interested in lands near the Pebble deposit for their fisheries and related values:

The second area of interest is Iliamna Lake. This watershed produces the world's largest red salmon fishery and it is upon this fishery which the major portion of our citizens in the Bristol Bay Region are dependent. The area is also the focus of the finest trophy rainbow trout[] system in North America. The State has management control of these fisheries and by gaining control of the remaining public lands would be able to more effectively manage these fisheries in the public interest.

Alaska DNR Press Release re: Background – Cook Inlet Land Trade Proposal. The press release also mentioned "high wildlife and recreational values as well as some oil and gas potential," but did not mention mining or minerals. *Id.*

Second, the commenter’s claims appear to be based on the incorrect premise that EPA’s action will “unilaterally shut down” land and/or prohibit all mining. It does not and could not. EPA’s authority under CWA Section 404(c) relates to limits on the use of defined areas as disposal sites for the discharge of dredged or fill material to waters of the United States. Even where use of CWA Section 404(c) may incidentally have the effect of limiting mining activity that would be subject to the prohibition or restriction, that does not somehow transform CWA Section 404(c) or EPA’s action here into a federal land use action. Rather, EPA is acting squarely within its statutory authority to limit the specification of certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit that EPA has determined would result in unacceptable adverse effects on anadromous fishery areas. Section 5 of the FD describes the defined area for prohibition and the defined area for restriction, within which EPA’s action limits USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD. The prohibition and restriction do not address discharges associated with mining the Pebble deposit that EPA did not evaluate, nor does it address other types of discharges. See EPA’s response to comment 5.B.32.⁹

2.C.18 Alaska Department of Environmental Conservation (Doc. #0814, p. 14-16)

The Bristol Bay Area Plan is a comprehensive management plan created at the direction of the Alaska State Legislature.

The Alaska State Legislature has directed the State to “adopt, maintain, and when appropriate, revise” regional land-use plans providing for the management of Alaska-owned lands. [AS § 38.04.065 (entitled “Land Use Planning and Classification”); 11 Alaska Administrative Code (“AAC”) 55.010–.030 (providing that ADNR “shall, with local governmental and public involvement under AS 38.05.945, adopt, maintain, and, when appropriate, revise regional land use plans that provide for the use and management of State of Alaska-owned lands”). AS § 38.04.010, which articulates Alaska’s land and land-management policy, states that “in order to provide for maximum use of state land consistent with the public interest, it is the policy of the State of Alaska to plan and manage state-owned land to establish a balanced

⁹ As noted in Section 2 of the FD, during a December 20, 2022 meeting with EPA as part of the final consultation period described in 40 CFR 231.6, representatives from the State of Alaska reiterated the same concerns that the State raised throughout the process, including in its public comments and its December 12 and December 19, 2022 letters. In its December 19, 2022 letter, the state included quotes from the legislative history of the Alaska Statehood Act. EPA considered the information about the legislative history of the Alaska Statehood Act provided by the State before issuing this final determination. To the extent the State contends that the quoted legislative history supports its contention that EPA is precluded by the Alaska Statehood Act from exercising its CWA Section 404(c) authority to limit the specification of any the defined areas identified in the FD as disposal sites for the discharge of dredged or fill material evaluated in the FD, EPA disagrees for the reasons discussed in EPA’s response to comment 2.C.17.

combination of land available for both public and private purposes. The choice of land best suited for public and private use shall be determined through the inventory, planning, and classification processes set out in AS 38.04.065 – 38.04.070.”] In the development of these plans, all resource and land uses—including mining, fish and wildlife habitat, and recreation—are considered and evaluated. [AS § 38.04.065(b). The Alaska Administrative Code further identifies the components that must be included in area plans. See 11 AAC 55.030; e.g., 11 AAC 55.030(c)(6) (area plans must include “management guidelines and stated management intent, representing department policies to guide the actions of the department when making land use decisions, directing land management and ensuring compatibility among competing land uses”).]

Following the Cook Inlet Land Exchange, and pursuant to legislative directive, the State in 1984 issued its first Bristol Bay Area Plan (“Area Plan”), which outlined land use authorizations throughout the Bristol Bay region, including the Pebble deposit area. Following a careful balancing of land- and resource-use interests, the Area Plan specifically designated the area containing the Pebble deposit as open to mineral development—expressly denoting this as a “primary” use for the Pebble lands. The Area Plan’s 2005 update continued to recognize that all state lands within the region are open to mineral development unless they are subject to a mineral closing order. [The lands overlaying the Pebble deposit are not subject to a mineral closing order. The State plan for the area includes 19 mineral closing orders which prohibit new mineral entry in 64 anadromous streams plus 100 feet on either side of the designated streams.] The Area Plan’s 2013 revisions reaffirmed that:

- * Exploration for locatable minerals is allowed on all state lands except those specifically closed to location.
- * State land in the area is to be managed for a variety of multiple uses, including mineral exploration and development.
- * While the majority of lands in the area are designated for general use, mineral exploration and development is expressly authorized for the Pebble lands.
- * The general resource management intent for the Pebble area is to consider mineral exploration and development and to allow the State the discretion to make specific decisions as to how development may occur, through an authorization process.
- * The 2013 Area Plan specifically identifies potential transportation corridors to service the Pebble deposit and emphasizes the need to keep these potential corridors open.

The State of Alaska has followed through on the promises it made at statehood: it is managing the Pebble deposit “[f]or the purposes of furthering the development of and expansion of communities” [Statehood Act, § 6(a).] to sustain Alaska’s economy, culture, and way of life. [See supra footnote 3.] And Alaska has delivered on the Secretary of Interior’s certification to Congress that Alaska had “adequate provisions” in place to manage its land: [See supra Section 4 of the Alaska Section of this Comment Letter.] in addition to the Area Plan, Alaska statutes expressly protect fisheries in Bristol Bay by requiring legislative findings before specified submerged land and shoreland in Bristol Bay may be

entered, and before certain mining operations may occur. [AS §§ 38.05.140 & 38.05.142.] Most of the streams in Bristol Bay are legislatively designated as fishery reserves. [AS § 38.05.140(f) (“The submerged and shoreland lying north of 57 degrees, 30 minutes, North latitude and east of 159 degrees, 49 minutes, West longitude within the Bristol Bay drainage are designated as the Bristol Bay Fisheries Reserve.”).] Legislative approval is required for certain large-scale mines in the area. [AS § 38.05.142(a) (“In addition to permits and authorizations otherwise required by law, a final authorization must be obtained from the legislature for a large-scale metallic sulfide mining operation located within the watershed of the Bristol Bay Fisheries Reserve designated in AS 38.05.140(f). This authorization shall take the form of a duly enacted law finding that the proposed large-scale metallic sulfide mining operation will not constitute danger to the fishery within the Bristol Bay Fisheries Reserve.”).] State management of the Bristol Bay area is a multifaceted, and ongoing, process—continually subject to revision as Alaska’s circumstances and needs evolve.

Mining claims within the Pebble area have been staked and extensively explored under the State’s oversight and issuance of authorizations. The State makes final decisions on whether, where, and how mining should occur. Indeed, implementation of the Area Plan demonstrates Alaska’s continued commitment to this path.

The Area Plan also took into account regional land use designations, which included extensive federal and state land conservation. For example, the nearby Lake Clark National Park and Preserve is one of thirteen National Park System units created or expanded by the Alaska National Interest Lands Conservation Act of 1980 (“ANILCA”) (made possible by Alaska’s participation in the Cook Inlet Land Exchange). As a unit of the National Park System, Lake Clark National Park and Preserve is administered to “conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” To achieve these objectives, the Lake Clark National Park and Preserve protects approximately 4 million acres of undisturbed public land; and contains approximately 2,470,000 acres of designated wilderness for management under the provisions of the Wilderness Act of 1964 and portions of three designated Wild and Scenic Rivers. In addition to the Lake Clark National Park and Preserve, the federal government has preserved a vast amount of land in or near the Bristol Bay area, including Katmai National Park and Preserve, the Togiak National Wildlife Refuge, the Becharof National Wildlife Refuge, and the Alaska Peninsula National Wildlife Refuge. The extent of these designations are reflected in a map included in the proposed veto, at ES-2, which illustrates the large extent of the areas already protected in the Bristol Bay region. [See PD at ES-2 (map, vast green areas depicting protected areas in the region).] And, pursuant to the Area Plan, the State has issued mineral closing orders in the Bristol Bay region that prohibit mining on over 260,000 acres of additional state lands.

The State has undertaken considerable efforts on its own to preserve vast areas of the Bristol Bay region. For example, the State created the Wood-Tikchik State Park, which, at 1.6 million acres, is largest state park in the nation. The State has protected habitat and species through the creation of critical habitat areas, refuges, and it has passed laws and regulations to regulate activity on or near anadromous

waters. More generally, the State regulates activities in all fish-bearing waters, [The Alaska Department of Fish & Game regulates activities in fish-bearing waters under AS §§ 16.05.871 and AS 16.05.841.] water withdrawals from any waterbody, [AS §§ 46.15.010–.270 (Alaska Water Use Act).] and discharges into waterbodies. [The Alaska Department of Environmental Conservation regulates discharges into waterbodies through the Alaska Pollutant Discharge Elimination System permitting program. 18 AAC 83.005–.990.]

The State and federal government, in short, have prohibited mineral development over a significant portion of the Bristol Bay region. The State balanced these conservation designations by specifically selecting certain lands within the region for their mineral potential. After decades of study and public input, and three successive land management plans, the State made the deliberate and considered decision that mineral development is an acceptable land use of the Pebble lands.

This extensive work is utterly disregarded in Region 10's proposed veto.

EPA Response

EPA disagrees with the commenter that it disregarded the State's planning efforts related to the Bristol Bay Area Plan (BBAP). The BBAP and Mineral Closing Order 393 are discussed in Section 2 of the FD. EPA agrees that the BBAP includes guidelines that seek to protect water quality, streamflow, fish and wildlife habitat, and wetlands. The BBAP also includes guidelines for the protection of streams that support high value resident fish, which are in addition to protections for specified anadromous streams.

To the extent the commenter generally discusses Alaska State law and land that the State of Alaska or various federal agencies have withdrawn or otherwise preserved pursuant to state and federal law, EPA takes no position on the commenter's general characterizations. Nonetheless, neither the BBAP nor any of the laws or processes referenced by the commenter supersede, amend, modify or repeal the Clean Water Act or impinge on EPA's CWA Section 404(c) authority. With respect to the commenter's contention that the BBAP designates mineral development as an acceptable land use, EPA's CWA Section 404(c) action does not regulate mineral development. EPA's action limits USACE's ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material.

To the extent the commenter raises questions or concerns related to the Alaska Statehood Act, see EPA's response to comment 2.C.17.

2.C.19 Alaska Department of Environmental Conservation (Doc. #0814, p. 16-18)

Alaska is best positioned to protect its resources, including its fish, while permitting development to proceed responsibly.

The United States Supreme Court has recognized Alaska’s fish resources as “an asset unique in its abundance in Alaska. . . . the management of which is a matter of great state concern.” [Reetz v. Bozanich, 397 U.S. 82, 87 (1970).]

Alaska cares immensely about its fish resources. Enshrined in Alaska’s Constitution is a directive to manage replenishable natural resources, including fish, under a “sustained yield principle.” [Alaska Const. art. VIII, § 4.] This principle balances “maximum use of natural resources with their continued availability to future generations.” [West v. State, 248 P.3d 689, 696 (Alaska 2010) (quoting The Alaska Constitutional Convention, Proposed Constitution for the State of Alaska: A Report to the People of Alaska (1956)).] The Alaska Department of Natural Resources (“ADNR”) ensures that any “use of water” is in the public interest. [AS §§ 46.15.010–.270 (Alaska Water Use Act).] This means that all ADNR water-use permitting decisions “must . . . specifically consider[] the impacts” of the proposed use “on water quality, navigation, and fish and wildlife.” [Tulkisarmute Native Cmty. Council v. Heinze, 898 P.2d 935, 950 (Alaska 1995) (citing AS § 46.15.080(b); 11 AAC 93.120(e)(2) & (g)). In making the public-interest determination, Alaska has codified considerations that are similar to those of a federal NEPA analysis. AS § 46.15.080(b). For every permit issued, ADNR must consider: (1) the benefit to the applicant resulting from the proposed appropriation; (2) the effect of the economic activity resulting from the proposed appropriation; (3) the effect on fish and game resources and on public recreational opportunities; (4) the effect on public health; (5) the effect of loss of alternate uses of water that might be made within a reasonable time if not precluded or hindered by the proposed appropriation; (6) harm to other persons resulting from the proposed appropriation; (7) the intent and ability of the applicant to complete the appropriation; and (8) the effect upon access to navigable or public water. Id.]

The Alaska Department of Fish & Game (“ADF&G”) carries out Alaska’s constitutional responsibilities for ensuring the availability of a sustained yield of “fish . . . and all other replenishable resources” for future generations. [Alaska Const. art. VIII, § 4.] ADF&G is statutorily required to protect the habitat of freshwater anadromous fish and to ensure their free passage through freshwater bodies. The Anadromous Fish Act, for example, requires that projects potentially altering or affecting the “natural flow or bed” of a specified anadromous waterbody [Specified anadromous waterbodies are described in the “Catalog of Waters Important for the Spawning Rearing or Migration of Anadromous Fishes” (“Anadromous Waters Catalog”).] notify and obtain written approval from ADF&G before proceeding. [AS §§ 16.05.871–.901. Failure to notify ADF&G and obtain proper approval is prosecutable as a misdemeanor. AS § 16.05.881.] ADF&G regulations ensure that impacts to anadromous or resident fish waterbodies are mitigated, [E.g., 5 AAC 95.900 (imposing upon permittees a duty to mitigate “any adverse effect upon fish or wildlife, or their habitat[.]”); 5 AAC 95.902 (imposing strict liability upon anyone who fails to mitigate as required by 5 AAC 95.900).] and ADF&G staff—experts in the science of Alaska fish and fish habitats—are actively engaged in protecting Alaska fish habitat. All activities [Including road crossings, gravel removal, mining, water withdrawals, the use of vehicles or equipment in the waterway, stream realignment or diversion, bank stabilization, and the placement, excavation, deposition, or removal of any material.] conducted within or across any specified anadromous waterbody must be approved by the ADF&G Habitat Section—a specialized section of ADF&G staffed

with habitat biologists who have extensive experience in conducting research and field surveys, reviewing plans, and working with permit applicants to ensure that proposed projects do not adversely impact fish habitat. [In the Angoon Airport project, for example, ADF&G worked with Alaska’s Department of Transportation and Public Facilities to reroute a stream affected by the project in order to “protect the existing riparian habitat and general health of the stream” and “maintain fish passage.” ADF&G habitat biologists will oversee a stream alignment workplan specifying the “actual implementation, including timing engineering drawings, measures to avoid creating adverse effects during implementation, [and] construction,” and will jointly develop a monitoring plan with ADF&G.]

As the United States Supreme Court recognized, and Alaska law confirms, Alaska’s fish and fish habitat are a matter of great concern to Alaska. Alaska takes these responsibilities seriously: as a result, our protections are robust.

EPA Response

EPA recognizes the role of various Alaska State agencies in managing the State’s resources. Nonetheless, state laws aimed at managing state resources do not supersede, amend, modify, or repeal the CWA or impinge on EPA’s CWA Section 404(c) authority. See EPA’s response to comment 2.C.23.

2.C.20 Alaska Department of Environmental Conservation (Doc. #0814, p. 20-21)

Region 10’s proposed veto upends the State’s careful and considered management of the Pebble area and is inconsistent with the Alaska-specific law and circumstances discussed above.

Not unlike a bull in a china shop, Region 10 would disregard the federal government’s compacts with Alaska, unilaterally break the federal government’s promises, rob Alaska Natives of their diversity, and usurp the State’s prerogative to decide, for itself, whether, when, how to develop its mineral resources. Apparently anticipating these arguments, Region 10 asserts without discussion or analysis that

[n]othing in the ASA [Alaska Statehood Act], CILEA [Cook Inlet Land Exchange Act], ANILCA, or ANCSA, nor any other relevant authority, precludes the application of a duly enacted federal law, including Section 404(c) of the CWA, nor does any such law serve as a barrier to EPA’s use of Section 404(c) of the CWA to prohibit or restrict discharges. [PD at 2-16.]

But courts will “hold unlawful . . . agency action” that is “not in accordance with law” or that is taken “without observance of procedure required by law[.]” [5 U.S.C. § 704(A), (D).] The Statehood Act and the Cook Inlet Land Exchange are binding compacts that limit the federal government’s ability to dictate land use policy in Alaska, specifically including the area encompassing the Pebble deposit. [See *Texas v. New Mexico*, 482 U.S. 124, 128–29 (1987) (interstate compact when approved by Congress becomes a law of the United States, but also noting that “[a] Compact is, after all, a contract” subject to contractual interpretation and enforcement).]

Additionally, where statutes or laws appear to conflict, it is the specific provisions which control over the general. [Hinck v. United States, 550 U.S. 501, 506 (2007) (noting the “well-established principle” that “in most contexts, a precisely drawn, detailed statute pre-empts more general remedies”).] The Ninth Circuit has recognized that “Congress views Alaska as unique and intends Alaska-specific laws to trump more general laws in some instances[.]” [Wilderness Soc v. U.S. Fish & Wildlife Serv., 316 F.3d 913, 928 (9th Cir. 2003), rev’d on other grounds, The Wilderness Soc’y v. U.S. Fish & Wildlife Serv., 353 F.3d 1051 (9th Cir. 2003).] The specificity of the Alaska Statehood Act and the Cook Inlet Land Exchange reflect a deliberative process that produced a considered result. These provisions and obligations control over § 404(c)—described by one district court judge as “garbled” and “awkwardly written and extremely unclear.” [Mingo Logan Coal Co, Inc. v. EPA, 850 F. Supp.2d 133, at 134 (2012), rev’d, 714 F.3d 608 (D.C. Cir. 2013).]

For those reasons, Alaska believes Region 10’s proposed determination must be withdrawn. [These same points support the broader argument that Region 10 impinges on the State’s traditional right to manage its own land and natural resources, in contravention of the principles of federalism that structure the United States Constitution, the Tenth Amendment, and the Clean Water Act. For all the reasons detailed above, Alaska also makes and preserves these arguments in this Letter.]

EPA Response

EPA disagrees that the Agency’s action upends the State’s management of any land. State laws aimed at managing state resources do not supersede, amend, modify, or repeal the CWA or impinge on EPA’s CWA Section 404(c) authority. EPA’s action prohibits and restricts USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material – specifically, discharges of dredged or fill material associated with mining the Pebble deposit that would have certain adverse effects. Section 5 of the FD describes the defined area for prohibition and the defined area for restriction, within which EPA’s action limits USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD. EPA is acting under CWA Section 404(c) to prevent unacceptable adverse effects on anadromous fishery areas, see 33 USC 1344(c). EPA alone has authority to act under CWA Section 404(c).

With respect to the commenter’s contention that EPA’s action disregards the federal government’s compacts with Alaska and breaks the promises Congress made to the State of Alaska, including whether Alaska-specific laws such as the Cook Inlet Land Exchange Act should govern, see EPA’s responses to comments 2.C.17 and 2.C.26.

To the extent that the commenter implies that EPA’s action is “land use policy” or that EPA’s action impinges on the State’s traditional right to manage its own land and natural resources, in contravention of the principles of federalism that structure the United

States Constitution, the Tenth Amendment, and the Clean Water Act, please see EPA's responses to comments 2.C.8 and 2.C.21.

With respect to the commenter's assertion that EPA "rob[s] Alaska Natives of their diversity," EPA disagrees. Although not a basis for EPA's action, EPA has listened to and respects the diverse perspectives of all Alaska Native peoples in the Bristol Bay area, as described in Section 6.3 of the FD.

2.C.21 Alaska Department of Environmental Conservation (Doc. #0814, p. 31-34)

Region 10 fails to justify its Proposed Restriction over 309 square miles of primarily Alaska-owned land.

In addition to vetoing the project, Region 10 seeks to veto all future projects over an area 23 times the size of the proposed project which involves discharges with effects "similar or greater in nature and magnitude to the adverse effects of the May 2020 Plan."

Agency action is "irrational" when the agency fails to "provide[] a coherent and reasonable explanation of its exercise of discretion[.]" [Atl. Diving Supply, Inc. v. United States, 107 Fed. Cl. 244, 252 (2012) (citing Impresa Construzioni Geom. Domenico Garufi v. United States, 238 F.3d 1324, 1332-33 (Fed. Cir. 2001)).] The Proposed Restriction is highly irrational.

First, "similar or greater in nature and magnitude" to the effects of the proposed mine is not a workable standard. [If a permittee were to reduce the potential loss of streams by one foot, for example, is that project not prohibited? What if a permittee reduces the loss of streams by one foot, but gains an acre in wetlands loss? If the permittee were to follow a different schedule for its discharges of treated water, resulting in effects different in kind than those Region 10 believes would result under the proposed plan, how might the permittee determine whether these different effects are "similar or greater in nature and magnitude" than those of this mine plan?] No actual notice is provided to potential permittees as to what is prohibited.

Second, the Proposed Restriction is grossly disproportionate to Region 10's four findings. Each finding is (in theory) specific to the proposed mine at issue, which has a footprint of 13.1 square miles. Even if these findings were sound, they could not provide a basis for vetoing the specification of any other WOTUS beyond those in the mine footprint, much less all lands within a 309 square mile area. Region 10 did not account for all the factors in climate, geography, and hydrology in different areas of the watershed; differences in individual permits; or future technology developments.

Third, the Proposed Restriction's area was drawn based on the location of mining claims. [PD at 5-3. The proposed restriction contradicts the statements of Regional Administrator Casey Sixkiller, who stated that this proposed veto "does not apply to any other mine deposits" or projects elsewhere in Alaska. See EPA Press Release, <https://www.epa.gov/newsreleases/epa-proposes-protect-bristol-bays-salmon-fishery-subsistence-fishing-alaska-natives-0>. This statement misleads the public as to the scope of this proposed veto, and the precedent it sets.] No authority allows Region 10 to lock down land or water

based on the location of mining claims. EPA's CWA authority is limited to WOTUS, and EPA's § 404(c) authority must be based on effects of discharges into WOTUS on "fisheries"/"fishery areas" and three other resources—mine claims are neither mentioned nor implied.

Fourth, legislative history indicates that EPA's veto authority is limited to vetoing the issuance of a specific permit. The Senate justified its considered compromise to place the § 404 program under the jurisdiction of the Corps but give EPA a veto on the basis that all decisions will be made based on a single permit application:

Thus, the Conferees agreed that the Administrator . . . should have a veto over the selection of the site for dredge spoil disposal and over any specific spoil to be disposed of in any selected site. The decision is not duplicative or cumbersome because the permit application transmitted to the Administrator for review will set forth both the site to be used and the content of the matter of the spoil to be disposed. The Conferees expect the Administrator to be expeditious in his determination as to whether a site is acceptable or if specific spoil material can be disposed of at such a site. [Senate Consideration of the Report of the Conference Committee, s. 2770, 93rd Cong. 1st Sess. Oct. 4, 1972, reprinted in Legislative History of the Water Pollution Control Act Amendments of 1972, at 177 (emphasis added). Other portions of the Conference Report on H.R. 11896 and S. 2770 indicate this same understanding: ... Prior to the issuance of any permit to dispose of spoil, the Administrator must determine that the material to be disposed of will not adversely affect municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife or recreational areas in the specified site. Should the Administrator so determine, no permit shall issue. ...the Committee did not believe there could be any justification for permitting the Secretary of the Army to make determination as to the environmental implications of either the site to be selected or the specific spoil to be disposed of in a site. Thus, the Conferees agreed that the Administrator of the Environmental Protection Agency should have the veto over the selection of the site for dredged spoil disposal and over any specific spoil to be disposed of in any selected site. Env'l. Policy Div., A Legislative History of the Water Pollution Control Act Amendments of 1972, Vol. 1 177 (Comm. on Public Works 1973).]

EPA's veto may, at most, only be exercised only following its review of a specific "permit application" that has been "transmitted" and contains information about the "material to be disposed of" and the "specific spoil to be disposed of in a site." EPA has not received the future permit applications that its Proposed Restriction, locking down 309 square miles, preemptively vetoes. Such a sweeping power has never been understood to be conferred by § 404(c).

Fifth, EPA itself has recognized that this power was not intended to be exercisable "in advance of permit requests." In 1985, EPA proposed that Congress make "404(c) . . . a much more effective device" by allowing EPA to use it "in advance of permit requests" which would "mov[e] the program from a reactive to a proactive one" [Oversight Hearings on Section 404 of the Clean Water Act: Hearings before the Subcommittee on Environmental Pollution of the Committee on Environment and Public Works, 99th Cong. 41 (1985) (statement of Josephine Cooper, Assistant Administrator for External Affairs, EPA): We believe that 404(c) could be a much more effective device to designate certain areas as unsuitable for

dredged or fill material discharge when used in advance of permit requests. Therefore, we have been looking carefully at the potential of advanced designation of areas in which disposal of dredged and fill material would not be permitted. This concept is based upon a recognition that some wetlands are more threatened, have higher societal or are rarer, and require an extra measure of protection. If we can make even a few of those determinations in advance, with the appropriate State and local participation and cooperation, we will do a much better job of forestalling or precluding delay and controversy in the regulated community. We are in the initial stages of exploring that concept in a number of specific areas. Wetlands priorities. As I have already indicated in my remarks on advanced designation, we do see opportunities for moving the program from a reactive to a proactive one. In this regard, we think it is particularly important to give special attention to high value wetlands which are threatened by or experiencing significant losses...—revealing EPA’s understanding that EPA may not, as the law was written then and remains so now, use its veto “in advance of permit requests.”

Sixth, Region 10’s proposal to preclude development over a 309-square-mile area of state land amounts to a zoning ordinance. But “zoning . . . issues are traditional state law matters that implicate important state interests.” [Hansen v. City of Superior, Neb., No. 4:13CV3098, 2013 WL 4500694, at *2 (D. Neb. 2013).] This incursion into traditional state power violates the federalism principles enshrined in the U.S. Constitution as well as the Tenth Amendment, which “reserve[s]” “[t]he powers not delegated to the United States by the Constitution, nor prohibited by it to the States, . . . to the States respectively, or to the people.” [U.S. Const. Amend. X.]

Given that the 2020 Mine Plan calls for developing only a small portion of the entire deposit, it is likely—in fact, virtually certain—that any future economically viable mining plan would be deemed by Region 10 to have effects similar or greater in nature and magnitude to those deemed to result from the 2020 Mine Plan. [If, as EPA’s Cost Analysis suggests, the 2020 mine plan is not economically viable, then the 2020 mine plan is the floor of economic viability, not a ceiling, and any development necessarily will be of greater magnitude than the 2020 mine plan. See Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Proposed Determination for the Pebble Deposit Area, Southwest Alaska (EPA 2022) (“EPA Costs Analysis”) (reflecting EPA’s uncertainty about whether even the 2020 mine plan is economically viable).] The implications of the Proposed Restriction are staggering: if EPA may shut down areas of land (potentially containing, but not proven to contain, WOTUS) whenever it deems effects to aquatic resources generally unacceptable (whenever it pleases), EPA has just aggregated to itself a stunning power. EPA could grind development to a halt in much of Alaska— a wet state with over 174 million acres of wetlands that remain in a largely undeveloped state. There is nothing to indicate that EPA would not willing and able to exercise this same power nationwide.

EPA Response

See EPA’s response to comment 5.B.32.

EPA disagrees with the commenter that “legislative history” indicates that EPA’s authority is limited “to vetoing the issuance of a specific permit.” The text of Section 404(c) grants EPA broad authority to “prohibit the specification . . . of any defined area”

and to “deny or restrict the use of any defined area for specification . . . as a disposal site” as long as EPA makes the requisite unacceptable adverse-effect determination. EPA’s authority applies to “any defined area.” “Read naturally, the word ‘any’ has an expansive meaning.” *United States v. Gonzales*, 520 U.S. 1, 5 (1997). The CWA does not provide a definition for, or a process for identifying, “defined area,” but CWA Section 404 distinguishes between disposal sites that are specified by the Corps and “defined areas” that are identified by EPA. *See* 33 USC 1344(a), (c). Nothing in the text of CWA Section 404 suggests that Congress intended to limit EPA’s authority to only those locations that have been identified in a permit application or have been specified by the Corps. *See generally Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 609-10, 612-14 (D.C. Cir. 2013). In fact, the inclusion of EPA’s authority to “prohibit the specification . . . of any defined area” and to “deny or restrict the use of any defined area for specification . . . as a disposal site” reflects Congress’ intent that EPA’s authority reaches to “any defined area” regardless of whether those areas are at issue in a permit application. *See also* EPA’s response to comment 2.C.41.

Moreover, EPA disagrees with the commenter’s narrow interpretation, supported by a small slice of legislative history cited out of context, that EPA’s authority under Section 404(c) “is limited to vetoing the issuance of a specific permit.” *See Mingo Logan*, 714 F.3d at 615-616 (finding that legislative history statement referring to EPA’s determination pre-permit does not foreclosure EPA from making a post-permit determination and that the interpretation of Section 404(c) “does not present the very rare situation where the legislative history of a statute is more probative of congressional intent than the plain text”).

The commenter’s reference to the phrase in the legislative history, “prior to the issuance of any permit,” cannot be read to foreclose EPA from exercising its CWA Section 404(c) authority prior to a permit application or after permit denial. *See id.* at 615 (under Section 404(c), EPA retains authority to act “whenever” it determines that the statutory criteria are met).

Commenters (see comment 4.B.41) noted a statement in the Senate Debate on the Conference Report¹⁰ that EPA “should have the veto over the selection of the site for dredged spoil disposal and over any specific spoil to be disposed of in any selected site.” This language cannot be read to limit EPA’s authority to only address areas identified in a permit application or limit EPA’s authority to act prior to a permit application. First, there is nothing in this statement that limits the timing of EPA’s authority. Second, when viewed in context with the surrounding sentences, the statements reflect the Conferees’ acknowledgement that there was an existing permitting scheme for the discharge of

¹⁰ Even if Sen. Muskie’s remarks could be interpreted otherwise, a floor statement of a single legislator, even one central to the passage of the Clean Water Act, is not controlling even in analyzing legislative history, let alone the meaning of clear statutory text. *See Mims v. Arrow Fin. Servs., LLC*, 565 U.S. 368, 384 (2012).

dredged or fill materials and highlight the important role CWA Section 404(c) would provide for EPA, not USACE, regarding determining environmental implications of a site “to be selected” or the discharges “to be disposed of in a site”:

The Conferees were uniquely aware of the process by which the dredge and fill permits are presently handled and did not wish to create a burdensome bureaucracy in light of the fact that a system to issue permits already existed. At the same time, the Committee did not believe there could be any justification for permitting the Secretary of the Army to make determinations as to the environmental implications of either the site to be selected or the specific spoil to be disposed of in a site. Thus, Conferees agreed that the Administrator of the Environmental Protection Agency should have the veto over the selection of the site for dredged spoil disposal and over any specific spoil to be disposed of in any selected site.

Id.

Furthermore, the statement in the legislative history that “[t]he decision is not duplicative or cumbersome because the permit application transmitted to the Administrator for review will set forth both the site to be used and the content of the matter of the spoil to be disposed” does not mean that EPA is precluded from acting before USACE has received a permit application or any time before a USACE permit decision. As the next sentence suggests,¹¹ this language appears to be addressing potential concerns about EPA’s timing and Senate conferees’ desire that the Administrator “be expeditious in his determination” when there is a pending permitting process. *Id.*

Moreover, as discussed above, the text of Section 404(c) makes it clear that EPA has discretion to act under that section “whenever” EPA determines that the statutory criteria are met. 33 U.S.C. Section 1344(c); see *Mingo Logan*, 714 F.3d at 615. Accordingly, EPA has long construed Section 404(c) to authorize the Agency to prohibit, withdraw, deny, or restrict the use of any defined area for specification of a disposal site “before a permit is applied for, while an application is pending, or after a permit has been issued.” 44 Fed. Reg. at 58,076; see also *id.* at 58,077; 40 CFR 231.1 (a), (c).

EPA disagrees with another commenter (see comment 4.B.41) that asserts that “[b]oth the text and the legislative history of 404(c) make clear that Congress intended 404(c) to be a limited and constrained authority, with a high burden of proof.” The commenter referred to language from the House Debate on the Conference Report stating, “it is expected that disposal site restrictions or prohibitions shall be limited to narrowly defined areas.” 118 Cong. Rec. 33,766 (1972), reprinted in 1 Leg. History 236. The complete statement reads as follows: “Thus, it is expected that disposal site restrictions

¹¹ The next sentence reads as follows: “The Conferees expect the Administrator to be expeditious in his determination as to whether a site is acceptable or if specific spoil matter can be disposed of at such site.”

or prohibitions shall be limited to narrowly defined areas *where it can be clearly demonstrated that the discharge of dredged material at such specified location will have an unacceptable adverse effect on critical areas intended to be protected.*" *Id.* (Emphasis added). Reading the sentence as a whole clarifies that "narrowly defined areas" merely refers to areas where EPA can "clearly demonstrate[]" a basis for its action. And the legislative history, taken as a whole, confirms that Congress provided EPA, rather than USACE, the sole authority to exercise its scientific judgments when evaluating whether, where, and when discharges of dredged or fill material will result in the requisite unacceptable adverse effects. Furthermore, the text of Section 404(c) and EPA's regulations clarify the circumstances under which EPA is authorized to act. 33 USC 1344(c) ("whenever" the Administrator determines that the discharges will have an "unacceptable adverse effect" on the enumerated resources); 40 CFR 231.2(e) (defining "unacceptable adverse effect").

That commenter also cited the following language that appears in the conference report: "It is expected that until such time as feasible alternative methods for disposal of dredged or fill material are available, unreasonable restrictions shall not be imposed on dredging activities essential for the maintenance of interstate and foreign commerce." Here again, the context for that statement is important and cannot be read to limit the geographic scope of "any defined area" that may be the subject of EPA's action. The cited statement was made in the context of specific concerns about "dredging essential for the maintenance of interstate and foreign commerce." The conference report explicitly addressed EPA's CWA Section 404(c) authority in a separate paragraph. The full discussion states as follows:

The Secretary and the Administrator shall act promptly on dredging permits essential for the maintenance of interstate commerce because of the seasonal nature of dredging and the need to preschedule scarce dredging equipment.

It is expected that until such time as feasible alternative methods for disposal of dredged or fill material are available, unreasonable restrictions shall not be imposed on dredging activities essential for the maintenance of interstate and foreign commerce. Consistent with the intent of this Act, the conferees expect that the disposal activities of private dredgers and the Corps of Engineers will be treated similarly.

The conferees agree that the Administrator of the Environmental Protection Agency shall have authority to prohibit specification of a site and deny or restrict the use of any site for the disposal of any dredged or fill material which he determines will adversely affect municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.

1A Legislative History of the Water Pollution Control Act Amendments of 1972, at 325 (1973).

EPA disagrees with commenter's assertion regarding the 1985 statement. See EPA's response to comment 2.C.24.

Neither EPA's authority under CWA 404(c) generally nor this action specifically "amounts to a zoning ordinance" or "violates the federalism principles enshrined in the U.S. Constitution as well as the Tenth Amendment." As an initial matter, EPA's Section 404(c) action prohibits and restricts USACE's ability to specify certain waters as disposal sites for certain discharges – specifically, discharges of dredged or fill material associated with mining the Pebble deposit that would have certain adverse effects on waters of the United States. But EPA's Section 404(c) action does not violate the U.S. Constitution because the CWA is a valid enactment under the Commerce Clause. The commenter did not contend that EPA's Section 404(c) authority or its proposed action somehow exceed the scope of the Commerce Clause. Moreover, courts have long held that the federal environmental laws represent an appropriate exercise of Congressional authority even where federal environmental regulation may impose restrictions on individual actions. *See, e.g., Hodel v. Virginia Surface Mining and Reclamation Ass'n*, 452 U.S. 264, 282 (1981) ("Finally, we agree with the lower federal courts that have uniformly found the power conferred by the Commerce Clause broad enough to permit congressional regulation of activities causing air or water pollution, or other environmental hazards that may have effects in more than one State"). In *Hodel*, the Court rejected arguments that the Surface Mining Control and Reclamation Act, which required the reclamation of mining sites, illegally infringed on the "States' freedom to make decisions in areas of 'integral governmental functions'" or illegally "interfere[d] with the States' ability to exercise their police powers by regulating land use." *Id.* at 289.

EPA's action is not an invalid impingement upon powers reserved to the states under the Tenth Amendment. EPA's action does not "regulate the States as States," address matters that are "indisputably 'attribute[s] of state sovereignty,'" or create a situation in which it is "apparent that the States' compliance with the federal law would directly impair their ability 'to structure integral operations in areas of traditional governmental functions.'" *Hodel*, 452 U.S. at 287-88. Here, EPA's action does not compel Alaska to enact or administer a federal regulation; in other words, it does not regulate 'the States as States.'" As set forth above, EPA's action does not unlawfully intrude on state sovereignty; rather, it falls within the realm of environmental regulation, which courts repeatedly have held is an area appropriate for federal regulation. Finally, EPA's action does not impair Alaska's ability "to structure integral operations in areas of traditional governmental functions." *Hodel*, 452 U.S. at 288; *see also id.* at 291 ("The Court long ago rejected the suggestion that Congress invades areas reserved to the States by the Tenth Amendment simply because it exercises its authority under the Commerce Clause in a manner that displaces the States' exercise of their police powers.").

***Hansen v. City of Superior, Neb.*, cited by the commenter, is not on point and does not address federal action under either the Tenth Amendment or the Commerce Clause. That case involves a complaint by a property owner against a municipality and municipal officials arising out of the municipality’s initiation of nuisance abatement proceedings and application of local ordinances.**

2.C.22 Alaska Department of Environmental Conservation (Doc. #0814, p. 46-49)

2. The proposed veto violates the Clean Water Act.

a. EPA’s Clean Water Act authority, which extends only over WOTUS, must be predicated on an Approved Jurisdictional Determination.

In order to “deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site” under § 404(c), EPA is required to identify the WOTUS subject to such determination. This requires Region 10 to prepare an Approved Jurisdictional Determination (“AJD”) prior to initiating the procedures. [Had an AJD or other jurisdictional determination been completed, Alaska, as landowner, could have challenged it.] Region 10 has failed to do so. As such, its proposed veto must be withdrawn.

Section 404(c) is clear that in exercising its veto authority, EPA must identify a “defined area” within which the discharges will be prohibited. It is equally clear from the text of the statute that, in referring to a defined area, such area must consist of navigable waters as that term is defined in the Act, i.e., WOTUS. This follows from the fact that the Corps has the authority to issue “permits . . . for the discharge of dredged or fill material into the navigable waters at specified disposal sites.” [33 U.S.C. § 1344(a).] The § 404(c) authority is to authority to withdraw or prohibit such sites from specification, i.e., to block the issuance of a § 404 permit. Moreover, § 404(c) refers to the unacceptable effects of a “discharge into such area” and the term “discharge” means addition of pollutants to navigable waters (i.e., WOTUS). So the “area” in question must be WOTUS.

Region 10’s own paraphrasing of § 404(c) in the proposed veto indicates that Region 10 understands that any defined area must be WOTUS:

Section 404(c) of the CWA authorizes [EPA] to (1) prohibit or withdraw the specification of any defined area in waters of the United States as a disposal site, and (2) restrict, deny, or withdraw the use of any defined area in waters of the United States for specification as a disposal site [PD at ES-3 (emphasis added).]

It follows, then, that if EPA is identifying the defined area for purposes of a veto, it must determine whether such area actually constitutes WOTUS.

Region 10 has failed to do this.

In the executive summary of its proposed veto, Region 10 indicates that it is relying on the FEIS and ROD for the findings that the 2020 Mine Plan would result in discharges to WOTUS:

As demonstrated in the FEIS and ROD, construction and routine operation of the mine proposed in the 2020 Mine Plan would result in the discharge of dredged or fill material into waters of the United States, including streams, wetlands, lakes, and ponds overlying the Pebble deposit and within adjacent watersheds. [PD at ES-3.]

But neither the FEIS nor the ROD reference a final jurisdictional determination. Instead, these two documents rest on a Preliminary Jurisdictional Determination (“Preliminary JD” or “PJD”) prepared by the Corps. The FEIS makes clear that its references to WOTUS are based on the Corps Preliminary JD, which is included as Appendix J to the FEIS. [FEIS, Ch. 3.1, n.1 (“Note that in Chapter 3 and Chapter 4 [of the FEIS], waters of the US (WOUS) as defined under the Clean Water Act and determined to be jurisdictional under US Army Corps of Engineers (USACE) authority (see Appendix J for the Preliminary Jurisdictional Determination from USACE) are discussed collectively with wetlands and other waters; all WOUS, wetlands, or other waters are together termed “wetlands and other waters.”).] The Corps’ ROD, of course, relies on the FEIS; but it does not make any independent reference to the PJD or any other formal determination of jurisdiction.

This is fatal to the proposed veto. [While relying on a preliminary jurisdictional determination (“PJD”) prepared by a consultant is standard practice in issuing § 404 permits, doing so is insufficient in the context of a § 404(c) veto. EPA’s authority must be clearly delineated, so that EPA may carry its burden of demonstrating that it has the power to act pursuant to § 404(c).] A Preliminary JD is not a determination of jurisdiction. According to Corps regulations, Preliminary JDs are “written indications that there may be waters of the United States on a parcel or indications of the approximate location(s) of waters of the United States on a parcel. Preliminary JDs are advisory in nature and may not be appealed.” [33 C.F.R. § 331.2 (emphasis added).] A Corps Regulatory Guidance Letter provides further explanation:

When the Corps provides a PJD, or authorizes an activity through a general or individual permit relying on a PJD, the Corps is making no legally binding determination of any type regarding whether jurisdiction exists over the particular aquatic resource in question. [U.S. Army Corps of Engineers, Regulatory Guidance Letter (“RGL”) 16-01 at p. 3 (Oct. 2016) (emphasis added).]

According to the Corps, a PJD’s “preliminary” finding that there “may” be WOTUS is emphatically “no legally binding determination of any type.” This stands in stark contrast to an AJD. The Corps regulations define an AJD as:

a Corps document stating the presence or absence of waters of the United States on a parcel or a written statement and map identifying the limits of waters of the United States on a parcel.

The regulations go on to state that AJDs are

[a] definitive, official determination that there are, or that there are not, jurisdictional aquatic resources on a parcel and the identification of the geographic limits of jurisdictional aquatic resources on a parcel can only be made by means of an AJD. [RGL 16-01, at p. 2.]

Here, no AJD was prepared by the Corps, and EPA has not made any independent determination of jurisdiction. “Because ‘administrative agencies may act only pursuant to authority delegated to them by Congress,’ an agency must ‘point to something’” that “‘gives it the authority’ to take the specific action at issue.” [Clean Air Council v. Pruitt, 862 F.3d 1, 9 (D.C. Cir. 2017) (internal quotation marks omitted).] Here, EPA cannot make a determination of a “defined area” of WOTUS for purposes of § 404(c) without affirmatively determining what waters within that defined area are, in fact, subject to Clean Water Act jurisdiction.

In addition to rendering its action baseless, Region 10’s failure to make a jurisdictional determination chills the use of all waters encompassed within the prohibited and restricted areas; not just the (undelineated) WOTUS.

Moreover, the jurisdictional determination must occur at the outset of the process. The statutory language requires that a § 404(c) determination be made through notice and comment. Agencies must establish their jurisdiction to act before they act. It follows, then, that the public notice of a proposed § 404(c) determination must be based on a determination that EPA has jurisdiction in the first place. EPA regulations support this conclusion: they require the identification of the “defined area” at the commencement of the process. Under those regulations, the Regional Administrator may initiate § 404(c) proceedings if he or she “has reason to believe after evaluating the information available to him [or her] . . . that an ‘unacceptable adverse effect’ could result from the specification or use for specification of a defined area for the disposal of dredged or fill material, he [or she] may initiate the following actions” [40 C.F.R. § 231.3(a) (emphasis added).] The public notice of the proposed determination must identify the “location of the existing, proposed or potential disposal site, and a summary of its characteristics” [Id. § 231(b)(2).] The Regional Administrator cannot possibly identify the location of the disposal site subject to the potential veto if he or she has not evaluated the agency’s jurisdiction over the site in question.

Thus, for Region 10 to proceed, it must withdraw this proposed veto and perform a formal jurisdictional determination over the aquatic resources within: (1) the Pebble Mine Plan, (2) those additional acreages identified in the proposed § 404(c) determination for potential mine expansion, and (3) the 309 square mile area it seeks to restrict. [The State incorporates its February 7, 2022 Comment Letter to EPA’s proposed definition of WOTUS for guidance to Region 10 in making these determinations.] If Region 10 does not do so, it has not accurately determined a defined area subject to the § 404(c) veto authority, and it has not fully informed the public, including the State of Alaska as the land owner, whether it, in fact, has jurisdiction over the aquatic resources. Without having prepared an AJD covering all the areas in question, EPA may not proceed.

EPA Response

EPA disagrees with the commenter's assertion that CWA Section 404(c) or its implementing regulations requires that EPA perform and publish an AJD at the time of the PD or FD or at any stage of the CWA Section 404(c) review process. EPA disagrees that performing or obtaining an AJD—or any other specific process—is a prerequisite to initiation or exercise of EPA's CWA Section 404(c) authority.

Nothing in Section 404(c) of the CWA or EPA's regulations requires an AJD. The term "Approved Jurisdiction Determination" is defined in USACE regulations at 33 CFR 331.2 as "a Corps document stating the presence or absence of waters of the United States on a parcel or a written statement and map identifying the limits of waters of the United States on a parcel." USACE is also guided by Regulatory Guidance Letter (RGL) 16-01, which indicates that AJDs "will be used if the Corps is identifying the geographic limits of jurisdictional aquatic resources on a parcel" (USACE 2016: Pages 2-3). These USACE regulations and guidance demonstrate that jurisdictional determinations (JDs), including AJDs, are tools used by USACE to help implement Section 404 of the CWA and Sections 9 and 10 of the Rivers and Harbors Act of 1899 (RHA). USACE's regulations authorize the preparation and use of JDs, including AJDs, as a service to the public. USACE, as the CWA Section 404 permitting authority, has developed a practice of providing JDs when requested, and in appropriate circumstances. Regulatory Guidance Letter (RGL) 16-01.

While the regulations implementing the CWA and RHA authorize "district engineers to issue formal determinations of the applicability of the [CWA or RHA] to . . . activities or tracts of land and the applicability of general permits or statutory exemptions to proposed activities," such determinations are not required by either statute, and the regulation at 33 CFR 320.1(a)(6) makes their use discretionary. In other words, while the CWA Section 404 regulatory program, including CWA Section 404(c), applies only to waters of the United States as that term is used in CWA Section 502(7), neither the CWA nor its implementing regulations require use of an AJD.

The commenter contends that, had an AJD or other jurisdictional determination been completed, Alaska, as landowner, could have challenged it. The fact that an AJD may be subject to challenge does not create any obligation for EPA to prepare one. Moreover, as discussed above, AJDs are a tool used and a service performed by USACE under USACE's policies and practices. EPA's CWA Section 404(c) review, while it may use information developed by USACE, is a separate and independent process from that undertaken by USACE under its CWA Section 404 authorities and implementing regulations.

With respect to the commenter's contention that the statutory language requires EPA to make its CWA Section 404(c) determination "through notice and comment," EPA has done so. The PD identified defined areas within which the proposed action would apply action, including the streams, wetlands and other aquatic features within those defined areas.

Region 10 provided the public with sufficient notice and opportunity to comment on the defined areas. *See* 40 CFR 231.3(b)(2) (requiring that EPA provide the public with notice of the “location of the existing, proposed or potential disposal site, and a summary of its characteristics”). Nothing more is required.

It does not appear that the commenter disputes that the defined areas contain waters of the United States. Nonetheless, EPA notes that the administrative record for the FD demonstrates that the defined areas for prohibition and restriction contain waters of the United States. The FEIS and the FD contain maps of aquatic resources that were available to the public for review and comment (*see, e.g.*, Figures 3-5 through 3-9 and Figure 4-3 of the PD, RD, and FD). EPA considered this mapping, as well as other information about the aquatic resources within the defined areas, such as field data presented in PLP’s environmental baseline document (PLP 2011), USACE’s Preliminary Jurisdiction Determination (HDR 2019), and PLP’s 2020 permit application (PLP 2020c), and stream surveys conducted by ADF&G and others (*e.g.*, Brekken et al. 2022; Woody and O’Neal 2010). *See* Box 4-3 of the FD for specific information on project area aquatic resource mapping. Specific to documented anadromous fish streams within the defined areas, the record demonstrates that these streams are relatively permanent and are either themselves traditional navigable waters or flow into downstream traditional navigable waters (*see, e.g.*, ADF&G 2022a; Giefer and Graziano 2022; USGS 2022b). For both tributaries to documented anadromous fish streams and wetlands and other waters that support anadromous fish streams, the record demonstrates that at least some of these aquatic resources within the defined areas are waters of the United States by virtue of being relatively permanent and flowing to downstream traditional navigable waters either directly or indirectly by means of other tributaries (*see, e.g.*, USACE 2020a; USFWS 2021; USGS 2022).

With respect to the commenter’s contention that EPA’s failure to make a publicly available jurisdictional determination “chills” the use of all waters encompassed within the prohibited and restricted areas, EPA disagrees. Prospective project proponents may seek an FD applicability evaluation at any time.

Contrary to the commenter’s assertion, EPA need not, and in fact, could not have withdrawn the PD for lack of an AJD or other formal jurisdictional analysis. *Trout Unlimited v. Pirzadeh*, 1 F.4th 738, 757 (9th Cir. 2021) (holding that 40 CFR 231.5(a) allows the EPA to withdraw a proposed determination only when an “unacceptable adverse effect” on specified resources is not “likely”).

To the extent the commenter asserts that EPA must identify a “defined area” within which its CWA Section 404(c) action applies, EPA agrees. To the extent the commenter asserts that EPA has not sufficiently identified the defined area that is the subject of this action,

EPA disagrees. The FD identifies the defined area with sufficient specificity as required by the Act. *See* Section 5 of the PD, RD, and FD.

To the extent the commenter asserts that EPA's action can only apply to "waters of the United States," as that term is used in CWA Section 502(7) (hereafter waters of the United States), EPA agrees. EPA's action is consistent with this point. Section 5.1 of the FD explicitly states that the FD prohibits "the specification of waters of the United States within the Defined Area for Prohibition, as identified in Section 5.1.1, as disposal sites for the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan." (Emphasis added). Section 5.1.1 also explicitly states that "[t]he Defined Area for Prohibition identifies the geographic boundary within which the prohibition applies to waters of the United States." (Emphasis added). Similarly, Section 5.2 of the FD explicitly states that the FD restricts "the use of waters of the United States within the Defined Area for Restriction, as identified in Section 5.2.1, for specification as disposal sites for the discharge of dredged or fill material associated with future proposals to construct and operate a mine to develop the Pebble deposit . . ." (Emphasis added). EPA has revised Section 5.2.1 of the FD to make explicitly clear that the Defined Area for Restriction identifies the geographic boundary within which the restriction applies to waters of the United States.

To the extent the commenter asserts that each particular portion of jurisdictional waters (*e.g.*, every linear foot of jurisdictional stream or every square foot of jurisdictional wetland) within the defined areas must be precisely mapped, EPA disagrees. As described above, this CWA Section 404(c) action applies to all waters of the United States within the defined areas. To the extent the commenter contends that EPA's regulations support its conclusion that EPA must map and make a jurisdictional determination for each potential water within the defined areas for prohibition and restriction at the outset of the CWA Section 404(c) review process, the commenter merely repeats its statutory argument. *See* EPA's response above.

To the extent the commenter asserts EPA cannot rely on the FEIS and ROD because those documents in turn cite to a PJD rather than an AJD, EPA disagrees. EPA agrees that a PJD is not a final agency action and is not considered determinative of CWA jurisdictional status. EPA, however, does not rely on USACE's determinations in the PJD. Instead, it relies upon the factual information contained in the FEIS and ROD demonstrating that the defined areas contain relatively permanent waters and adjacent wetlands with continuous surface connection to relatively permanent waters or traditional navigable waters. The commenter does not make any substantive assertion that these waters are not, in fact, waters of the United States. Rather, the commenter's sole assertion appears limited to an argument that EPA has not performed a formal Approved Jurisdictional Determination (AJD).

To the extent the commenter “incorporate[d] its February 7, 2022 Comment Letter to EPA’s proposed definition of WOTUS for guidance to Region 10 in making [waters of the United States] determinations” related to this CWA Section 404(c) action, information on how to define waters of the United States is within the authority of EPA and USACE and is outside the scope of this Section 404(c) action.

2.C.23 Alaska Department of Environmental Conservation (Doc. #0814, p. 49-50)

b. Region 10 disregards cooperative federalism.

The CWA “envisions ‘cooperative federalism’ in the management of the nation’s water resources.” [Catskill Mountains Chapter of Trout Unlimited, Inc. v. EPA, 846 F.3d 492, 502 (2d Cir. 2017) (citing *New York v. United States*, 505 U.S. 144, 167 (1992) (referring to the Act as an example of “cooperative federalism”)).] It “anticipates a partnership between the States and the Federal Government.” [Arkansas v. Oklahoma, 503 U.S. 91, 101, 112 (1992).] In this partnership, the federal government plays a supportive role: the CWA expressly “recognize[s], preserve[s], and protect[s] the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources . . .” [33 U.S.C. § 1251(b).] Much of the Supreme Court’s CWA jurisprudence has been dedicated to protecting the carefully crafted balance of federal and state interests. [See, e.g., *Rapanos v. United States*, 547 U.S. 715, 738 (2006) (plurality opinion) (“We ordinarily expect a ‘clear and manifest’ statement from Congress to authorize an unprecedented intrusion into traditional state authority. . . . The phrase ‘the waters of the United States’ hardly qualifies.”); *Solid Waste Agency of N. Cook Cty. v. U.S. Army Corps of Eng’rs*, 531 U.S. 159, 174 (2001) (discussing whether the executive branch’s interpretation of the Clean Water Act “alter[ed] the federal-state framework by permitting federal encroachment upon a traditional state power”).]

“[U]nless Congress conveys its purpose clearly, it will not be deemed to have significantly changed the federal–state balance.” [United States v. Bass, 404 U.S. 336, 349 (1971).] The Supreme Court has further recognized “land use” as “a function traditionally performed by local governments.” [See *Hess v. Port Auth. Trans-Hudson Corp.*, 513 U.S. 30, 44 (1994).] To abide by Supreme Court caselaw, Region 10 must interpret § 404(c) in a manner that avoids “intrusion into traditional state authority” and reinforces Congress’ role as the federal representative of states’ interests. [Rapanos, 547 U.S. at 738.]

Region 10’s proposal to veto the entire project and shut down 309 square miles for development fails to do this. Region 10 envisions a “partnership” that is not cooperative—it is combative. And it usurps the States’ roles under the CWA.

The Corps’ abrupt cessation of communication about the project with ADEC and ADNR prior to the issuance of its November 2020 ROD underscores this problem. At the time, ADEC was preparing Alaska’s § 401 certification. ADNR, as land manager, depends on this communication to fully understand the Corps’ compensatory mitigation requirements and the extent to which they require restrictions on state-

owned lands beyond the currently leased areas. ADEC also requested to participate in the 404(b)(1) discussion, and was denied. The Corps denied Alaska's request to participate in PLP's appeal of the Corps' denial of the § 404 permit. Walling Alaska off from such an important and consequential project does not reflect the type of partnership envisioned by the CWA and enforced by the Supreme Court. This treatment also squanders valuable, and limited, government resources by requiring agencies on either side to duplicate work.

EPA Response

With respect to the commenter's contention that EPA disregards cooperative federalism, EPA disagrees. See EPA's response to comment 2.C.8.

To the extent that the commenter implies that EPA's exercise of its CWA Section 404(c) authority to prohibit and restrict the specification of waters of the United States as disposal sites for the discharge of dredged or fill material is somehow governing "land use," and therefore intrudes into the State's traditional authority, EPA disagrees. Although Section 101(b) of the CWA expresses Congress' policy "to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his authority under this chapter," it does not abrogate the federal authorities granted by Congress in the remainder of the Act, including CWA Section 404(c). See EPA's responses to comments 2.C.8, 2.C.20, and 2.C.21.

EPA is acting well within its Congressionally granted federal authority and the FD does not unlawfully impinge upon state land use authority or raise other federalism concerns. EPA is taking this action because it has determined, pursuant to CWA Section 404(c), that the discharges of dredged or fill material into waters of the United States evaluated in the FD will result in unacceptable adverse effects on anadromous fishery areas that support abundant, genetically diverse wild Pacific salmon populations in the SFK, NFK, and UTC watersheds. In CWA Section 404(c), Congress expressly authorized EPA to prohibit, deny, restrict or withdraw specification of disposal sites where discharges of dredged or fill material into such disposal sites would result in unacceptable adverse effects to, *inter alia*, fishery areas (including spawning and breeding areas). In so authorizing EPA, Congress necessarily understood that EPA action under CWA Section 404(c) to limit the use of defined areas as disposal sites would affect projects that require the discharge dredged or fill material. In addition, Congress' explicit references to statutorily enumerated resources is evidence that Congress deemed protection of those resources from unacceptable adverse effects, as determined by EPA, as having a clear federal interest.

As the commenter points out, EPA's authority to regulate under the CWA is limited to waters of the United States, and EPA's CWA Section 404(c) action for the Pebble deposit

area is so limited. EPA's action directly regulates only the use of waters of the United States as disposal sites. Section 5.1 of the FD explicitly states that the FD prohibits "the specification of waters of the United States within the Defined Area for Prohibition, as identified in Section 5.1.1, as disposal sites for the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan." (emphasis added). Section 5.1.1 also explicitly states that "[t]he Defined Area for Prohibition identifies the geographic boundary within which the prohibition applies to waters of the United States." (emphasis added). Similarly, Section 5.2 of the FD explicitly states that the FD restricts "the use of waters of the United States within the Defined Area for Restriction, as identified in Section 5.2.1, for specification as disposal sites for the discharge of dredged or fill material associated with future proposals to construct and operate a mine to develop the Pebble deposit . . ." (emphasis added). EPA has revised Section 5.2.1 of the FD to make explicitly clear that the Defined Area for Restriction identifies the geographic boundary within which the restriction applies to waters of the United States. The fact that EPA's action may incidentally affect projects that require the discharge of dredged or fill material does not transform EPA's action into a land use regulation or implicate questions of federalism.

The commenter also cites *Rapanos v. United States* for the proposition that "[t]he phrase 'the waters of the United States' hardly qualifies" as the "clear and manifest" statement from Congress needed to authorize an intrusion into traditional state sovereignty. But the commenter's reliance on *Rapanos* is misplaced. *Rapanos* was concerned with the definition of waters of the United States. *Rapanos v. United States*, 547 U.S. 715, 716 (2006) (citing 33 USC 1251(b)). Here, EPA is exercising its long-held and well-established authority to regulate waters of the United States under the CWA.

With respect to the commenter's position that EPA's action would shut down 309 square miles for development, EPA disagrees. First, as described above, EPA's action only applies to waters of the United States and is not concerned with any development that does not impact waters of the United States. Second, EPA's action only limits USACE's ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill – specifically, discharges of dredged or fill material associated with mining the Pebble deposit that would have certain adverse effects. Section 5 of the FD describes the defined area for prohibition and the defined area for restriction, within which EPA's action limits USACE's ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. Section 5 of the FD identified the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD. *See also* EPA's response to comment 5.B.32.

With respect to the commenter's characterization of the State of Alaska's communications with USACE, such communications are outside the scope of this action.

Finally, to the extent the commenter contends that valuable and limited government resources are squandered by multiple agencies performing “duplicate work,” EPA agrees. This is one of EPA’s many reasons for acting now to affirm its assessment of the effects of the discharges of dredged or fill material evaluated in the FD. By acting now, based on an extensive and carefully considered record, EPA promotes regulatory certainty for all stakeholders and helps avoid unnecessary expenditure of resources. See Section 2 of the FD.

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c. The timing of this veto raises concerns that must be addressed.

i. Issuing a veto following the Corps’ denial of a permit is inconsistent with the purpose of § 404(c).

As EPA itself has recognized, “one of the basic functions of § 404(c) is to police the application of the 404(b)(1) guidelines.” [44 FR 58078.]

Section 404(c) was enacted as a compromise between two proposals: a House proposal for a § 404 program wholly administered by the Corps and a Senate proposal for a 404 program wholly administered by EPA. [The House proposed veto gave the Corps the ability to override any prohibition of an area for disposal by the EPA upon a finding of no other economically feasible options. H.R. 11896, 92nd Cong. § 404 (1972); SB 2770, 92nd Cong. § 402(m) (1971).] By giving the Corps jurisdiction to administer the § 404 permitting program, but EPA a veto power over permitting decisions, Congress compromised. That compromise made perfect sense, given the agencies’ differing core missions: the Corps’ is to protect navigation, while EPA’s is to protect the environment. By giving EPA a limited veto power over permitting decisions, Congress envisioned EPA acting as an environmental “check” on the Corps’ exercise of its navigability power. [Envtl. Policy Div., A Legislative History of the Water Pollution Control Act Amendments of 1972, Vol. 2 1389 (Comm. on Public Works 1973) (“If we eliminate those two checks by the only agency [the EPA] we have to evaluate environmental damages... it means releasing [the Corps] from all control.”). This statement was made by Senator Muskie, the chief sponsor of the CWA, on the senate floor.]

When a permit has been denied, of course, there is nothing to “check”—or, using EPA’s own terminology, there is nothing to “police.” The power Region 10 now asserts—the power to halt a project at any stage, [Region 10 cites *Mingo Logan Coal Co. v. EPA*, for the proposition that EPA may exercise its veto power “whenever” it alone deems it necessary. 714 F.3d 608, 612–13 (D.C. Cir. 2013) (*Mingo Logan* 2013). But the *Mingo Logan* 2013 court is readily distinguishable. No court has held that EPA has the broad, unconstrained power to preemptively prohibit development on an area of land 23 times the size of the proposed project’s footprint.] even after a permit has been denied—is entirely inconsistent with §404(c) oversight purpose. Such a power injects only additional uncertainty and unpredictability into the permitting process. [EPA’s veto of this project would set precedent. If EPA has authority to veto this project before a permit decision has been made, it can veto any project before a permit decision has

been made. This injects uncertainty into the regulatory process. Increased uncertainty creates increased financial risk. This veto is likely to have the effect of deterring investment in other projects requiring § 404 permits. See David Sunding, *Economic Incentive Effects of EPA's After-the-Fact Veto of a Section 404 Discharge Permit Issued to Arch Coal* (May 30, 2011). The fallout from decreased domestic and foreign investment would be significant: the Corps processes approximately 60,000 permits a year, and billions of investment dollars per year depend on these permits. 4 FR 45749 (Aug. 30, 2019). Region 10's proposed veto undermines the legitimacy and predictability of the § 404 permitting process, and in so doing, generates untenable regulatory uncertainty.]

ii. EPA's departure from its policy against issuing a § 404(c) veto while the permit process remains ongoing is unacknowledged and unexplained.

Region 10 would veto a project whose permit-appeal process with the Corps has yet to be completed as well as countless projects whose permitting processes have yet to begin. This action departs from EPA's prior position that the 404(c) veto is "reactive" [Oversight Hearings on Section 404 of the Clean Water Act: Hearings before the Subcommittee on Environmental Pollution of the Committee on Environment and Public Works, 99th Cong. 41 (1985) (statement of Josephine Cooper, Assistant Administrator for External Affairs, EPA): We believe that 404(c) could be a much more effective device to designate certain areas as unsuitable for dredged or fill material discharge when used in advance of permit requests. . . .As I have already indicated in my remarks on advanced designation, we do see opportunities for moving the program from a reactive to a proactive one. In this regard, we think it is particularly important to give special attention to high value wetlands which are threatened by or experiencing significant losses...] in nature and should be used only as a "tool of last resort" [44 FR 58080.] after the permitting process has been "exhausted." [A comment published with EPA's regulations recognize that "the section 404 referral process will normally be exhausted" before a § 404(c) veto is considered: "In cases involving a proposed disposal site for which a permit application is pending, it is anticipated that the procedures of the section 404 referral process will normally be exhausted prior to any final decision of whether to initiate a 404(c) proceeding." See 40 C.F.R. § 231.3(a)(2) (emphasis added).] Because Region 10's proposed veto would depart from this, a "detailed justification" is needed. [An agency must provide a "more detailed justification" for a change in position if the agency's prior position "engendered serious reliance interests." *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009); see also *Smiley v. Citibank (South Dakota)*, 517 U.S. 735, 742 (1996). "In such cases it is not that further justification is demanded by the mere fact of policy change; but that a reasoned explanation is needed for disregarding facts and circumstances that underlay or were engendered by the prior policy." *Fox*, 556 U.S. at 515–16.] None was given.

EPA reiterated this position twice [In 2019, EPA explained its decision to withdraw its 2014 proposed veto of the Pebble project in part by the fact that "there are other processes available now, including the 404(q) MOU process, for EPA to resolve any issues with the Corps as the record develops. EPA believes these processes should be exhausted prior to EPA deciding, based upon all information that has and will be further developed, to use its section 404(c) authority." *Bristol Bay Econ. Dev. Corp. v. Hladick*, 454 F. Supp. 3d 892, 898 (D. Alaska 2020), *aff'd in part, rev'd in part and remanded sub nom. Trout Unlimited*

v. Pirzadeh, 1 F.4th 738 (9th Cir. 2021) (emphasis added).], [In a press release issued July 30, 2019, EPA explained that the decision to withdraw the previous proposed Pebble mine veto “restores the proper process for 404(c) determinations, eliminating a preemptive veto of a hypothetical mine and focusing EPA’s environmental review on an actual project before the Agency[.]” EPA Press Release, EPA Withdraws Outdated, Preemptive Proposed Determination to Restrict Use of the Pebble Deposit Area as a Disposal Site (July 30, 2019), retrieved from <https://www.epa.gov/newsreleases/epa-withdraws-outdated-preemptive-proposed-determination-restrict-use-pebble-deposit>.] in 2019, explaining that “other processes are available and better-suited for EPA to resolve issues with the Corps as the record develops” and specifically provided, by way of example, “the well-understood elevation process under CWA section 404(q) and the NEPA process.” [Id.]

EPA’s reasoning was sound: a veto should be based “upon all information” [Id.] generated throughout the permitting process. Here, EPA does not have the benefit of Alaska’s Department of Fish & Game state permitting decisions, and the mitigation that our own Fish & Game experts would require to protect our fish and fish habitat; Alaska’s CWA § 401 certification, and additional measures the State would take to protect water quality; or an approved compensatory mitigation plan, which would inform EPA’s assessment of the proposed project’s net effects.

“An agency may not . . . depart from a prior policy sub silentio or simply disregard rules that are still on the books.” [Fox Television Stations, Inc., 556 U.S. at 515 (citing United States v. Nixon, 418 U.S. 683, 696 (1974)); see Atchison, Topeka & Santa Fe Ry. v. Wichita Bd. of Trade, 412 U.S. 800, 808 (1973) (plurality opinion) (“Whatever the ground for the [agency’s] departure from prior norms, . . . it must be clearly set forth so that the reviewing court may understand the basis of the agency’s action and so may judge the consistency of that action with the agency’s mandate.”); W. States Petroleum Ass’n v. EPA, 87 F.3d 280, 284 (9th Cir.1996) (stating that an agency “must clearly set forth the ground for its departure from prior norms”).] Region 10 has provided no explanation for this change. Any attempt to cure this defect by providing such explanation in a finalized determination will come too late, because the public will not have had an opportunity to comment on it.

EPA Response

EPA disagrees that EPA’s CWA Section 404(c) authority is only “a limited veto power over permitting decisions.” The legislative history cited by the commenter does not suggest that EPA is precluded from acting in the absence of a permit application or after a USACE permit denial. The cited statements were made during the Senate debate of a proposed amendment to give the USACE authority to issue permits to discharge dredged and fill materials, which was ultimately rejected. The Senate bill would have given EPA sole authority to issue such permits. S. 2770, 92d Cong., Section 2 (Nov. 2, 1971), 2 LEGIS. HIST. at 1388, 1392 (proposed Section 402(m)). In addition, all of these statements were made prior to the agreement made in Conference to enact Section 404(c), which ultimately provided EPA with broad authority to act “whenever” it makes the required determinations under the statute. 33 USC 1344(c). See EPA’s response to comment 2.C.21.

EPA disagrees that the Agency's use of CWA Section 404(c) after USACE has denied a permit is inconsistent with the purpose of Section 404(c). The commenter points out that "one of the basic functions of 404(c) is to police the application of the 404(b)(1) guidelines" (44 Fed. Reg. 58078 (Oct. 9, 1979)) and to be a "check" on USACE. EPA agrees, as evidenced by its definition of "unacceptable adverse effects," which involves consideration of the "relevant portions of the section 404(b)(1) guidelines." 40 CFR 231.2. EPA disagrees, however, that EPA's role is limited "to polic[ing] the application of the 404(b)(1) guidelines" or "check[ing]" USACE during the permitting process. EPA also disagrees with the commenter's position that when a permit has been denied, there is nothing to "police." The Agency has authority to act under CWA Section 404(c) "whenever" it makes the required determinations under the statute, including before a permit application has been submitted, at any point during the permitting process, or after a permit has been issued. 33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (D.C. Cir. 2013)). Nothing in the CWA, EPA's CWA Section 404(c) regulations, or any existing case law precludes EPA from exercising its authority when USACE has denied a permit. The commenter argues that *Mingo Logan* supports EPA's position that the Agency may act under CWA Section 404(c) "whenever" it makes the required determination under the statute; however, it claims, without explanation, that the *Mingo Logan* decision does not apply here. The commenter mischaracterizes EPA's authority, which, as explained above, is not limited to "vetoing" a particular disposal site as specified in a USACE permit. EPA also disagrees with the commenter's characterization that EPA's action would prohibit all development within the defined areas. See EPA's responses to comment 2.C.1 and 5.B.32.

Indeed, EPA has good reason to act now to, among other things, promote regulatory certainty by facilitating planning by developers, facilitating comprehensive rather than piecemeal protection of important aquatic resources, and eliminating frustrating situations in which someone spends time and money developing a project for an inappropriate site and learns at an advanced stage that they must start over. 44 Fed. Reg. 58077 (Oct. 9, 1979). By acting now, based on an extensive and carefully considered record, EPA, USACE, and the regulated community can also avoid unnecessary expenditure of resources. EPA further notes that denial of PLP's permit application does not address any other potential plan to mine the Pebble deposit that would have adverse effects the same, similar, or greater than the adverse effects of the 2020 Mine Plan. See Section 2 of the FD for a detailed description of EPA's CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency's rationale for acting now.

The commenter asserts that if EPA can act now before a permit decision has been made, the Agency can "veto any project before a permit decision has been made," which the commenter contends would deter investment in other projects requiring CWA Section

404 permits. As noted above and further described in Section 2 of the FD, EPA is authorized to act under CWA Section 404(c) before USACE makes permitting decisions and it is often good public policy for the Agency to do so.¹² Although the Agency's future use of its Congressionally granted authority is not relevant to EPA's determination in this action, the commenter's assertion that EPA's action in this matter will lead to unrestrained and inappropriate use of CWA Section 404(c) is also belied by two factors. First, EPA has used its CWA Section 404(c) authority judiciously, including in instances before a permit application has been submitted, at various stages during the permitting process, and after permit issuance. Prior to this action, EPA had only initiated the process 30 times and only issued 13 final determinations in the 50 years since Congress enacted CWA Section 404(c). Second, EPA must make and support the required determination under the statute. EPA's determination of an "unacceptable adverse effect" in this and in every CWA Section 404(c) action necessarily involves a case-by-case determination that accounts for the unique characteristics of the aquatic resource that would be affected by discharges of dredged or fill material.

To the extent that the commenter asserts that EPA's use of CWA Section 404(c) injects uncertainty into the regulatory process, EPA disagrees. See Section 2 of the Final Determination for EPA's discussion of how its action promotes regulatory certainty.

With respect to the commenter's position that EPA's use of CWA Section 404(c) while the permit process is ongoing is an unacknowledged and unexplained change in prior policy, EPA disagrees. EPA has always taken the position that "section 404(c) may be exercised before a permit is applied for, while an application is pending, or after a permit has been issued." 44 Fed. Reg. 58076 (Oct. 9, 1979). Disregarding EPA's position in the preamble to the Agency's CWA Section 404(c) regulations, the regulations themselves, and EPA's prior practice, the commenter cites to a 1985 statement from the Assistant Administrator for External Affairs that does nothing to undermine EPA's position that it can act before a permit application has been filed. The Assistant Administrator's statement that Section 404(c) could be effectively used to "designate certain areas as unsuitable for dredged or fill material discharge when used in advance of permit requests" and that the Agency saw opportunity to do so supports rather than contradicts EPA's longstanding position that the Agency can act "whenever" it makes the required determination under the statute. Indeed, on May 17, 1985, EPA took one such opportunity when it issued a proposed determination to prohibit, deny, or restrict the specification, or the use for specification, of an area as a disposal site for public notice and comment for the area known as the Bayou aux Carpes swamp. 50 Fed. Reg. 20602 (May 17, 1985). In the Bayou aux Carpes

¹² To the extent the commenter relies on David Sunding's Economic Incentive Effects of EPA's After-the-Fact Veto of a Section 404 Discharge Permit Issued to Arch Coal, EPA notes that that article addresses an EPA CWA Section 404(c) action to withdraw specification of a disposal site after a CWA Section 404 permit was issued, which is not the case here.

matter, EPA acted, not in response to a permit application, but to prevent unacceptable adverse effects to a 3000 acre tract, acknowledging that its CWA Section 404(c) action “could result in the denial of any future applications for Section 404(c) (CWA) permits for the discharge of dredged or fill material in wetlands within the area.” *Id.* Two and half years later, EPA again acted under its CWA Section 404(c) authority in the absence of a permit application to prevent unacceptable adverse effects to 404(c) resources in the Florida Everglades. 52 Fed. Reg. 38519 (Oct. 16, 1987). EPA has also exercised its CWA Section 404(c) authority at various stages in the permitting process and after USACE has issued a permit.

The commenter points to a comment published with EPA’s regulations as evidence to claim that EPA’s prior policy position was that CWA Section 404(c) should be used only after the permit process has been exhausted. As discussed above, EPA has consistently maintained the legal and policy position that it has authority to act under CWA Section 404(c) “whenever” it makes the required determinations under the statute, including before a permit application has been submitted, at any point during the permitting process, or after a permit has been issued. In addition, as EPA explained in Section 2 of the PD, the reference to the “404 referral process” in the regulations is now manifested as the coordination processes EPA and USACE have established under CWA Section 404(q). 84 Fed. Reg. 45749, 45752 (Aug. 30, 2019). As also discussed in Section 2 of the FD, EPA’s actions during the Section 404 permitting process, including its initiation of the CWA Section 404(q) process, were consistent with the intention behind the comment that the commenter cites; indeed, EPA engaged with USACE and voiced concerns throughout the permitting process. And as explained in EPA’s response to comment 2.C.7, the Section 404(q) MOA itself recognizes that it does not constrain EPA’s statutory authority under CWA Section 404(c): “[t]his agreement does not diminish either Army’s authority to decide whether a particular individual permit should be granted, including determining whether the project is in compliance with the Section 404(b)(1) Guidelines, or the Administrator’s authority under Section 404(c) of the Clean Water Act” (EPA and DA 1992: Part I, paragraph 5). Similarly, the now vacated withdrawal notice cited by the commenter explicitly acknowledged that “EPA retains the discretion and the authority to decide to use its section 404(c) authority ‘whenever’ it determines, in its discretion, that the statutory standard for exercising this authority has been met . . . by initiating a new section 404(c) process that is informed by the entirety of the facts and the Corps’ decision-making known to the Agency at that time.” *Id.* at 45755.

EPA disagrees that the statements cited by the commenter contradict EPA’s consistent position that it can exercise its CWA Section 404(c) authority “whenever” it makes the required determination under the statute.

As described above, EPA disagrees with the commenter that EPA has changed position. Furthermore, the Agency has not proceeded “sub silentio.” Section 2 of the PD, which was

fully available for public review and comment, as well as Section 2 of the FD, clearly set forth the reasons for EPA to exercise its CWA Section 404(c) authority at this time in a manner sufficient for a reviewing court (in addition to the public) to understand the basis of the Agency's action.

EPA's regulations provide that EPA's initiation of a CWA Section 404(c) review process involves an evaluation of "the information available" to the Regional Administrator and that the record continues to develop throughout the process. Here, EPA considered information generated during the USACE permitting process and solicited comment on issues relating to the scope of the USACE record under consideration. See Section 7 of the proposed determination.

With respect to the commenter's statements related to the State's authority and/or responsibility to issue state permits, require potential mitigation, and protect water quality, including to make a certification under CWA Section 401, its argument is without merit. EPA's action limits USACE's ability to issue CWA Section 404 permits to discharge dredged or fill material into waters of the United States within areas specifically defined by EPA. The State retains its ability to exercise its authorities under the CWA (and state law) even in light of EPA's FD. Moreover, the CWA does not make EPA's authority to make CWA Section 404(c) determinations contingent upon any action or approval by the State. Furthermore, the State participated in USACE's CWA Section 404 permitting process and also had multiple opportunities to provide input during EPA's regulatory review process, see, e.g., 40 CFR 231.3, 231.4, 231.6.

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As applied, § 404(c) violates the major questions doctrine.

If Congress "wishes to assign to an agency decisions of vast economic and political significance[.]" the U.S. Supreme Court "expect[s] Congress to speak clearly." [UARG, 573 U.S. at 324 (cleaned up).] This tenet responds to "the danger posed by the growing power of the administrative state" [City of Arlington v. FCC, 569 U.S. 290, 315 (Roberts, C.J., dissenting).] by ensuring that top-level, political decisions are made by elected officials, not appointed agency officers. [West Virginia v. EPA, No. 20-1530, 2022 WL 2347278, at *20 (June 30, 2022) (Gorsuch, J., concurring).] To that end, the major questions doctrine provides that an agency must "point to 'clear congressional authorization'" in the "extraordinary case[]" where the agency claims the power to make decisions of vast "economic and political significance." [West Virginia v. EPA, No. 20-1530, 2022 WL 2347278, at **11, 13 (June 30, 2022).]

Recognizing that "[a] decision of such magnitude and consequence rests with Congress itself, or an agency acting pursuant to a clear delegation from that representative body[.]" [Id. at *18.] the major questions doctrine polices economically significant agency action premised on vague statutory grants of power. [Four decades ago, a plurality of the Court found it "unreasonable to assume" that Congress

delegated “unprecedented power over American industry” to OSHA without “a clear [textual] mandate.” *Indus. Union Dept., AFLCIO v. Am. Petroleum Inst.*, 448 U.S. 607, 645–46 (1980) (plurality op.). Last summer, the Court found it “strained credulity” to believe that statutory ambiguity empowered the Centers for Disease Control and Prevention to impose a nationwide eviction moratorium. *Ala. Ass’n of Realtors v. Dep’t of Health & Hum. Servs.*, 141 S.Ct. 2485, 2486 (2021). Similar cases were issued in the decades in between. See *King v. Burwell*, 576 U.S. 473, 486 (2015) (IRS lacked authority without an “express[]” delegation to determine applicability of Affordable Care Act tax credits that involved billions in spending and affected millions of people); *Gonzales v. Oregon*, 546 U.S. 243, 267–68 (2006) (Attorney General lacked authority from “oblique” statutory provision to criminalize assisted suicide); *FDA v. Brown & Williamson*, 529 U.S. 120, 160 (2000) (FDA lacked authority to regulate cigarettes because delegation on a matter of “such economic and political significance” would not occur “in so cryptic a fashion”); *MCI Telecomms. Corp. v. Am. Tel. & Tel. Co.*, 512 U.S. 218, 231 (1994) (FCC lacked authority to excuse non-dominant long-distance carriers from rate-filing requirements, as “a subtle [statutory] device” did not establish that Congress left “determination of whether an industry will be entirely, or even substantially, rate-regulated to agency discretion”). In January of this year, the Supreme Court concluded that a lone statutory subsection of the Occupational Safety and Health Act did not clearly authorize OSHA’s COVID-vaccine mandate. *NFIB v. Dep. of Lab., OSHA*, 142 S. Ct. 661 (2022) (per curium). Just this June, the Supreme Court held that Congress’ grant of power to EPA to regulate “systems” did not clearly authorize the Clean Power Plan rule. *West Virginia*, No. 20-1530, at *18.]

This veto, if finalized, would present the courts with an opportunity to employ the doctrine to further limit EPA’s power. Region 10’s proposal to shut down areas of land and water to development in perpetuity—depriving a state of billions in lost revenue, jobs for its citizens, and the right to make land-use decisions on its own land about whether, how, and which of its resources it ought to develop—reflects a stunning aggregation of power. Region 10 conjures this power from six words—“unacceptable adverse effects on . . . fishery areas.” [33 U.S.C. § 1344(c).]

But “Congress . . . does not, one might say, hide elephants in mouseholes.” [*Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457, 468 (2001).] Granting EPA a power of such vast political and economic significance when it finds “unacceptable adverse effects on . . . fishery areas” falls far short of the clear statement rule to which courts hold Congress when delegating such a power. In an extraordinary case like this, “something more than a merely plausible textual basis for the agency action is necessary.” [*West Virginia*, No. 20-1530, at *13.] Alaska is “confident that Congress could not have intended to delegate a decision of such economic and political significance to an agency in so cryptic a fashion.” [*Brown & Williamson*, 529 U.S. at 160.] Region 10’s attempt to pull an Alaska-sized power out of a mouse-sized hole risks folding in the face of judicial scrutiny. [For similar reasons articulated in this section, § 404(c), as applied here, is vulnerable to a void-for-vagueness challenge. “[U]nacceptable adverse effects,” § 404(c)’s operative phrase, is so vague as to provide no notice to regulated parties of what projects will be vetoed. See *Lane v. Salazar*, 911 F.3d 942, 950 (9th Cir. 2018) (discussing void-for-vagueness challenges). “Unacceptable” is not further defined by statute. The term “adverse,” alone, does not function as any limit at all in the § 404 context, where virtually every project requiring a § 404 permit

will have an adverse effect on the environment. One court reviewed § 404(c)'s "garbled language" and opined that "it is undeniable" that § 404(c) "is awkwardly written and extremely unclear." *Mingo Logan Coal Co, Inc. v. EPA*, 850 F. Supp.2d 133, at 134 (2012), rev'd, 714 F.3d 608 (D.C. Cir. 2013). The court noted that "the parentheticals[,] in particular, "are so poorly written that it is difficult to ascertain what it is they are supposed to modify." *Id.* at 140.]

EPA Response

EPA disagrees with this comment that the application of Section 404(c) of the CWA in this action violates the major questions doctrine. EPA's action is plainly authorized by Section 404(c) of the CWA, and nothing about the action raises a major question.

In *Mingo Logan Coal Co. v. EPA*, the D.C. Circuit made clear that Section 404(c) of the CWA "unambiguously expresses the intent of the Congress" to empower EPA "to prohibit, restrict or withdraw the specification 'whenever' [the Administrator] makes a determination that the statutory 'unacceptable adverse effect' will result." 714 F.3d 608, 613 (D.C. Cir. 2013) (emphasis original). "Using the expansive conjunction "whenever," the Congress made plain its intent to grant the Administrator authority to prohibit/deny/restrict/withdraw a specification at *any* time." *Id.* (emphasis original). The FD, which prohibits the specification of and restricts the use of defined areas as disposal sites for discharges of dredged or fill material that will have unacceptable adverse effects on anadromous fishery areas, is plainly authorized by Section 404(c).

Contrary to the commenters' assertions, the major questions doctrine has no applicability to this action and presents no reason to depart from Section 404(c)'s unambiguous terms. The major questions doctrine applies only when an agency claims an "[e]xtraordinary grant[] of regulatory authority" based on "'modest words,' 'vague terms,' or 'subtle devices,'" and the "'history and the breadth'" of that asserted power provide "'reason to hesitate before concluding that Congress'" meant to confer such authority. *West Virginia v. EPA*, 142 S. Ct. 2587, 2608-2609 (2022) (brackets and citations omitted). The Supreme Court has applied the doctrine only in a handful of "extraordinary cases" that presented a marked incongruity between an agency's claimed authority and the history and context of the statutory provision that purportedly conferred it. *Id.* at 2609. The FD lacks the hallmarks of those extraordinary cases.

Specifically, this is not a case where the agency relied on statutory language that is "vague," "cryptic," "ancillary," or "modest." *Id.* at 2608-2610 (citation omitted). To the contrary, the relevant grant of authority is direct, concrete, and central to EPA's role as the ultimate decision maker, if it chooses on a case-by-case basis, regarding specification of disposal sites for dredged and fill material discharges under CWA Section 404. Moreover, the Agency's use of its authority is neither "'transformative'" nor "sweeping." *Id.* at 2608, 2610 (citation omitted). The FD, like all CWA 404(c) determinations, is a site-specific, science-based determination that is squarely within EPA's expertise and domain.

Cf. id. at 2613 (noting that when an agency has no “comparative expertise” in making certain policy judgments, Congress presumably would not task it with doing so). Nor is EPA relying on a “long-extant statute” to claim “unheralded power.” *Utility Air Regulatory Group v. EPA*, 573 U.S. 302 (2014). While EPA has exercised its CWA Section 404(c) authority judiciously, the Agency has applied Section 404(c) consistently since it was enacted in 1972 and followed the applicable processes set forth in the CWA and in EPA’s regulations at 40 CFR Part 231.

Lastly, even if the major questions doctrine applied, which it does not, it would not prohibit EPA’s FD. The central interpretive question is whether Section 404(c) of the CWA authorizes EPA to prohibit the specification of or restrict the use of for specification of defined areas as a disposal site for discharges of dredged or fill material that the Agency determines will have unacceptable adverse effects on one or more of the enumerated resources. As explained above, Section 404(c)’s unambiguous text provides the “clear congressional authorization” that the major questions doctrine demands. *West Virginia*, 142 S. Ct. at 2609.

The commenter also argues, “for reasons similar to those articulated in [the section on *West Virginia*],” but without further clarification, that CWA Section 404(c) “is vulnerable to a void-for-vagueness challenge.” Although the commenter claims that CWA Section 404(c) is invalid “as applied,” it appears the commenter contends the provision is invalid on its face. As an initial matter, the void-for-vagueness doctrine typically arises when constitutionally protected conduct is at issue, and the commenter has not articulated its vagueness concerns in such a context. *See Village of Hoffman Estates v. Flipside, Hoffman Estates, Inc.*, 455 U.S. 489, 494-95 (1982) (“In a facial challenge to the overbreadth and vagueness of a law, a court’s first task is to determine whether the enactment reaches a substantial amount of constitutionally protected conduct. If it does not, then the overbreadth challenge must fail.”). Even if the statutory language in CWA Section 404(c) is considered on its face, EPA disagrees with the commenter’s assertion of vagueness. To the extent the commenter argues that CWA Section 404(c) is void for vagueness merely because the term “unacceptable” is not further defined in the statute, this argument fails to consider the entirety of the statutory text: “unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.” 33 USC 1344(c). Read holistically, CWA Section 404(c) directs EPA to consider the significance of adverse effects on the resources enumerated in the statute. So, while EPA agrees with the commenter that the word “adverse,” on its own, does not function as a significant limit in the context of CWA Section 404(c) actions because most projects requiring a CWA Section 404 permit will have at least some adverse effect on the environment, EPA’s inquiry under CWA Section 404(c) is not whether effects would be merely “adverse.” Congress articulated a much more specific standard – whether discharges will result in “unacceptable adverse effects” on

enumerated resources. Moreover, EPA defined the term “unacceptable adverse effect” in its CWA Section 404(c) regulations at 40 CFR 231.2(e), and courts have found EPA’s definition to be a reasonable construction of the statute. *Mingo Logan Coal Co. v. EPA*, 70 F. Supp. 3d 151, 172 (D.D.C. 2014), *aff’d*, *Mingo Logan Coal Co. v. EPA*, 829 F.3d 710 (D.C. Cir. 2016).

Finally, the commenter references a single district court that opined on the CWA Section 404(c) provision and stated that it is “awkwardly written and extremely unclear.” *Mingo Logan Coal Co. v. EPA*, 850 F. Supp. 2d 133, 134 (D.D.C. 2012), *rev’d*, 714 F.3d 608 (D.C. Cir. 2013). The commenter’s reliance on this district court decision is misplaced. The Court in that case was tasked with deciding whether EPA could exercise its CWA Section 404(c) authority after a CWA Section 404 permit had been issued, and it is through that lens that the Court opined that certain parentheticals in the provision were poorly written. When the Court referred to the parentheticals, it stated that EPA’s authority under CWA Section 404(c) includes the “withdrawal of specification,” which was relevant to the court’s inquiry in that case and is not relevant here. The court did not address, as the commenter appears to imply, the phrase “unacceptable adverse effect” or the subsequent parenthetical about spawning and breeding areas. Moreover, on appeal, the D.C. Circuit reversed the district court decision cited by the commenter. The D.C. Circuit held that “the language unambiguously expresses the intent of the Congress.” *Mingo Logan*, 714 F.3d at 612, 613.

2.C.26 Alaska Department of Environmental Conservation (Doc. #0814, p. 54-55)

The proposed veto violates the Alaska Statehood Compact, ANILCA, and ANCSA.

The land grant provisions of the Alaska Statehood Compact are contractual in nature. [*Alaska v. United States*, 35 Fed. Cl. 685, 698 (1996), *aff’d*, 119 F. 3d 16 (Fed. Cir. 1997) (citing *United States v. Morrison*, 240 U.S. 192, 201 (1915) (“land grant provision of Statehood Act was a compact”).] Section 6(i)—“Mineral land grants”—provides that “the grants of mineral lands to the State of Alaska . . . are . . . granted . . . with the right to prospect for, mine, and remove the same.” [Statehood Act § 6(i).] The same section further provides that “[m]ineral deposits in such lands shall be subject to lease by the State as the State legislature may direct[.]” [Id.] The Pebble lands are subject to this provision. [Cook Inlet Land Exchange.] If EPA violates this provision, it has breached the Alaska Statehood Compact. The remedy for such a breach is specific performance or damages. Specific performance would effectively undo the 404(c) action; damages would number in the billions. If finalized, the State will sue for both.

The proposed veto violates ANILCA. Enacted in 1980, ANILCA “provides sufficient protection for the national interest in the scenic, natural, cultural and environmental values on the public lands in Alaska, and at the same time provides adequate opportunity for satisfaction of the economic and social needs of the State of Alaska and its people[.]” [16 U.S.C. § 3101(d).] With the passage of ANILCA, the need in Alaska “for future legislation designating new conservation system units, new national conservation

areas, or new national recreation areas, has been obviated thereby.” [Id.] ANILCA, in other words, sets aside some lands for conservation but left others open for development. Under ANILCA’s “no more clause,” an executive branch withdrawal of more than 5,000 acres requires congressional approval. [16 U.S.C. § 3213.] Finalization of this proposed veto effectively withdraws more than 5,000 acres, creating a new national conservation area, without congressional approval. This violates ANILCA’s “no more clause.”

The proposed veto violates ANCSA. The Cook Inlet Exchange was enacted as an amendment to ANCSA. EPA violates the Cook Inlet Land Exchange, and thus ANCSA, by preventing the State from using the lands transferred to it very purpose they were transferred for—mineral development. Additionally, the Ninth Circuit has held that ANCSA’s provisions were intended to promote economic development, village expansion, and subsistence, and that “[o]f these potential uses, Congress clearly expected economic development would be the most significant.” [Koniag, Inc. v. Koncor Forest Res., 39 F.3d 991, 996 (9th Cir. 1994); see also Chugach Natives, Inc. v. Doyon, Ltd., 588 F.2d 723, 731 (9th Cir. 1978); City of Angoon v. Marsh, 749 F.2d 1413, 1418 (9th Cir. 1984).] By precluding development at the Pebble Deposit, Region 10 prevents Alaska Natives from the economic benefits that would inure to them from development of the Pebble Deposit. [E.g., News Release, Northern Dynasty Minerals, Ltd., Northern Dynasty: Pebble Partnership, Iliamna Natives Limited Reach Right-Of-Way Agreement (May 15, 2019), retrieved from <https://northerndynastyminerals.com/news/news-releases/2019/northern-dynasty-pebble-partnership-iliamna-natives-limited-reach-right-of-way-agreement/> (PLP granting Iliamna Natives “preferred contractor” status for Pebble-related contracts located on Iliamna lands).]

EPA Response

As an initial matter, nothing in the Alaska Statehood Act, ANILCA, or ANCSA precludes the application of duly enacted federal legislation to lands and mineral deposits granted to the State, nor do any of those laws serve as a barrier to EPA’s use of Section 404(c) of the Clean Water Act. The CWA, including CWA Section 404(c), applies to waters situated on lands and mineral deposits granted to the State just as they do elsewhere.

With respect to the commenter’s assertion that EPA’s action violates the Alaska Statehood Compact, EPA disagrees. See EPA’s response to comment 2.C.17.

With respect to the commenter’s assertion that EPA’s action violates ANILCA, EPA disagrees. Section 101 of ANILCA indeed states that ANILCA “provides sufficient protection for the national interest in the scenic, natural, cultural and environmental values on the public lands in Alaska, and at the same time provides adequate opportunity for satisfaction of the economic and social needs of the State of Alaska and its people; . . .” 16 USC 3101(d). That statement must be read in light of the entire provision. The provision continues: “. . . accordingly, the designation and disposition of the public lands in Alaska pursuant to this Act are found to represent a proper balance between the reservation of national conservation system units and those public lands necessary and appropriate for more intensive use and disposition, and thus Congress believes that the

need for future legislation designating new conservation system units, new national conservation areas, or new national recreation areas, has been obviated thereby.” 16 USC 3101(d) (emphasis added). Contrary to the commenter’s assertion, EPA’s CWA Section 404(c) action, which directly regulates waters of the United States, does not designate new conservation system units, new national conservation areas, or new national recreation areas.

EPA also disagrees with the commenter’s assertion that the Agency’s action violates ANILCA’s “no more clause.” EPA is not authorized to withdraw land under CWA Section 404(c). Rather, the Agency is authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever it determines that the discharge of dredged or fill material into such area will have an unacceptable adverse effect on certain statutorily enumerated resources. 33 USC 1344(c). Section 404(c) of the CWA thereby limits USACE’s ability to issue CWA Section 404 permits to discharge dredged or fill material into waters of the United States within areas specifically defined by EPA. *Id.* The commenter provides no explanation or basis for its contention that EPA’s action “withdraws” any land and it is clear that by exercising its authority under CWA Section 404(c), EPA has not done so.

Section 1326(a) of ANILCA, the so-called “no more clause,” provides in full:

No future executive branch action which withdraws more than five thousand acres, in the aggregate, of public lands within the State of Alaska shall be effective except by compliance with this subsection. To the extent authorized by existing law, the President or the Secretary may withdraw public lands in the State of Alaska exceeding five thousand acres in the aggregate, which withdrawal shall not become effective until notice is provided in the Federal Register and to both Houses of Congress. Such withdrawal shall terminate unless Congress passes a joint resolution of approval within one year after the notice of such withdrawal has been submitted to Congress.

16 USC 3213(a).

The statute does not define “withdrawal.” *See* 16 USC 3102. In the absence of a definition in ANILCA, courts will look to how other, related statutes define withdrawal, as well as to the context in which the term is used in the statute at issue. *Southeast Conference v. Vilsack*, 684 F. Supp. 2d 135, 143 (D.D.C. 2010). In *Southeast Conference*, the court addressed this precise issue by looking to the Federal Land Policy and Management Act’s definition of “withdrawal” in order to determine what that term means for purposes of ANILCA. In that case, the court explained that Federal Land Policy and Management Act, which, like ANILCA, governs the management of certain federal lands defines “withdrawal” as a “withholding [of] an area of Federal land from settlement, sale, location, or entry, under some or all of the general land laws, for the purpose of limiting

activities under those laws in order to maintain other public values in the area or reserving the area for a particular public purpose or program.” 43 USC 1702(j). The *Southeast Conference* court relied on the D.C. Circuit’s prior interpretation, which described a withdrawal as an action that “exempts the covered land from the operation of public land laws.” *Southeast Conference*, 684 F. Supp. 2d at 143 (quoting *New Mexico v. Watkins*, 969 F.2d 1122, 1124 (D.C. Cir. 1992)); see also *Sagebrush Rebellion, Inc. v. Hodel*, 790 F.2d 760, 761 n. 1 (9th Cir. 1986) (“A withdrawal withholds an area of federal land from sale, lease or use under the general land laws ... in order to preserve a public value in the area or for a public purpose.”). Public, or general, land laws “authorize the transfer of federal lands to the private domain.” *Sagebrush Rebellion*, 790 F.2d at 761 n. 1. Putting the definitions together, then, the *Southeast Conference* court determined that a “withdrawal” exempts covered land from the operation of laws that otherwise authorize the transfer of federal lands to the private domain for private use. *Southeast Conference*, 684 F.Supp.2d at 143.

The *Southeast Conference* court also found this definition to accord with the way several other provisions of ANILCA use the term “withdrawal.” *Id.* For example, in a provision discussing ANILCA’s effect on withdrawals of land made prior to ANILCA’s passage, Congress stated that withdrawn lands “shall not be deemed available for selection, appropriation, or disposition.” 16 USC 3209(a). The phrase “selection, appropriation, or disposition” echoes the phrase “settlement, sale, location, or entry” used in the Federal Land Policy and Management Act’s definition of withdrawal. *Southeast Conference*, 684 F. Supp. 2d at 143. Furthermore, in an ANILCA provision regarding mineral leasing rights, Congress found that certain lands “are ... withdrawn from all forms of appropriation or disposal under public land laws.” 16 USC 410hh-5. This construction mirrors the D.C. Circuit’s description that a withdrawal under the Federal Land Policy and Management Act “exempts the covered land from the operation of public land laws.” *Id.* at 144 (citing *Watkins*, 969 F.2d at 1124). Accordingly, the *Southeast Conference* court determined that the statutory evidence supports the application of the Federal Land Policy and Management Act’s definition of withdrawal to ANILCA, 684 F. Supp. 2d at 143. EPA’s action, appropriately exercised pursuant to CWA Section 404(c), only limits USACE’s ability to specify certain waters of the United States situated on state lands as disposal sites for certain discharges of dredged or fill material associated with mining the Pebble deposit. The commenter makes no allegations that EPA’s CWA Section 404(c) action exempts federal lands from the operation of public land laws or suspends the operation of those laws on certain lands, nor could it. It does not withdraw federal land from “settlement, sale, location, or entry” or deem any federal land unavailable for “for selection, appropriation, or disposition.” EPA’s action simply has no effect on laws that authorize the transfer of federal lands to the private domain and the commenter has not pointed to any authority suggesting otherwise. EPA’s action clearly does not constitute a prohibited executive branch withdrawal within meaning of ANILCA.

To the extent the commenter contends that EPA's action "effectively withdraws" land, the commenter has provided no explanation for its assertion, especially in light of the meaning of the term "withdrawal" under ANILCA. The fact that EPA's action may incidentally affect construction and operation of projects that require the discharge of dredged or fill material does not transform EPA's action into a land withdrawal within the meaning of ANILCA "effective" or otherwise. Indeed, even proper land use designations do not constitute "withdrawals." See *Seattle Audubon Society v. Lyons*, 871 F. Supp. 1291, 1315 (W.D. Wash. 1994). Considering a challenge under the Federal Land Policy and Management Act, the *Lyons* court held that employing land use designations was "merely an exercise of the Secretary's multiple-use planning responsibilities," and thus could not be a withdrawal. This point is even more clear here where EPA is merely exercising its CWA Section 404(c) authority to prevent unacceptable adverse effects to anadromous fishery areas and is not making a land use designation (see EPA's responses to comments 2.C.8 and 2.C.21). To the extent the commenter contends that EPA's action violates ANCSA because it violates the Cook Inlet Land Exchange Act, which is an amendment to ANCSA, EPA disagrees. See EPA's response to comment 2.C.17.

To the extent the commenter contends that EPA's action violates ANCSA based on its purpose, EPA disagrees. Congress enacted the Alaska Native Claims Settlement Act (ANCSA), 43 USC 1601 et seq., to settle, through grants of a combination of land and money, all "claims by Natives of Alaska." H.R. Rep. No. 92-523, 92d Cong., 1st Sess. 3, reprinted in 1971 U.S.C.C.A.N. 2193 (hereinafter H.R. Rep. 92-523). ANCSA authorized the payment of almost \$1 billion cash and the conveyance of approximately 40 million acres of land to Alaskan Natives as compensation for extinguishment of their claims. See 43 USC 1601 et seq. To administer this land and money, the state was divided into twelve geographic regions, and the Alaskan Natives within each region became shareholders in a regional corporation organized under Alaska law. 43 USC 1606. Additionally, each of approximately 200 Native villages was required to form a village corporation with its villagers as shareholders. 43 USC 1607.

Moreover, the commenter mischaracterizes the Ninth Circuit's discussion of Congressional intent. In *Koniag*, the Court noted that ANCSA's legislative history makes clear that Congress contemplated that land granted under ANCSA would be put primarily to three uses – village expansion, subsistence, and capital for economic development. *Koniag, Inc. v. Koncor Forest Res.*, 39 F.3d 991, 996 (9th Cir. 1994). Indeed, the Court went on to state that of these potential uses, Congress clearly expected economic development would be the most significant[.] *Id.* But the Court did not stop its discussion there. The Court went on to explain its understanding of Congress's expectation by pointing to the following passage from the legislative history:

The 40,000,000 acres is a generous grant by almost any standard.... The acreage occupied by the Villages and needed for normal village expansion is

less than 1,000,000 acres. While some of the remaining 39,000,000 acres may be selected by the Natives because of its subsistence use, *most of it will be selected for its economic potential... [T]here will be little incentive for the Natives to select lands for subsistence use because during the foreseeable future the Natives will be able to continue their present subsistence uses regardless of whether the lands are in Federal or State ownership.*

Id. (citing H.R. Rep. 92-523 at 5, 1971 U.S.C.C.A.N. at 2195).

The passage quoted by the Court makes clear that its discussion of congressional intent to promote economic development was in the context of the land granted to Alaska Natives under ANCSA. The commenter further ignores this context, which the Court clearly explained in its opinion: “Although the Act itself does not speak directly to this congressional expectation, it is reflected in ANCSA’s requirement that Natives form corporations to receive and administer the land they receive. There would be little purpose in this requirement if Congress did not expect Natives to benefit from the economic development of their land. Id. at 997 (emphasis added).

The other cases noted by the commenter are also inapposite to commenter’s claim that EPA’s action violates ANCSA because both, like *Koniag*, were resolving disputes over land owned by Alaska Native Corporations. See *Chugach Natives, Inc. v. Doyon, Ltd.*, 588 F.2d 723, 731 (9th Cir.1978); *City of Angoon v. Marsh*, 749 F.2d 1413, 1418 (9th Cir. 1984). Here, of course, the commenter makes no claim that any Alaska Native Corporation owns any of the land on which EPA’s action applies, nor can it. None of the land on which EPA’s action applies is owned by any Alaska Native Corporation.

With respect to the commenter’s contention that “[b]y precluding development at the Pebble Deposit, [EPA] prevents Alaska Natives from the economic benefits that would inure to them from development of the Pebble Deposit,” EPA first notes that its action does not prohibit mining or development of the Pebble deposit. See EPA’s response to comment 5.B.32. Regardless, the commenter’s contention that EPA’s action violates ANCSA because it prevents Alaska Natives from the economic benefits that would inure to them from development of the Pebble deposit is belied by the fact the land within the defined areas is not land granted to any Alaska Native Corporation under ANCSA or even owned by any Alaska Native Corporations. To the extent that Congress contemplated that land granted under ANCSA would be put primarily to three uses – village expansion, subsistence, and capital for economic development – and even if Congress expected that economic development would be the most significant, Congress was clear that such purposes would inure from land granted to the Alaska Native Corporations under ANCSA. Any potential protection thus afforded to Alaska Native Corporations under ANCSA’s provisions are predicated on the land having been granted under ANCSA. See *City of Angoon*, 749 F.2d 1413.

Even if ANCSA provided some protections to Alaska Native Corporations on land other than that granted to the Corporation under ANCSA, which it does not, Congress did not exempt any provision of ANCSA from the CWA, including Section 404(c). Indeed, it appears that Congress specifically contemplated that at least some ANCSA provisions could conflict with other laws. ANCSA Section 6 expressly provides that “[i]n the event of any conflict between the provisions of this section and the laws of the State of Alaska, the provisions of this section shall prevail.” 43 USC 1606(p). Although there is no conflict here, had Congress intended that any provision of ANCSA govern in the event of a conflict between that provision and other federal laws, it would have so stated.

2.C.27 Alaska Department of Environmental Conservation (Doc. #0814, p. 55-56)

FINALIZATION REQUIRES COMPENSATION

Region 10’s veto, if finalized, would leave no economically viable use of these lands, requiring federal compensation to Alaska.

The Fifth Amendment of the U.S. Constitution forbids the taking of private property for public use without just compensation. The Supreme Court has recognized that this constitutional guarantee prevents the government from “unfairly singl[ing] out the property owner to bear a burden that should be borne by the public as a whole.” [Yee v. City of Escondido, 503 U.S. 519, 523 (1992); Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 123–24 (1978).] The Supreme Court has held that the denial of a § 404 permit, when the permit denial results in no viable uses for the property, can rise to the level of a taking. [United States v. Riverside Bayview Homes, Inc., 474 U.S. 121, 127 (1985) (observing that when a § 404 permit “is denied and the effect of the denial is to prevent ‘economically viable’ use of the land in question can it be said that a taking has occurred”); see also United Affiliates Corp. v. United States, 143 Fed. Cl. 257, 266–67 (2019) (recognizing regulatory takings claim of both landowner and mineral rights lessee arising from CWA § 404 permit denial); Hearts Bluff Game Ranch, Inc. v. United States, 669 F.3d 1326, 1329 (Fed. Cir. 2012) (“denial of a section 404 permit could amount to a taking of a cognizable property right as it deprives the landowner of a right inherent in land ownership”).] Such a denial constitutes a taking where: (1) the property owner had a reasonable investment-backed expectation that it could develop the property, and (2) the permit denial deprived the property owner of most of the use of its property. [The Federal Circuit has recognized “that the denial of a section 404 permit could amount to a taking of a cognizable property right as it deprives the landowner of a right inherent in the land ownership[.]” Hearts Bluff Game Ranch, Inc. v. United States, 669 F.3d 1326, 1330 (Fed. Cir. 2012). See also Penn Cent. Transp. Co., 438 U.S. at 124 (“The economic impact of the regulation on the claimant and, particularly, the extent to which the regulation has interfered with distinct investment-backed expectations are, of course, relevant considerations.”).]

The CWA, the Statehood Act, and the Cook Inlet Land Exchange have all given the State an investment-backed expectation in the lands surrounding the Pebble project. This expectation—arising as it does from the federal government’s actions—could not be more reasonable. Alaska selected and specifically

designated this land for mineral development. Region 10's proposed veto, however, would entirely preclude mineral development in the area. The State, therefore, is now left with no economically viable use of these lands. For this reason alone, the proposed veto should be withdrawn.

Should EPA indeed adopt a § 404(c) determination that effectively withdraws 309 square miles of State-owned land from mineral development, the United States must provide the State with appropriate compensation. Based solely on the estimates contained within the FEIS, the Pebble Deposit is worth billions of dollars, and the State will seek to be compensated in an amount that reflects the true value of the mineral deposit.

EPA Response

With respect to the commenter's contention that EPA's action constitutes a taking under the Fifth Amendment, see EPA's response to comment 2.C.45.

2.C.28 Alaska Department of Environmental Conservation (Doc. #0814, p. 8)

Whether, and how, Alaska develops Bristol Bay's mineral resources or its fishery resources— or both, responsibly—is Alaska's decision to make, considering the input of all stakeholders and working through the standard permitting process. EPA would instead choke off further discussion, usurping for itself this important decision that affects so many Alaskans.

This decision is unwise, and violative of Congress' promises to the State. It is also legally indefensible. Among other foundational defects, Region 10 has made no threshold jurisdictional determination delineating WOTUS, and therefore has not established EPA's authority to act. Region 10 has failed to identify the "fisheries" to which its action purportedly applies, and therefore has not met § 404(c)'s statutory or regulatory prerequisites for acting. Region 10 inadequately considers the costs of its proposed veto, and improperly inflates its benefits. Region 10 relies on factors it may not legally consider. Throughout it all, Region 10 portrays Alaska Natives as a monolith, flattening their diverse viewpoints into a single narrative of unwavering support.

In the unlikely event of its validity, exercise of this veto would constitute a regulatory taking, for which compensation, in the billions, is due.

EPA Response

While EPA recognizes the role of various Alaska State agencies in managing the State's resources, state laws aimed at managing state resources do not supersede, amend, modify, or repeal the CWA or impinge on EPA's CWA Section 404(c) authority. See EPA's response to comment 2.C.23.

With respect to the commenter's assertion that EPA's action violates the promises Congress made to the State of Alaska, see EPA's response to comment 2.C.17.

With respect to the commenter's concern that EPA has "made no threshold jurisdictional determination delineating waters of the United States and therefore has no authority to act," see EPA's response to comment 2.C.22.

With respect to the commenter's assertion that EPA has not identified the "fisheries" to which its action applies and has therefore not met the statutory and regulatory prerequisite to act under CWA Section 404(c), see EPA's response to comment 4.A.1.

With respect to the commenter's assessment of EPA's consideration of the costs of its action, see *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b). See also EPA's response to comments in Topic 6.F.

With respect to the commenter's assertion that EPA relies on factors that it legally may not consider, the commenter does not identify the factors on which EPA allegedly improperly relied, and EPA therefore cannot respond directly regarding those alleged factors. Nonetheless, EPA explains the basis for its CWA Section 404(c) determination in Section 4 of the FD.

With respect to the commenter's assertion that EPA portrays Alaska Natives as a monolith, EPA disagrees. Although not a basis for EPA's action, EPA has listened to and respects the diverse perspectives of all Alaska Native peoples in the Bristol Bay area. For a discussion of tribal concerns generally, see Section 6.3 of the FD.

With respect to the commenter's contention that EPA's action constitutes a regulatory taking, see EPA's response to comment 2.C.27.

2.C.29 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 4)

Trout Unlimited and KSP strongly support the EPA using its authority under the § 404(c) of the Clean Water Act [33 U.S.C. § 1344(c).] to issue a final determination that protects the Bristol Bay watershed from impacts from large-scale mining activities like the proposed Pebble mine. In reviewing the revised PD, the wealth of relevant scientific literature and research, and considering the weight of public interest, the EPA has more than enough justification to issue a final determination based on the revised PD.

EPA Response

With respect to the commenters' support for EPA's exercise of authority under CWA Section 404(c), EPA agrees that the administrative record supports EPA's decision to issue an FD that prohibits and restricts USACE's ability to specify certain waters of the United States within the SFK, NFK, and UTC watersheds as disposal sites for certain discharges of dredged or fill material as described in Section 5 of the FD. Section 4 of the

FD describes the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas.

2.C.30 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (BBFA) (Doc. #0830, p. 2)

Section 404(c) authorizes EPA to prohibit, deny, restrict, or withdraw a permit to discharge dredged or fill material in order for EPA to protect certain aquatic resources and uses from an "unacceptable adverse effect." [Section 404(c) of the Clean Water Act ("CWA"), 33 U.S.C. § 1344(c), authorizes the Administrator of the EPA to prohibit or withdraw the specification of any defined area as a disposal site, and to deny, restrict or withdraw the use of any defined area for specification as a disposal site, for discharge of dredged or fill material into waters of the United States - whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on ... fishery areas (including spawning and breeding areas), wildlife, or recreational areas. [Italics added]]

EPA Response

The commenter paraphrases the Clean Water Act. No response is required.

2.C.31 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 30)

A. Clean Water Act Section 404(c) and 404(b)(1) Guidelines

The purpose of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” [33 U.S.C. § 1251(a).] To that end, Congress made it “the national goal that the discharge of pollutants into the navigable waters be eliminated.” [Id § 1251(a)(1).] The statute also provides that “it is the national goal that wherever attainable, an interim goal of water which provides for the protection and propagation of fish, shell fish, and wildlife and provides for recreation in and on the water be achieved.” [Id § 1251(a)(2).]

Pursuant to Section 404(c) of the CWA, EPA is authorized to determine whether a discharge of dredged or fill material “will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.” [33 U.S.C. § 1344(c).] In Section 404(c), Congress gave EPA broad authority to protect water resources from unacceptable adverse effects “whenever” the time is right. [33 U.S.C. § 1344(c)] This means the agency may use its Section 404(c) authority “at any time,” including before a permit application has been submitted, at any point during the permitting process, and after a permit has been issued. [33 U.S.C. 1344(c); 40 CFR 231.1(a), (c); Mingo Logan Coal Co. v. EPA, 714 F.3d 608, 613 (D.C. Cir. 2013).]

Congress enacted CWA Section 404(c) to provide EPA the ultimate authority, if it chooses on a case-by-case basis, to make decisions regarding specification of disposal sites for dredged and fill material discharges under CWA Section 404. [Mingo Logan Coal Co. v. EPA, 714 F.3d 608, 612-13 (D.C. Cir. 2013).] The CWA grants EPA the authority to specify a defined area as off-limits to the discharge of dredged or

fill material when it determines that the discharge “will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.” [33 U.S.C. § 1344(c).]

EPA Response

EPA agrees that courts have recognized that Congress enacted CWA Section 404(c) to provide EPA the ultimate authority, if it chooses on a case-by-case basis, to make decisions regarding specification of disposal sites for dredged and fill material discharges under CWA Section 404. *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 612-13 (D.C. Cir. 2013). EPA also agrees that it can exercise its CWA Section 404(c) authority “whenever” it makes the required determination under the statute. Section 2 of the FD explains EPA’s CWA Section 404(c) authority, as well as its rationale for acting now.

2.C.32 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 48-49)

A. EPA has the Authority and Justification for Undertaking 404(c) Action

PLP alleges that EPA’s 404(c) authority is “narrowly prescribed” to “only veto a specific disposal site if it can demonstrate unacceptable adverse effects to aquatic resources based on a specific permit application.” [Letter from PLP to EPA (March 28, 2022), at p. 2, available at:

<https://www.epa.gov/system/files/documents/2022-03/bristol-bay-404-response-letter-plp-3-28-2022.pdf> [hereinafter “PLP 15-day Response”].]

As an initial matter, PLP is wrong that EPA’s authority is narrowly prescribed. In fact, Congress afforded EPA the authority to act “whenever” the agency finds unacceptable adverse effects to aquatic resources. [33 U.S.C. § 1344(c).] And, as the D.C. Circuit court explained, Congress intended that “whenever” with respect to EPA’s 404(c) authority means “at any time.” [*Mingo Logan v. EPA*, 714 F.3d 608, 613 (D.C. Cir. 2013) (emphasis original).] EPA’s use of Section 404(c) at this time is consistent with the plain reading of the CWA, Congressional intent in enacting the law, and sound public policy given the importance of the Bristol Bay fishery.

Equally important, EPA in issuing the 2022 PD, is doing precisely what PLP says the law requires, basing its 404(c) action on the effects to aquatic resources that would occur according the Army Corps’ analysis of PLP’s specific permit application. As EPA has rightly concluded, in light of the extensive record compiled in processing PLP’s 2017 permit application “it is not reasonable or necessary to engage in one or more additional multi-year NEPA and CWA Section 404 processes for future plans that propose to discharge dredged or fill material associated with mining the Pebble deposit that could result in effects that are similar or greater in nature and magnitude to the effects of the 2020 Mine Plan.” [2022 PD at p. 2-19.]

EPA Response

EPA agrees with the commenter that the Agency can exercise its CWA Section 404(c) authority “whenever” it makes the required determination under the statute because

Congress gave EPA broad authority to do so. EPA also agrees that the Agency’s use of CWA Section 404(c) at this time is consistent with the plain reading of the CWA, Congressional intent, prior law, and sound public policy. EPA explains its CWA Section 404(c) authority, as well as its rationale for acting now, in Section 2 of the FD. EPA reviewed the available information, including the relevant portions of the USACE permitting record, and this information supports the findings in the FD.

2.C.33 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 50)

A Section 404(c) Action Would Not Violate the Alaska Statehood Act, ANILCA, or ANCSA

PLP asserts that Section 404(c) veto would violate the Alaska Statehood Act, the Alaska National Interest Lands Conservation Act (ANILCA), and the Alaska Native Claims Settlement Act (ANCSA). [PLP 15-day Response at pp. 5-7.] This is a claim that PLP has made before in litigation against EPA, and it is one that the agency has roundly and solidly refuted in federal court.

As EPA has properly explained in the 2022 PD and in previous litigation on this point, nothing in the Statehood Act, ANILCA, or ANCSA precludes the application of duly enacted federal legislation—the CWA—to lands and mineral deposits granted to the State. [2022 PD at p. 2-16. See also, PLP v. EPA, No. 3:14-cv-00097 (dkt# 188) (EPA opposition to preliminary injunction, filed Aug. 18, 2014).] Instead, the CWA applies in the same manner to waters on state lands in Alaska as it applies elsewhere. The Statehood Act, ANILCA, and ANCSA do not serve as barriers to EPA’s use of 404(c) action to prohibit or restrict discharges of dredged or fill material from mining the Pebble deposit into waters of the United States.

EPA Response

EPA agrees with the commenter that nothing in the Alaska Statehood Act, ANILCA, or ANCSA precludes the application of duly enacted federal legislation to lands and mineral deposits granted to the State, nor do any of those laws serve as a barrier to EPA’s use of Section 404(c) of the Clean Water Act. Federal law, including the Clean Water Act, applies to lands and mineral deposits granted to the State just as they do elsewhere. Please see EPA’s responses to comments 2.C.17 and 2.C.26.

2.C.34 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 23-26)

Comments on EPA Region 10’s consideration of the USACE administrative record, which contains documents pertaining to the USACE Pebble Mine permit decision. EPA Region 10 included in the docket for this proposed determination all portions of the voluminous administrative record for the USACE Pebble Mine permit decision that are relevant to EPA’s decision-making and that EPA considered in its decision to issue this proposed determination. EPA Region 10 is soliciting comments that identify any other documents from the USACE administrative record that EPA should consider in its decision-making for this CWA Section 404(c) review process.

EPA appropriately included the Army Corps' administrative record in its decision to issue a revised Proposed Determination. However, the agency is not constrained by the findings in the Army Corps' administrative record, particularly those that are not scientifically supported (e.g., unfounded conclusions in the FEIS unsupported by data and criticized by cooperating agencies and independent scientists). The Army Corps ultimately reached the only legally and scientifically defensible conclusion when it denied PLP's Clean Water Act permit, notwithstanding unsupported conclusions in its FEIS that Pebble would not have measurable effects on fisheries in Bristol Bay.

In its revised Proposed Determination, EPA appropriately distinguished the Army Corps' scientifically unfounded findings. EPA is not confined—either temporally or factually—by the Army Corps' administrative record when issuing a decision under Section 404(c) of the Clean Water Act. EPA's authority under Section 404(c) is broad, and it is separate and distinct from the Army Corps' permitting process. [Clean Water Act, Pub. L. No. 92-500, § 404(c), 86 Stat. 816, 884 (1972) [<https://perma.cc/Q398-Y5L8>].] The plain meaning of the statute—which imposes few requirements on and broad powers to EPA “to prohibit,” “withdraw,” “deny,” or “restrict” the specification of certain sites for disposal [33 U.S.C. § 1344(c).]—is confirmed by the congressional record. Courts, too, have upheld EPA's independent authority under Section 404(c) in the face of several challenges, including in *Bersani v. EPA* (“Bersani II”) [*Bersani v. U.S. EPA* (Bersani II), 850 F.2d 36 (2d Cir. 1988) [<https://perma.cc/QZ9Y-WMV2>].] and *Mingo Logan Coal Co. v. EPA* (“Mingo Logan II”). [*Mingo Logan II*, 714 F.3d 608 (D.C. Cir. 2013), remanded to 70 F. Supp. 3d 151 (D.D.C. 2014), aff'd 829 F.3d 710 (D.C. Cir. 2016) [<https://perma.cc/QL6N-Y7AC>].] Given this authority, EPA can and should act independently of the Army Corps' administrative record when finding unacceptable adverse effects. While the Army Corps' administrative record may inform EPA's decision making, the agency is not constrained by it and may, instead, draw on the large body of scientific literature and review available to it—including the agency's 2014 Watershed Assessment, 2014 Proposed Determination, the many issues identified by cooperating agencies throughout the Army Corps' permitting process, and numerous scientific reports submitted to both EPA and the Army Corps over the past decade.

a. Congress intended EPA to serve as an independent check under Section 404(c)

Congressional intent behind the Clean Water Act affirms EPA's authority under Section 404(c) to serve as an independent check on the Army Corps, separate from the permitting process and unconstrained by the administrative record. Although it is “quite unusual for Congress to deputize one federal agency to in effect forbid actions authorized by another regulatory agency,” the congressional debate and legislative record confirm that Congress intended this authority to serve as a broad check on and balance with the Army Corps. [Michael C. Blumm & Elisabeth Mering, *Vetoing Wetland Permits Under Section 404(c) of the Clean Water Act: A History of Inter-Federal Agency Controversy and Reform*, 33 *UCLA J. of Env't L. and Pol'y* 215, 223 (2015) [<https://perma.cc/8KMR-4XBB>].]

During the Senate floor debate, numerous legislators spoke to the need for EPA oversight, drawing on concerns that the Army Corps prioritized economic decisions at the expense of other factors. Legislators from both parties raised concerns about the differing “missions” of the two agencies. Since “[t]he

mission of the Corps of Engineers is to protect navigation,” it therefore lacked the capacity to fulfill EPA’s broader mission “to protect the environment.” [117 Cong. Rec. 38,855 (1971) [<https://perma.cc/4ANL-8GWH>].] The Army Corps also, in this vein, lacked the capacity “to evaluate the environmental impact of these dredging activities,” instead being only “equipped to form judgments on what is needed for navigation.” [Id. at 38,854.] The Senate and House had different visions of the ideal balance between the agencies’ competing “missions,” and the Senate and House versions of the bill reflected these differing visions.

The different House and Senate versions of the Clean Water Act each granted different powers to EPA and the Army Corps. The House bill gave the Army Corps authority to regulate the discharge of dredged or fill materials. [H.R. 11896, 92d Cong., 2d Sess. (1971) [<https://perma.cc/B6AY-TE6B>].] The House version did, however, grant some limited discretion to EPA to prohibit discharges in “critical areas.” [H.R.Rep. No. 92-911, at 52 (1972) [<https://perma.cc/8B2G-MP66>].] Yet the Army Corps could override this prohibition if it found “no economically feasible alternative reasonably available.” [Id.] The original Senate bill, conversely, granted permitting authority to EPA for the disposal of all pollutants, including dredged or fill material. [S. 2770, 92d Cong., 1st Sess. (1971) [<https://perma.cc/B8U2-JURE>].] When Senator Randolph proposed an amendment to this version of the bill “providing that the Secretary of the Army would regulate the disposal of dredged spoil,” transferring authority to the Army Corps in a manner similar to that of the House bill, the amendment failed, 6-9.” [S.Rep. No. 92-414, at 92 (1971) [<https://perma.cc/S2NF-YQJA>].] Senators criticized the amendment for “shift[ing] the environmental evaluation authority from EPA to the Corps of Engineers.” [117 Cong. Rec. 38,854 (1971) [<https://perma.cc/4ANL-8GWH>].] Indeed, many Senators were wary of granting the Army Corps full discretion over the permitting process and thereby “eliminat[ing] . . . checks by the only agency . . . [they had] to evaluate environmental damage” and “mak[ing] dredgers [uniquely] exempt” from monitoring and supervision. [Id.]

Ultimately, the final version of Section 404(c) was the result of a compromise between the Senate and House versions of the bill, as legislators attempted to balance the competing economic and environmental interests at issue. In the final version of the bill, Congress provided the Army Corps with primary permitting authority and EPA with oversight, in the form of the ultimate veto. This compromise retained the permitting process with the Army Corps and provided for the exercise of EPA’s environmental expertise in evaluating environmental impacts. [S.Rep. No. 92-1236 (1972) (Conf. Rep.) [<https://perma.cc/2WRU-9G67>].] Congress reached this compromise, providing EPA with its broad Section 404(c) authority, at least in part because “the Committee did not believe there could be any justification for permitting the Secretary of the Army to make determination as to the environmental implications of either the site to be selected or the specific spoil to be disposed of in a site.” [118 Cong. Rec. 33,699.] Congress, attuned to these issues, chose to institute EPA’s independent check.

In acting within this independent authority, EPA has the power to rely on its own body of research to determine whether mining the Pebble deposit will have unacceptable adverse effects. In so doing, EPA may incorporate and rely on the Army Corps’ administrative record and findings, but, as a congressionally designated independent actor under Section 404(c), it is not constrained by this record.

b. Courts have upheld EPA's broad, independent Section 404(c) authority

Judicial challenges to Section 404(c)—including *Bersani* [*Bersani II*, 850 F.2d 36 (2d Cir. 1988) (upholding EPA's veto despite a disagreement between the Army Corps and EPA regarding when *Bersani* could claim a lack of alternative siting locations) [<https://perma.cc/QZ9Y-WMV2>].] and *Mingo Logan II* [*Mingo Logan II*, 714 F.3d 608 (D.C. Cir. 2013), remanded to 70 F. Supp. 3d 151 (D.D.C. 2014), *aff'd* 829 F.3d 710 (D.C. Cir. 2016) [<https://perma.cc/QL6N-Y7AC>].]—unequivocally affirm EPA's independent oversight authority.

In *Bersani*, the Second Circuit Court of Appeals upheld EPA's veto of an Army Corps' 404 permit and affirmed EPA's ability to act independently—irrespective of the Army Corps' findings of facts. [*Bersani II*, 850 F.2d 36.] The Second Circuit and District Court both held that “[n]either the statute nor the pertinent regulations mandate that the EPA accept all or part of the Corps’ findings under Section 404(b) in making its determination under Section 404(c).” [*Bersani v. U.S. EPA (Bersani I)*, 674 F. Supp. 405, 415 (N.D.N.Y. 1987), *aff'd* 850 F.2d 36 (2d Cir. 1988) [<https://perma.cc/889R-3VGQ>].] The court rejected arguments that EPA's Section 404(c) action was invalid because “the Corps, another agency which was jointly responsible with EPA for administering the program in question, interpreted the pertinent regulation in a different way than EPA had.” [*Bersani II*, 850 F.2d at 38.] Both the District Court and Second Circuit, therefore, affirmed EPA's independent power and its freedom within that power to depart from the Army Corps' findings. [*Id.* at 36.]

The courts also held that the Clean Water Act's legislative history validated EPA's broad, independent authority to override Army Corps' determinations, as “nothing in the legislative history indicates Congress' desire to limit EPA's role in assessing the environmental acceptability of a site.” [*Bersani I*, 674 F. Supp. at 417.] “[N]either the statute nor the legislative history indicates that EPA is in any way bound by a previous determination of the Corps.” [Shannon J. Kilgore, *EPA's Evolving Role in Wetlands Protection: Elaboration in Bersani v. U.S. EPA*, 18 *Env't L. Rep.* 10479, 10487 (1988) [<https://perma.cc/D68H-65MY>].] The District Court and Second Circuit in *Bersani* therefore affirmed EPA's authority to issue a Final Determination without the need to “accept all or part of the Corps' findings.” [*Bersani I* at 415.]

Similarly, the court in *Mingo Logan II* affirmed EPA's broad 404(c) authority, both to act “whenever” it determines unacceptable adverse effects and to rely on resources outside of the Army Corps' administrative record in making this determination. [In 2007, the Army Corps issued *Mingo Logan* a permit to excavate the tops of several West Virginia mountains. Four years later, EPA withdrew approval from two of the disposal sites. *Mingo Logan* challenged EPA's statutory authority to withdraw the two sites after the Army Corps had already issued the permit, and in the initial case, the court held that EPA lacked the statutory authority to do so. In *Mingo Logan II*, the Court of Appeals reversed this holding and remanded the case for consideration of the remaining challenges under the Administrative Procedure Act (APA). In *Mingo Logan III*, the Court found that EPA did not violate the APA. *Mingo Lingo IV* affirmed that judgment.] *Mingo Logan II* upheld EPA's authority to act at any point during the Section

404(c) process, finding that EPA serves as “a broad environmental ‘backstop’ authority over the Secretary’s discharge site selection.” [Mingo Logan II, 714 F.3d at 612.]

Mingo Logan II further upheld EPA’s reliance on information separate from the Army Corps’ administrative record and FEIS. During the permitting process, EPA criticized the Army Corps’ analysis. When the Army Corps issued its FEIS, EPA “submitted a comment letter that expressed concerns about the adverse impacts . . . noting that many of EPA’s concerns had not been adequately addressed.” [Mingo Logan Coal Co. v. U.S. EPA (Mingo Logan III), 70 F. Supp. 3d 151, 158 (D.D.C. 2014), aff’d 829 F.3d 710 (D.C. Cir. 2016) [<https://perma.cc/Q4X3-GPSG>].] When EPA subsequently issued a 404(c) Final Determination withdrawing the specification of the disposal site, it criticized the FEIS, noting that “recent data and analyses had revealed downstream water quality impacts that were not adequately addressed by the permit.” [Id. at 159.] In its Final Determination vetoing the Army Corps’ permit, EPA relied on a number of sources that differed from the findings in the FEIS, including “peer- reviewed literature, . . . available data documenting impacts from similar projects,” and communications “with the US Fish and Wildlife Service on impacts to fish and wildlife resources in the project area.” [U.S. EPA, Final Determination of the U.S. Environmental Protection Agency Pursuant to § 404(c) of the Clean Water Act Concerning the Spruce No. 1 Mine, Logan County, West Virginia 45 (2011) [<https://perma.cc/ZGW4-WJ5X>].] The court upheld EPA’s reliance on those alternative information sources. EPA therefore remains unconstrained by the Army Corps’ administrative record and, as is the case here, may appropriately distinguish the flawed findings in the Army Corps’ FEIS for underestimating impacts to aquatic resources and failing to consider relevant science.

EPA Response

EPA agrees that the Agency is acting within its Congressionally granted authority. Section 404(c) of the CWA provides EPA with independent authority, separate and apart from the USACE permitting process, to review and evaluate potential discharges of dredged or fill material into waters of the United States. The Agency has authority to act under CWA Section 404(c) “whenever” it makes the required determinations under the statute, including before a permit application has been submitted, at any point during the permitting process, or after a permit has been issued. 33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (DC Cir. 2013). Nothing in the CWA or EPA’s CWA Section 404(c) regulations precludes EPA from exercising its authority when USACE has denied a permit. See Section 2 of the FD for a detailed description of EPA’s CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency’s rationale for acting now.

EPA agrees with the commenter, as stated in the PD, that EPA appropriately included all portions of the voluminous administrative record for the USACE Pebble Mine permit decision that are relevant to EPA’s decision-making and that EPA considered in its decision to issue the PD and FD. EPA also agrees with the commenter that the Agency is not constrained by the findings in the USACE administrative record and that the Agency

can and should rely on the extensive body of scientific and technical information that has become available. EPA agrees that the legislative history cited by the commenter does not suggest that when exercising its CWA Section 404(c) authority EPA is precluded from acting in the absence of a permit application or after a USACE permit denial. EPA agrees that courts, including the court decisions cited by the commenter, have upheld EPA's broad, independent authority and found that the legislative history of the CWA validates EPA authority to act under CWA Section 404(c) without the need to accept the findings of USACE.

Appendix B (Attachment 1) of the FD addresses FEIS conclusions that appear to be inconsistent with the FD.

2.C.35 Resource Development Council for Alaska, Inc. (RDC) (Doc. #0840, p. 1-2)

RDC opposes the EPA's notice of Proposed Determination (PD) Pursuant to Section 404(c) CWA for the Pebble Deposit Area that would expand beyond the current proposed project to additional state owned lands in Southwest Alaska. This is consistent with RDC's previous position on the EPA's attempt in 2014 to preemptively veto the project. The new PD does not allow the project to be fully evaluated for several reasons.

First, the timing of this action is without explanation. The EPA has been a cooperating agency involved in the Environmental Impact Statement (EIS) process for the Pebble Project over the course of three years and never raised objections of the magnitude now expressed in the PD.

The PD goes too far and represents federal overreach. It would preclude any activity in the watershed around the Pebble site (these are the watershed boundaries of the North Fork Koktuli, South Fork Koktuli, and Upper Talarik Creek) regardless of action by the USACE. Without explanation, the PD undermines the extensive, multi-agency EIS for Pebble (led by the USACE) that found no harm to the Bristol Bay fishery. The EIS specifically said that fishermen would see no reduction in fish values and that downstream waters would not see impacts beyond what would be expected to be seen in season fluctuations. The following citations from the EIS demonstrate that project will not harm the fishery:

* There would be no measurable change in the number of returning salmon and the historical relationship between ex-vessel values and wholesale values. In addition, there would be no changes to wholesale values or processor operations expected for Alternative 1a. Under normal operations, the Alternatives would not be expected to have a measurable effect on fish numbers and result in long-term changes to the health of the commercial fisheries in Bristol Bay.(ES 87)

* Under normal operations, the alternatives would not be expected to have a measurable effect on fish numbers or result in long-term changes to the health of the commercial fisheries in Bristol Bay. (4.6-3)

* The mine site area is not connected to the Togiak, Ugashik, Naknek, and Egegik watersheds and is not expected to affect fish populations or harvests from these watersheds. (Table 4.6-1, P4.6-4)

- * This alternative would not be expected to have measurable effects on the number of adult salmon, and therefore would have no impact to commercial fisheries. (Table 4.6-1, P. 4.6-4)
- * As with Alternative 1a, Alternative 3 would not be expected to measurably affect the health or value of Bristol Bay salmon fishery, including permit holder earnings, permit holder value, crew earnings, fishery first wholesale values, processor earnings, or local fiscal contributions. (4.6-18)
- * However, considering the physical characteristics and current fish use of habitat to be removed, the consequently low densities of juvenile Chinook and coho observed in the affected tributaries, and the few numbers of spawning coho observed (see Section 3.24, Fish Values), impacts to anadromous and resident fish populations from these direct habitat losses would not be measurable, and would be expected to fall within the range of natural variability. (4.24-46)
- * Other salmon fisheries in Alaska exist in conjunction with non-renewable resource extraction industries. For example, the Cook Inlet salmon fisheries exist in an active oil and gas basin and have developed headwaters of Anchorage and the Matanuska-Susitna areas. The Copper River salmon fishery occurs in a watershed with the remains of the historic Kennecott Copper Mine and the Trans Alaska Pipeline System in the headwaters of portions of the fishery. Both fisheries average higher prices per pound than the Bristol Bay Salmon Fishery. (ES 86)
- * The mine-impacted anadromous streams amount to less than 1/10th of 1% (0.08%) of all mapped anadromous streams in the Bristol Bay watershed (9819 miles). As the EIS acknowledges, impacts to salmon species are so small that they cannot be measured.

EPA Response

EPA disagrees that the project has not been fully evaluated. EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, including the relevant portions of the USACE permitting record, and this information supports the findings in the FD. EPA disagrees that the timing of this action is without explanation. Section 2 of the PD, RD, and FD explain EPA's CWA Section 404(c) authority, as well as its rationale for acting now.

With regard to EPA's involvement as a cooperating agency in the EIS process, please see EPA's response to comment 2.C.6. EPA disagrees that its action undermines the EIS process. As discussed above, EPA reviewed the available information, including the relevant portions of the USACE permitting record, and this information supports the findings in the FD. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. Appendix B (Attachment 1) of the FD addresses FEIS conclusions that appear to be inconsistent with the FD.

EPA disagrees that its action represents federal overreach. As explained in Section 2 of the FD, EPA is acting within its Congressionally granted authority. EPA's action limits USACE's ability to specify certain waters of the United States as disposal sites for certain

discharges of dredged or fill material associated with mining the Pebble deposit only. Section 5 of the FD describes the defined area for prohibition and the defined area for restriction, within which EPA’s action limits USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD. For the same reasons, EPA disagrees that the Agency’s action would fully block any development across any area of land.

2.C.36 Resource Development Council for Alaska, Inc. (RDC) (Doc. #0840, p. 3)

Further, there is still a process pending before the Army Corps of Engineers and the applicant should be entitled to due process. As in 2014, the PD would preemptively veto the permitting process. Every project, no matter its size or location, should be allowed to go through the permitting process. That process should ultimately determine whether a project moves forward.

EPA Response

EPA explains its CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency’s rationale for acting now in Section 2 of the FD.

2.C.37 Alaska Oil & Gas Association (AOGA) (Doc. #0859, p. 1)

AOGA opposed the Environmental Protection Agency’s (EPA) proposed determination to restrict the use of an area as a disposal site in 2014. In our comments on September 19, 2014, AOGA described the proposed EPA action then to be a “drastic departure from established protocols”. In AOGA’s view, the current EPA proposed determination to prohibit and restrict the use of certain waters in the Bristol Bay Watershed is another drastic departure from established protocols and AOGA opposes this proposed action.

Like the previous determination, this proposed determination is a dangerous precedent setting measure that undermines the permitting system for any type of project in Alaska. Once again, the EPA is attempting to circumvent a well-established and statutorily mandated protocol. The proposed determination undermines the stability and predictability of the permitting process.

EPA Response

EPA has used its CWA Section 404(c) authority judiciously, having completed only 13 Section 404(c) actions in the 50-year history of the CWA. EPA exercises its CWA Section 404(c) authority on a case-by-case basis based on the specific facts of each situation consistent with applicable statutory and regulatory requirements. EPA disagrees that EPA’s action is an “attempt[]to circumvent a well-established and statutorily mandated

protocol.” EPA also disagrees that EPA’s action sets a precedent that undermines the permitting system for any type of project in Alaska. EPA is acting within its Congressionally granted authority, which is an important part of the CWA Section 404 regulatory structure. EPA explains its CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency’s rationale for acting now in Section 2 of the FD.

2.C.38 Alaska Oil & Gas Association (AOGA) (Doc. #0859, pp. 1-2)

This is not the first time the EPA has tried to utilize this type of action in Alaska. When the preemptive veto was issued in 2014 the permit applicant had not yet completed the required studies or articulated its proposed development plan. AOGA opposed the proposed determination then because project applicants should be allowed to go through the permitting process, providing the required information which agencies must use as the basis of any determination. We do not support any agency attempting to stop a project before the process can even get started or be completed.

Today, the EPA is attempting to shutter a project before an applicant is afforded full due process. In this case, the project applicant did submit a permit application in 2018, was issued a draft Environmental Impact Statement (EIS) in 2019 and received a final EIS that the project could proceed in July 2020. It is notable that the EPA was also a full participant in that three- year EIS process, led by the U.S. Army Corps of Engineers (Corps), and did not raise the current issues which are now the basis for this proposed determination.

Ultimately, the Corps denied the project’s permit in November 2020 and the project applicant appealed that decision in January 2021. Not only has the Corps not yet issued a decision on the appeal, which usually occurs within twelve months, the permit applicant has yet to be granted its initial meeting with the agency to start the appeal process. It is unfathomable that an agency would attempt to stop a project before it is afforded full due process by another agency.

Development of Alaska’s resources have been, and will continue to be, the backbone of Alaska’s economy for decades to come. All projects in Alaska deserve a consistent, science- based, objective regulatory process. Any preemptive action, including this proposed determination, undermines the foundation of the current regulatory system, and causes our industry grave concerns that similar actions will be applied to current and future oil and gas projects.

EPA Response

With respect to the commenter’s assertions regarding past EPA actions, past actions are outside the scope of EPA’s current Section 404(c) process. Although EPA relies on an extensive and well supported scientific and technical record that spans decades, EPA engaged in a new, open, and transparent CWA 404(c) review process, which, consistent with EPA’s CWA Section 404(c) regulations, included providing multiple opportunities for the applicant, the State of Alaska, USACE, and other owners of record to consult with EPA, as well as a public review and comment period and public hearings on the PD.

With respect to the commenter’s assertion that EPA is attempting to shutter a project before an applicant is afforded full due process, EPA disagrees. As an initial matter, Section 404(c) of the CWA provides EPA with independent authority, separate and apart from the USACE permitting process, to review and evaluate potential discharges of dredged or fill material into waters of the United States and the Agency has authority to act under CWA Section 404(c) “whenever” it makes the required determinations under the statute, including before a permit application has been submitted, at any point during the permitting process, or after a permit has been issued. 33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (D.C. Cir. 2013). Nothing in the CWA or EPA’s CWA Section 404(c) regulations precludes EPA from exercising its authority where USACE has denied a permit. See Section 2 of the FD for a detailed description of EPA’s CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency’s rationale for acting now.

Further, as the commenter noted, the project applicant submitted a CWA Section 404 permit application, USACE subsequently issued a public notice that provided the permit application to the public and stated that an EIS would be required as part of its permit review process, consistent with NEPA. USACE also invited relevant federal, state, and local agencies, as well as tribal governments, to be cooperating agencies on the development of this EIS. EPA accepted the USACE invitation and became a NEPA cooperating agency.

With regard to EPA’s involvement as a cooperating agency in the EIS process, please see EPA’s response to comment 2.C.6. EPA’s CWA Section 404(c) review process was science-based and consistent with the CWA and EPA’s CWA Section 404(c) implementing regulations. EPA disagrees that its action undermines the foundation of the current regulatory system. EPA has used its CWA Section 404(c) authority judiciously, having completed only 13 prior Section 404(c) actions in the 50-year history of the CWA, but EPA’s Congressionally granted CWA Section 404(c) authority is an important part of CWA Section 404 regulatory structure. EPA exercises its CWA Section 404(c) authority on a case-by-case basis based on the specific facts of each situation consistent with applicable statutory and regulatory requirements. EPA’s determination of an “unacceptable adverse effect” in this and in every CWA Section 404(c) action necessarily involves a case-by-case determination that accounts for the unique characteristics of the aquatic resource that would be affected by discharges of dredged or fill material.

2.C.39 Owl Ridge Natural Resource Consultants, Inc. (Doc. #0865, pp. 1-2)

This comment is focused on, and troubled by, whether the 2022 PD constitutes pre-emptive decision making by EPA. Has EPA overstepped its authority in the issuance of the 2022 PD? And most troubling of

all, how broadly could the logic and rationale used by EPA in the 2022 PD be used or applied by EPA in other decision-making situations nationwide?

The EPA's actions are very likely rooted in politics and not science. To get to a politically desirable outcome, EPA has distorted and violated required administrative processes. This is troubling and an unacceptable departure from its core regulatory mission. The 2022 PD should be rejected, and the agency should return to its proper regulatory role.

(...)

EPA's decision to block future mineral development, years or decades before specific developmental proposals are before it, are not consistent with the legal requirements of the Administrative Procedures Act and must be discarded by the Agency.

EPA's bold actions here – misapplying the Clean Water Act 404(c) process – and contravening the USACE's conclusions in the 2020 Final EIS, are likely to be judicially reversed. The U.S. Supreme Court in its recent decision *West Virginia v. Environmental Protection Agency* (Docket No. 20-1530, decided June 30, 2022) employed the new 'major decisions' doctrine to reverse an EPA rule (Clean Power Plan). The Supreme Court, whether correct to do so, examined an EPA rule without an explicit grant of judicial review authority from Congress. The 'major decisions' doctrine will very likely apply to EPA's actions that limit or outright prohibit development of minerals critical to the nation's economic interests. With this level of judicial review likely, EPA should step back from its 2022 PD and commit to a de novo review process that complies with requirements of the Administrative Procedures Act and the Clean Water Act.

It is quite concerning that EPA was a participating agency in the USACE's 2020 Final EIS, and yet did not voice its concerns that manifest in EPA's 2022 PD. We think EPA should have provided scientific data and an articulated rationale to challenge the 2020 Final EIS at the time it was being developed and finalized. Without this kind of participation, EPA's 2022 PD appears to have devolved into an outcome-based political process with no basis in administrative law to challenge (and alter) a decision that thoroughly followed all aspects of NEPA, the APA, and the CWA. EPA's credibility is deeply diminished, which is unfortunate.

EPA Response

EPA is acting within its Congressionally granted authority. Section 404(c) of the CWA provides EPA with independent authority, separate and apart from the USACE permitting process, to review and evaluate potential discharges of dredged or fill material into waters of the United States. The Agency has authority to act under CWA Section 404(c) “whenever” it makes the required determinations under the statute, including before a permit application has been submitted, at any point during the permitting process, or after a permit has been issued. 33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (DC Cir. 2013). Nothing in the CWA or EPA's CWA Section 404(c) regulations precludes EPA from exercising its authority where USACE has denied a

permit. See Section 2 of the FD for a detailed description of EPA’s CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency’s rationale for acting now.

EPA has used its CWA Section 404(c) authority judiciously, having completed only 13 Section 404(c) actions in the 50-year history of the CWA. EPA exercises its CWA Section 404(c) authority on a case-by-case basis based on the specific facts of each situation consistent with applicable statutory and regulatory requirements. EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas. With regard to EPA’s involvement as a cooperating agency in the EIS process, see EPA’s response to comment 2.C.6. Appendix B (Attachment 1) of the FD addresses FEIS conclusions that appear to be inconsistent with the FD.

With respect to the commenter’s position that EPA’s action blocks future mineral development, EPA disagrees. EPA’s action prohibits and restricts USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material. Further, EPA’s action is consistent with the plain meaning of CWA Section 404(c), Congressional intent that EPA have broad authority to prevent unacceptable adverse effects on specific aquatic resources, and EPA’s CWA Section 404(c) regulations.

With respect to the commenter’s position on the Major Questions Doctrine, see EPA’s response to comment 2.C.25.

2.C.40 Council of Alaska Producers (CAP) (Doc. #1028, p. 1)

This letter is in addition to letters CAP submitted on 5/11/2012, 7/23/2012, 5/29/2013, 8/4/2014, 9/15/2014, and 10/16/2017, as well as oral testimony, expressing concerns that the EPA might act preemptively. The EPA’s proposed action does not just affect the current Pebble permit application, but is also a preemptive veto of any future proposals in the area by fully blocking any development actions across 309 square miles of Alaska land. This undermines the existing regulatory responsibilities of state and federal agencies and weakens the authority of the NEPA process.

The development of our natural resources requires a regulatory framework that is rigorous, science based, transparent, and consistent. EPA was a full participant in the Environmental Impact Statement (EIS) process for the Pebble Project over the course of three years and never raised objections of this magnitude. The Final EIS submitted by the US Army Corps of Engineers found that no harm would be done to the Bristol Bay fishery. It also showed that the project would create jobs and generate valuable

economic activity, especially for nearby communities, as well as providing significant revenue to local and state government in Alaska.

Out of respect for the rule of law and the NEPA process, the EPA should withdraw this ill-advised Proposed Determination.

EPA Response

EPA disagrees that its action would fully block any development actions across 309 square miles of Alaska land. See EPA’s response to comment 5.B.32.

EPA also disagrees with the commenter that the Agency’s action undermines existing regulatory responsibilities of state and federal agencies and the NEPA process. EPA is exercising its Congressionally granted CWA Section 404(c) authority consistent with the law. Section 2 of the FD explains EPA’s CWA Section 404(c) authority, as well as its rationale for acting now. With regard to EPA’s involvement as a cooperating agency in the EIS process, see EPA’s response to comment 2.C.6.

With respect to the commenter’s contention that EPA should have withdrawn the PD, EPA disagrees. EPA reviewed the available information, including the relevant portions of the USACE permitting record, and this information supports the findings in the FD. Section 4 of the FD describes the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas. Appendix B (Attachment 1) of the FD addresses FEIS conclusions that appear to be inconsistent with the FD.

EPA discusses the costs and benefits its action, including information related to job creation and other economic activity in *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b). See also EPA’s response to comments in Topic 6.F.

2.C.41 The Pebble Limited Partnership (PLP) (Doc. #1912, pp. 6-7)

Against this backdrop, and for the reasons outlined below, there is no justification for EPA to proceed with the Revised Proposed Determination.

First, 404(c) action is unwarranted because it is premature. The Clean Water Act, EPA regulations, and past practice confirm that EPA’s veto authority is limited to instances where USACE has indicated that it intends to issue a permit. USACE has not yet done so here, and has in fact denied PLP’s permit application, which PLP is currently appealing. EPA retains its veto authority if the PLP permit decision is remanded to the District and USACE announces its intent to issue the permit, or if a new permit application is submitted and USACE announces its intent to issue that permit. But pursuing a veto in the absence of such an indication by USACE is contrary to law and EPA precedent.

Moreover, the regulations and EPA policy require that EPA exhaust specific measures during the permitting process to voice and address its concerns before issuing a Section 404(c) veto. EPA has not

exhausted these steps here. Thus, EPA cannot invoke Section 404(c) the permit decision is remanded and EPA exhausts all of its elevation procedures. Given these legal and procedural deficiencies, EPA must withdraw the Revised Proposed Determination.

Second, EPA's proposal to restrict future development of the Pebble Deposit is legally and technically unsupportable. Congress only granted EPA the authority to prohibit or restrict specific disposal sites defined in a permit. Congress has never granted EPA the authority to set aside large areas of land, nor do EPA's regulations contemplate such authority. Despite this lack of authority, EPA now proposes to restrict disposal under Section 404(c) in a "disposal site" that is 309 square miles. The 309-square-mile area proposed for restricting mining is over 23 times larger than the 2020 Mine Plan. [See USACE, Pebble Project Final Environmental Impact Statement (July 2020) ("FEIS") (mine site of "8,391 acres of land").] Thus, EPA's proposal does not restrict a specific disposal site. In fact, it is 66 times larger than the largest site designated in any prior Section 404(c) action. And beyond being legally indefensible, EPA's proposal is technically indefensible. The environmental impacts associated with the 2020 Mine Plan are significantly smaller than those predicted for the hypothetical scenarios assessed by EPA in the 2014 Proposed Determination. Yet, somehow, the area of restriction proposed by EPA in the Revised Proposed Determination has actually grown by 40 square miles. EPA does not explain how such reduced impacts justify imposing restrictions that are even larger and more untethered to the 2020 Mine Plan.

It is thus clear that EPA did not propose restrictions that were tailored to avoid any demonstrated impacts to local or regional fish populations or fisheries. Instead, motivated by a desire to stop any development of the Pebble Deposit, EPA chose to simply identify the broadest possible area where mining activity could occur and set it aside to preclude any future development, whether contemplated by PLP's permit application or not.

Third, under Section 404(c), EPA can only restrict disposal in specific waterbodies where EPA can demonstrate "that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas." 33 U.S.C. § 1344(c). No such demonstration has been made in the Revised Proposed Determination. EPA has not quantified any impact of mineral development at the Pebble Deposit on fish populations or fisheries, much less demonstrated the significance of any such effect on fish populations or fisheries. Instead, EPA states that mineral development at Pebble "could have" unacceptable effects. For example, EPA lists a range of factors that can impact the value of fish habitat, but notes that "because these considerations are impossible to predict with precision, a precautionary approach that maintains habitat structure and function is warranted." [Revised Proposed Determination at B-5.] In other words, EPA does not know and cannot determine what habitat is actually important to the fisheries, but is proposing to set aside the entire area from development just in case this impact is important and just in case the 2020 Mine Plan would cause such an impact that rises to the level of being unacceptable. But EPA does not have authority to set aside 309 square miles of state-owned land based on speculation and "precaution;" it is statutorily required to show that there "will" be an adverse effect, and that such an effect "will" be unacceptable. If the actual aquatic resource impacts cannot be adequately assessed based on the current data, EPA must generate new data that

demonstrates actual unacceptable adverse impacts to fish populations or fisheries before it can pursue any 404(c) action. [PLP reserves the right to submit additional materials to supplement and support these comments.]

EPA has utterly failed to justify any action under 404(c), much less this extreme action of setting aside 309 square miles of state-owned land. For the reasons outlined more fully below, EPA should withdraw the Revised Proposed Determination and refrain from any further action under 404(c) with regard to the Pebble Deposit.

EPA Response

EPA disagrees with the commenter's contention that EPA's action is unwarranted because it is premature. Nothing in the CWA or EPA's CWA Section 404(c) regulations limits EPA's authority to act under CWA Section 404(c) to instances where USACE has indicated that it intends to issue a permit. EPA's past practice reflects the Agency's longstanding and court-affirmed position that it has authority to act "whenever" it makes the required determinations under the statute, including before a permit application has been submitted, at any point during the permitting process, or after a permit has been issued. 33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (D.C. Cir. 2013). Further, nothing in the CWA or EPA's CWA Section 404(c) regulations precludes EPA from exercising its authority where USACE has denied a permit.

EPA disagrees with the commenter that the CWA Section 404(c) regulations and EPA policy require EPA to exhaust specific measures during the permitting process before exercising its CWA Section 404(c) authority. To the extent that the commenter is referencing the comment in EPA's CWA Section 404(c) regulations, Section 2 of the FD explains that nothing in the CWA or EPA's regulations restricts EPA to considering information or concerns raised during the Section 404(q) elevation process, if any. Indeed, the Section 404(q) MOA itself recognizes that it does not constrain EPA's statutory authority under CWA Section 404(c): "[t]his agreement does not diminish either Army's authority to decide whether a particular individual permit should be granted, including determining whether the project is in compliance with the Section 404(b)(1) Guidelines, or the Administrator's authority under Section 404(c) of the Clean Water Act" (EPA and DOA 1992: Part I, paragraph 5). The fact that EPA retains its authority to act in the event that USACE were to remand the permit denial does not alter or constrain EPA's authority to act now. In addition, USACE has a separate authority to issue a permit and is not legally required to "announce its intent to issue a permit." See EPA's response to comment 2.C.7.

With respect to the commenter's assertion that Congress only granted EPA the authority to prohibit or restrict specific disposal sites defined in a permit, EPA disagrees. Just as EPA is not constrained under CWA Section 404(c) to act only in instances where USACE has indicated an intent to issue a permit, the Agency is not constrained to limiting

USACE's ability to specify disposal sites that have been defined in a permit. Congress granted EPA broad authority under CWA Section 404(c) to prohibit the specification (including the withdrawal of specification) of *any defined area* as a disposal site, and to deny or restrict the use of *any defined area* for specification (including the withdrawal of specification) as a disposal site, whenever it determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on certain statutorily enumerated resources. USACE is authorized to specify a disposal site in a permit, but that is subject to EPA's authority to prohibit, deny, or restrict the use of any defined area as a disposal site any time EPA makes the requisite unacceptable adverse effects determination. The commenter's interpretation mischaracterizes the meaning of the provision. Requiring EPA to wait for USACE to specify a disposal site would eliminate EPA's express statutory authority to prohibit the specification or restrict the use of any defined area as a disposal at any time, so long as it makes the required determination. *See Mingo Logan*, 714 F.3d at 613 ("Using the expansive conjunction 'whenever,' the Congress made plain its intent to grant the Administrator authority to prohibit/deny/restrict/withdraw a specification at any time.").

As to the commenter's contention that "the 309-square-mile area proposed for restricting mining is over 23 times larger than the 2020 Mine Plan. . . . [and] is 66 times larger than the largest site designated in any prior Section 404(c) action, EPA disagrees. EPA further disagrees with the commenter's characterization of EPA's action as "setting aside land." EPA's authority to regulate under the CWA is limited to waters of the United States. Section 5.1 of the FD explicitly states that the FD prohibits "the specification of waters of the United States within the Defined Area for Prohibition, as identified in Section 5.1.1, as disposal sites for the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan." (Emphasis added). Section 5.1.1 also explicitly states that "[t]he Defined Area for Prohibition identifies the geographic boundary within which the prohibition applies to waters of the United States." (Emphasis added). Similarly, Section 5.2 of the FD explicitly states that the FD restricts "the use of waters of the United States within the Defined Area for Restriction, as identified in Section 5.2.1, for specification as disposal sites for the discharge of dredged or fill material associated with future proposals to construct and operate a mine to develop the Pebble deposit . . ." (Emphasis added). EPA has revised Section 5.2.1 of the FD to make explicitly clear that the Defined Area for Restriction identifies the geographic boundary within which the restriction applies to waters of the United States. See EPA's response to comment 5.B.32. EPA notes that the defined area for restriction in the FD is not the "largest site designated in any prior Section 404(c) action." The defined area in EPA's 2008 Final Determination for the Yazoo Pumps project is comprised of 926,000 acres (or 1,446 square miles). Regardless, as a general matter, the size of the defined area in a given Section 404(c) final determination is entirely unrelated to the size of the defined areas in other CWA Section

404(c) actions. EPA is “free to consider—or not—the suitability of invoking its Section 404(c) authority with respect to any given geographical area. Both the statute and the first steps in the regulations, 40 C.F.R. § 231.3(a), grant the agency unfettered discretion.” *Trout Unlimited v. Pirzadeh*, 1 F.4th 738, 758 (9th Cir. 2021). “Congress provided that ‘[t]he Administrator *is authorized*’ to restrict the specification ‘of *any* defined area . . . as a disposal site, *whenever he determines*, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect’ on specified resources.” *Id.* at 752 (Emphasis in original). “And the number of ‘any defined [geographical] area[s]’ is limitless, suggesting that the agency retains discretion to choose among areas of infinite variation.” *Id.* See also EPA’s response to comment 2.C.21.

To the extent that the commenter contends that the action is technically indefensible because EPA changed the size of the defined area for restriction from the size of the defined area in the 2014 Proposed Determination, EPA disagrees. Although EPA relies on an extensive and well supported scientific and technical record that spans decades, EPA engaged in a new, open, and transparent CWA 404(c) review process, which, consistent with EPA’s CWA Section 404(c) regulations, included providing multiple opportunities for the applicant, the State of Alaska, USACE, and other owners of record to consult with EPA, as well as a public review and comment period and public hearings on the PD. As explained in Appendix A of the PD, the 2020 Mine Plan is based on new assumptions, higher resolution aquatic resource mapping, and more sophisticated modeling than the information that supported the analysis in the 2014 PD. And in light of the evolution of the scientific and technical record since 2014, EPA developed its revised PD with a focus on adverse effects resulting from discharges of dredged or fill material associated with the 2020 Mine Plan. See EPA’s responses to comments 7.0.1 and 7.0.2. As a factual matter, the commenter’s assertion that the environmental impacts associated with the 2020 Mine Plan are significantly smaller than those assessed by EPA in the 2014 Proposed Determination is incorrect. The impacts from the 2020 Mine Plan are objectively greater than the predicted impacts that formed the basis of the 2014 proposed determination. The basis for the FD is closely tethered to the impacts of the 2020 Mine Plan. EPA explained the rationale for the defined areas in Section 5 of the FD.

EPA disagrees that its action is motivated by a desire to stop all development of the Pebble deposit. See EPA’s response to comment 5.B.32. See also EPA’s response to comment 4.B.41.

EPA agrees that, under CWA Section 404(c), it must make the requisite finding that discharges of dredged or fill material will have an unacceptable adverse effect on certain statutorily enumerated resources, including fishery areas. EPA has made such a determination. Section 4 of the FD describes EPA’s basis for its findings of unacceptable adverse effects on anadromous fishery areas. With respect to the commenter’s contention

that EPA has not quantified any impact of mineral development at the Pebble deposit on fish populations or fisheries, much less demonstrated the significance of any such effect on fish populations or fisheries, see EPA’s responses to comments 4.A.1 and 4.B.41.

With respect to the commenter’s contention that EPA has not made such a finding because it determined that the discharges evaluated in the PD “could have” unacceptable adverse effects, EPA disagrees. EPA’s findings in the PD were consistent with EPA’s CWA Section 404(c) regulations at that stage of the review process. See 40 CFR 231.3(a) (“If the Regional Administrator has reason to believe . . . that an ‘unacceptable adverse effect’ could result from the specification or use for specification of a defined area for the disposal of dredged or fill material, he may initiate the following actions” regarding proposed determinations) (emphasis added).

See also EPA’s responses to comments 4.A.1, 4.A.2., 4.B.41, 4.B.42, 4.B.44, 4.B.45, 4.C.6, 4.C.7, 4.D.2, 4.E.1, 4.F.4, 4.F.5, 4.F.6, 4.F.7, 4.I.13, 4.J.18, 4.J.22, 4.J.23, and 5.B.32.

2.C.42 The Pebble Limited Partnership (PLP) (Doc. #1912, pp. 14-20)

III. EPA’s Proposal is Legally Unsupportable

A. EPA’s Veto is Premature Because USACE Has Not Yet Indicated its Intent to Issue the CWA Permit

The Revised Proposed Determination is premature because USACE has not yet indicated that it intends to issue a permit. Section 404 “gives the EPA authority to veto the Corps’ issuance of a . . . permit.” *Hill v. Boy*, 144 F.3d 1446, 1448 n.5 (11th Cir. 1998) (emphasis added). And EPA itself has admitted in prior Section 404 actions that its “authority may be used either to veto a permit which the Corps has determined it would issue . . . or to withdraw an issued permit.” See *EPA, Babb Drum Site; Proposed Settlement*, 53 Fed. Reg. 26859, 26860 (July 15, 1988) (emphasis added). In short, there is nothing here to veto, and the Revised Proposed Determination is an unauthorized attempt to skip to the end of the process to achieve EPA’s desired outcome.

Congress provided clear roles for EPA and USACE in Section 404. Under Section 404(b), a “disposal site shall be specified for each such permit by the Secretary [of the Army].” 33 U.S.C. § 1344(b) (emphasis added). EPA may only act under Section 404(c) “to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever [EPA Administrator] determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.” 33 U.S.C. § 1344(c) (emphasis added). And “[o]nce the Corps has set forth its intention to issue a particular permit, the EPA is empowered to veto said permit.” *James City Cnty., Va. v. EPA*, 758 F. Supp. 348, 351 (E.D. Va. 1990), *aff’d*, remanded in part on other grounds, 955 F.3d 254 (4th Cir. 1992). It is thus USACE’s decision to issue a permit specifying a disposal site that triggers EPA’s veto authority and determines what EPA can actually veto.

EPA's CWA regulations underscore this point. "Disposal site" is defined as "that portion of the waters of the United States where specific disposal activities are permitted." 40 C.F.R. § 230.3(f) (emphasis added). Because Section 404(c) only permits EPA to deny or restrict the use of "any defined area for specification ... as a disposal site," it follows that EPA cannot invoke its veto authority until USACE indicates its intent to issue a permit specifying such disposal sites.

And EPA's past vetoes have adhered to this statutory proscription, initiating Section 404(c) procedures after USACE has indicated its intent to issue a Section 404 permit. See, e.g., EPA, Recommended 404(c) Determination for the M.A. Norden Permit Application at 1, Mobile District File No. AL80-00327-C (Jan. 13, 1984) ("Norden RD") (USACE indicated intent to issue permit before EPA initiated Section 404(c) procedures); EPA, Final Determination of the Assistant Administrator for External Affairs Concerning the Sweedens Swamp Site in Attleboro, MA Pursuant to Section 404(c) of the Clean Water Act at App. A-3 (May 13, 1986) (same); EPA, Recommended Determination to prohibit construction of Two Forks Dam and Reservoir Pursuant to Section 404(c) of the Clean Water Act at 2 (Mar. 1990) (same).

Not surprisingly then, federal courts have time and again emphasized that EPA's Section 404 authority is limited to "the issuance of permits." *Hoffman Homes, Inc. v. Administrator, EPA*, 961 F.2d 1310, 1312 n.2 (7th Cir. 1992), order vacated on other grounds, 975 F.2d 1554 (7th Cir. 1992); see also *Holy Cross Wilderness Fund v. Madigan*, 960 F.2d 1515, 1525 (10th Cir. 1992) ("The EPA may veto the issuance of a permit which will have an 'unacceptable adverse effect' on, inter alia, a wetland ecosystem."); *Hill*, 144 F.3d at 1448 n.5 (Section 404 "gives the EPA authority to veto the Corps' issuance of a . . . permit.") (emphasis added); *Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 442 n.4 (4th Cir. 1996) ("The EPA has the authority to veto a decision by the Corps to issue a § 404 permit . . ."); *James City Cnty.*, 758 F. Supp. at 351 ("Once the Corps has set forth its intention to issue a particular permit, the EPA is empowered to veto said permit."); *Menominee Indian Tribe v. EPA*, 360 F. Supp. 3d 847, 851 (E.D. Wisc. 2018) ("EPA retains oversight of the Section 404 permitting program and may veto the Corps' approval of a permit . . ."), *aff'd*, 947 F.3d 1065 (7th Cir. 2020). The Revised Proposed Determination, without a permit to address, is thus a premature and improper exercise of Section 404 veto power.

EPA's present attempt to exceed its statutory mandate is even more improper in light of recent Supreme Court precedent. In *West Virginia v. EPA*, the Supreme Court strengthened the principle that "[a]gencies only have those powers given to them by Congress, and 'enabling legislation' is generally not an 'open book to which the agency [may] add pages and change the plot line.'" 142 S.Ct. 2587, 2609 (2022). Thus, EPA may not use Section 404(c)'s narrow grant of authority to veto permits before USACE has indicated its intent to issue such a permit and defining the area for specification as a disposal site. This is especially true when an agency's claim of authority touches on a "major question," or an area in which there is "economic and political significance" and on which Congress would presumably want a say in shaping policy. *Id.* at 2608-09. The Clean Water Act permitting process has profound economic and political significance in both Alaska and across the United States, as permits are major drivers of economic and community development. As such, before EPA expands its own power, there must be a "clear statement . . . that Congress intended to delegate authority of this breadth to regulate a

fundamental sector of the economy.” Id. at 2605 (citation omitted). As the Court concluded, “[w]e presume that Congress intends to make major policy decisions itself, not leave those decisions to agencies.” Id. at 2609 (citation omitted). Congress’s intent in the Clean Water Act was to grant EPA limited authority in the permitting process, and EPA cannot expand that authority to suit its whims.

Finally, if PLP’s appeal is successful and USACE’s permit decision is remanded to the Alaska District for further consideration, EPA retains its full Section 404(c) authority. In other words, if USACE eventually decides to issue a permit that EPA demonstrates will have unacceptable adverse effects, the Agency can initiate a Section 404(c) veto at that time. EPA has explicitly recognized this proper sequence of events: When it initially withdrew the 2014 Proposed Determination, EPA stated that, if EPA’s “concerns remain outstanding when the Corps is ready to issue the permit, . . . EPA will have an opportunity to consider exercising its section 404(c) authority at that time.” EPA, Notification of Decision to Withdraw Proposed Determination to Restrict the Use of an Area as a Disposal Site; Pebble Deposit Area, Southwest Alaska, 84 Fed. Reg. 45749, 45753 (Aug. 30, 2019) (“Proposed Determination Withdrawal”) (emphasis added). Waiting for the proper time to initiate such a veto does not pose any environmental risk. PLP cannot begin any construction or mine development without a permit. Thus, there is simply no legal or environmental benefit to proceeding with the Revised Proposed Determination, yet the costs and repercussions of this action are vast.

B. EPA Failed to Exhaust the 404(q) Elevation Procedures Prior to Issuing the Revised Proposed Determination

As described above, EPA’s authority to issue a Section 404(c) veto is limited. But, in addition to the regulatory requirements described above, and the factual requirements described below, the CWA requires EPA to exhaust its statutory and regulatory tools during the permit application process before exercising its veto power. In particular, EPA is required to follow specific steps during the permit application process to voice its concerns so that USACE can determine whether and how a permit can accommodate such concerns. Such an approach is consistent with EPA’s statements when it formulated its CWA regulations, its current policies, and its practice over the decades since the CWA was passed.

Since EPA initially promulgated its Section 404 procedures, the Agency has maintained that it should fully participate in the permit application process and raise concerns and objections to USACE during that process. EPA declared in 1976 that an “announcement of intent to start a 404(c) action will ordinarily be preceded by an objection to the permit application.” EPA, Denial or Restriction of Disposal Sites; Section 404(c) Procedures, 44 Fed. Reg. 58076, 58080 (Oct. 9, 1979) (“Section 404(c) Procedures”). EPA continued, “[i]t is not the Agency’s intention to hold back and then suddenly spring a veto action at the last minute.” Id. (emphasis added). EPA thus concedes, as it must, that a Section 404(c) veto “may be regarded as a tool of last resort,” which “implies that EPA will employ its tool of first resort, e.g. comment and consultation with the permitting authority at all stages of the permit process.” Id. (emphasis added). Indeed, the regulations themselves state, “[i]n cases involving a proposed disposal site for which a permit application is pending, it is anticipated that the procedures of the section 404

referral process will normally be exhausted prior to any final decision of whether to initiate a 404(c) proceeding.” 40 C.F.R. § 231.3(a) cmt.

EPA has now formalized these principles. In 1992, as directed by CWA Section 404(q), EPA and USACE executed a Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army (“1992 MOA”) that bound the two agencies to specific procedures for resolving potential disagreements. The 1992 MOA provided for a process for “elevation of specific individual permit cases . . . that involve aquatic resources of national importance [(‘ARNI’)].” [1992 MOA § IV, https://www.epa.gov/sites/default/files/2015-03/documents/1992_moa_404q.pdf.] The 1992 MOA explicitly incorporates Section 404(c), stating that the cases for elevation are those “similar in magnitude to cases evaluated under Section 404(c) of the Clean Water Act.” [Id.]

To guide the Agency’s process for raising concerns that correspond with Section 404(c), EPA has published a fact sheet that lays out clearly the steps the Agency must take. [EPA, Clean Water Act Section 404(q) Dispute Resolution Process (2015) (“EPA 404(q) Fact Sheet”), https://www.epa.gov/sites/default/files/2016-03/documents/404q_factsheet.pdf.] When the EPA Regional Administrator believes that a permit “may result in substantial and unacceptable impacts to Aquatic Resources of National Importance,” they are to notify USACE via letter (a “may affect letter” or “3(a) letter”). [EPA 404(q) Fact Sheet at 2.] When the Regional Administrator believes that a permit’s discharge “will have substantial and unacceptable impacts to an ARNI,” they must notify USACE via letter (a “will affect letter” or “3(b) letter”), stating in detail why such impact will occur and how the permit should be “modified, conditioned, or denied” to protect the ARNI. [Id.; 1992 MOA § IV.3(b).] Upon receipt of a 3(b) letter, the USACE District Engineer will notify the EPA Regional Administrator if USACE intends to issue the permit despite EPA’s concerns. [EPA 404(q) Fact Sheet at 2.] Then, the Regional Administrator can decide to “elevate” the permit decision, allowing EPA to seek review by the Assistant Secretary of the Army, during which time the permit is held in abeyance. [Id.] If, at that point, “the Assistant Secretary decides to proceed with the issuance of the permit over EPA’s objections, EPA decides whether to initiate a Section 404(c) ‘veto’ action.” [Id.] Thus, as EPA’s own fact sheet lays out, it is after these agency coordination procedures are exhausted that EPA may then initiate procedures under Section 404(c).

EPA’s past practice is consistent with these requirements, as EPA had previously only exercised its Section 404(c) authority as a last resort, and only after it had reviewed a proposed USACE permit decision and granted USACE and the project applicant an opportunity to address EPA’s concerns through project amendments and/or mitigation measures. For example, in 1984, EPA prepared a Recommended Determination for the proposed construction of an office, warehouse, and storage yard on filled wetlands in Mobile, Alabama. See Norden RD at 1. [This action took place before 1992, but EPA made clear that it viewed its requirements under the then-existing Section 404(q) MOA as binding. See Norden RD at 5 (describing the elevation process as necessary “[u]nder the Section 404(q) Memorandum of Agreement between EPA and the Department of the Army”).] EPA objected to the permit application, with which the USACE District initially agreed. Id. at 2. But the USACE Division, with the support of Alabama’s governor, reversed the District decision. Id. USACE then notified EPA of its

intent to issue a Section 404 permit, at which point EPA decided to invoke Section 404(q) to request review of the permit decision by the Assistant Secretary of the Army. *Id.* The Assistant Secretary denied EPA's review request based on his determination that the objection was "not an issue of national importance." *Id.* Only then did EPA initiate a Section 404(c) veto. *Id.*

As another example, EPA exhausted these procedures in the Russo Development matter as well. There, USACE submitted its Notice of Intent to Issue a permit to the Russo Development Corporation in December 1986. EPA, Recommendation of the Regional Administrator Region II Concerning Wetlands Owned by the Russo Development Corporation in Carlstadt, New Jersey Pursuant to Section 404(c) of the Clean Water Act at 5 (Jan. 19, 1988). EPA engaged in interagency consultation regarding the Agency's concerns, and when that consultation failed to yield a resolution, USACE issued a final Notice of Intent to Issue the permit. "In accordance with the 404(q) MOA" in place at the time, EPA requested "that the permit decision be reviewed at a level above the District Engineer." *Id.* After the Acting Assistant Secretary of the Army found that USACE had complied with the Section 404(b)(1) guidelines, it concluded that there was no basis for higher level review. *Id.* at 5-6. "Having exhausted these procedures to resolve [EPA's] concerns," EPA then initiated the Section 404(c) procedures. *Id.* at 6.

This is the normal course when EPA considers action under Section 404(c) for individual permits by a private entity. See e.g., EPA, Final Determination of the Administrator Concerning North Miami Landfill Site Pursuant to Section 404(c) of the Clean Water Act at 3 (Jan. 19, 1981) (noting that the permit application was elevated under 404(q) and "[w]hen these discussions failed to resolve the matter," the Corps notified EPA of its intent to issue the permit, and as a result EPA initiated its Section 404(c) action); EPA, Proposed Determination to Prohibit, or Deny Specification, or Use for Specification, of an Area as a Disposal Site, 45 Fed. Reg. 51275, 51276 (Aug. 1, 1980) (describing communication between EPA and USACE). And for good reason. The requirement to pursue the Section 404(q) process before initiating 404(c) action facilitates predictability and agency coordination in permit decision-making, requiring EPA to work through its concerns with USACE before triggering "last resort" action under 404(c).

Initially, EPA's actions regarding the Pebble Project conformed with these requirements. EPA sent a 3(a) letter to USACE on July 1, 2019. But EPA decided not to send a 3(b) letter, suggesting that, in fact, EPA could not demonstrate that the project "will" have substantial and unacceptable impacts, the very standard that EPA must now satisfy to finalize its Section 404(c) veto. On May 28, 2020, EPA explained to USACE that it had decided not to issue a 3(b) letter, citing USACE's "extensive engagement with the EPA" during the process as well as a "commitment to continue this coordination into the future." [Letter from C. Hladick, EPA Regional Administrator, to Col. D. Hibner, USACE Alaska District Engineer (May 28, 2020) ("EPA 3(b) Decline Letter"), <https://www.epa.gov/sites/production/files/2020-05/documents/bristol-bay-404q-supplemental-comments-5-28-2020.pdf>.] The established process was thus working as intended. Having concluded that it did not have sufficient information to demonstrate that the project would have unacceptable adverse effects such that a 3(b) letter was warranted, EPA cannot now pursue a Section 404(c) veto claiming that it believes there will be such effects. [If the permit decision is remanded to the Alaska District, EPA will still have the opportunity to elevate and, if

USACE indicates that it intends to issue a permit and EPA's concerns are not addressed, initiate Section 404(c) proceedings.]

EPA's public statements on the Pebble Project have also acknowledged that the 404(q) procedures must be exhausted before EPA initiates the veto process. When it withdrew the 2014 Proposed Determination in 2019, the Agency noted that:

[b]y initiating the 404(q) MOA process, EPA Region 10 is following an avenue to work with the Corps Alaska District throughout the permitting process to resolve concerns. If unresolved, EPA Region 10 can elevate to EPA headquarters, which can decide whether to engage with the Department of the Army.

Proposed Determination Withdrawal, 84 Fed. Reg. 45749, 45753 (emphasis added). EPA went further, stating: "there are other processes available now, including the 404(q) MOA process, for EPA to resolve any issues with the Corps as the record develops. EPA believes these processes should be exhausted prior to EPA deciding, based upon all information that has and will be further developed, to use its section 404(c) authority." Id. (emphasis added).

EPA's conclusion aligned with its regulations, which "contemplate that where there is a permit application pending, the Regional Administrator's initial determination of whether the discharge 'could' result in an unacceptable adverse effect would be made after considering the record developed during its coordination with the Corps on the permit application." Id. at 45751; see also id. at 45753 (concluding that "it is more appropriate to use well-established mechanisms to raise project-specific issues as the record develops during the permitting process and consider the full record before potential future decision-making on this matter"). Thus, the full USACE permitting process – including resolution of any pending appeals and exhaustion of all elevation procedures – should be complete before a Section 404(c) veto, EPA has admitted as much, conceding that "given . . . the language and structure of the 404(c) regulations, . . . the appropriate sequencing is to resolve technical issues during the Corps' permitting process rather than through a separate 404(c) process . . . that does not reflect the full record." Id. at 45754 (emphasis added); see also id. ("[C]onsistent with general administrative law principles for agency decision-making, EPA must consider the entire record of this proceeding.") (emphasis added). EPA, thus, must allow the full permitting process to unfold, including any appeals, 404(q) procedures, and USACE's notification of its intent to issue the permit, prior to initiating Section 404(c).

C. EPA Has Inherent Authority to Withdraw the Revised Proposed Determination

EPA incorrectly suggests that it was required to issue the Revised Proposed Determination because recent litigation forbids it from withdrawing the 2014 Proposed Determination. In support, EPA selectively cites a recent Ninth Circuit decision regarding the 2014 Proposed Determination, [Revised Proposed Determination at 2-14 (quoting Trout Unlimited v. Pirzadeh, 1 F.4th 738, 757 (9th Cir. 2021)).] even though that decision was based on a faulty premise, never corrected by EPA, and more importantly, does not require EPA to make such an affirmative environmental determination before withdrawing a proposed determination.

The Ninth Circuit adopted the plaintiffs' assertion that "there [was] only one previous withdrawal of a proposed determination" prior to the withdrawal of the 2014 Proposed Determination here. See *Trout Unlimited*, 1 F.4th at 757. Despite being factually inaccurate, EPA stayed silent, allowing the Ninth Circuit to accept as true the plaintiffs' claim. Based on this, the court stated that the "fact that the agency's previous withdrawal was due to its reassessment of environmental effects supports our view that the regulations contemplate precisely that inquiry." *Id.*

But the Revised Proposed Determination itself shows that the Ninth Circuit was misled. EPA admits that "[i]n the 50 years since Congress enacted CWA Section 404(c), EPA has only initiated the process 30 times and only issued 13 final determinations." [*Id.* at 2-18.] Thus, in the majority of cases where EPA has issued a proposed determination, the Agency has decided not to finalize a veto. If EPA was only permitted to withdraw a proposed determination based on a substantive finding that there would be no unacceptable adverse effects, the Federal Register would contain at least 17 notices articulating EPA's findings to that effect. EPA has not pointed to any language in these other veto actions indicating that such a high burden is required. And no such burden is imposed by either the CWA or EPA's regulations. See 33 C.F.R. § 231.5 (authorizing Regional Administrator to "either withdraw the proposed determination or prepare a recommended determination").

Nor does the Ninth Circuit decision require such a substantive finding, contrary to EPA's claim. The Ninth Circuit actually acknowledged that EPA is authorized to withdraw a proposed determination based on "procedural protections that the Corps has afforded to the EPA." *Trout Unlimited*, 1 F.4th at 759. As discussed in the preceding section, the normal permitting process allows EPA's concerns to be addressed through coordination with USACE and other federal agencies. If EPA's concerns could be resolved through those procedural mechanisms, this, the court found would be a sufficient rationale for withdrawing the Proposed Determination. See *id.* Thus, EPA is not bound to a proposed determination forever. EPA has discretion to withdraw a proposed determination if it can address its concerns via other means, even without making any affirmative statement that there are unlikely to be unacceptable adverse effects. This view is in line with other court precedent, as well. In 2014, a federal court ruled that "EPA's ability to veto Section 404 Permits is discretionary and the EPA is not required to do so even if it finds 'unacceptable adverse impacts.'" *Ctr. for Biological Diversity v. USACE*, No. CV-14-1667, 2014 WL 12923196, at *4 (C.D. Cal. Sept. 26, 2014) (citing CWA Section 404(c)). If EPA has discretion not to issue a veto even if it finds unacceptable adverse impacts, it would make no sense for EPA to be required to find no such impacts to withdraw a veto. Thus, EPA is under no legal obligation to proceed with the Revised Proposed Determination, and it may withdraw it as premature and unsupported.

EPA Response

See EPA's response to comment 2.C.41.

EPA acknowledges that it has the authority to exercise its CWA Section 404(c) authority during the permitting process and has done so in the past. EPA disagrees that its authority is limited to acting only during the permitting process. EPA can exercise its Section 404(c) authority before, during and after the permitting process. See, e.g., *Mingo*

Logan Coal Co. v. U.S. EPA, 714 F.3d 608, 613 (D.C. Cir. 2013). EPA’s past practice demonstrates that it has in fact exercised its authority at these various stages. See EPA’s response to comment 2.C.24.

EPA disagrees with commenter’s assertion that “EPA decided not to send a 3(b) letter, suggesting that, in fact EPA could not demonstrate that the project ‘will’ have substantial and unacceptable impacts” and that “[EPA] did not have sufficient information to demonstrate that the project would have unacceptable adverse effects such that a 3(b) letter was warranted.” EPA explained its reasons for discontinuing the formal CWA Section 404(q) process in its May 28, 2020 letter. EPA addresses the relationship between CWA Section 404(c) and CWA Section 404(q) in Section 2 of the Final Determination. EPA notes that its role under CWA Section 404(q) begins with the public notice of the 404 application and that EPA’s decisions under the CWA Section 404(q) MOA in no way constrain its authority to act under CWA Section 404(c) “whenever” it makes the required finding under the statute. See Section 2 of the FD and EPA’s responses to comments 2.C.7 and 2.C.24. The now vacated withdrawal notice cited by commenter explicitly acknowledged that “EPA retains the discretion and the authority to decide to use its section 404(c) authority ‘whenever’ it determines, in its discretion, that the statutory standard for exercising this authority has been met . . . by initiating a new section 404(c) process that is informed by the entirety of the facts and the Corps’ decision-making known to the Agency at that time. *Id.* at 45755.

EPA disagrees that it has “suggest[ed] that it was required to issue the Revised Proposed Determination because recent litigation forbids it from withdrawing the 2014 Proposed Determination.” EPA disagrees that the Court’s decision “was based on a faulty premise, never corrected by EPA” that there was only one previous withdrawal of a proposed determination. The Court’s decision was based on the language in EPA’s regulations in 40 CFR 231.5. *Trout Unlimited v. Pirzadeh*, 1 F.4th 738, 757 (9th Cir. 2021). EPA notes that it is bound by the court’s decision in *Trout Unlimited* regardless of whether the commenter (or EPA) agrees with the decision. To the extent the commenter asserts that EPA could have legally withdrawn the 2022 Proposed Determination, EPA did not withdraw the 2022 Proposed Determination because EPA reviewed the available information, including the relevant portions of the USACE permitting record in deciding its next steps after its PD withdrawal notice was vacated, see 86 Fed. Reg. 66548, 66550 (Nov. 23, 2021), and decided to issue a revised PD. Section 4 of the FD describes the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas. Appendix B, Attachment 1, of the FD addresses FEIS conclusions that appear to be inconsistent with the FD.

With respect to the commenter’s position on the Major Questions Doctrine, see EPA’s response to comment 2.C.25.

2.C.43 The Pebble Limited Partnership (PLP) (Doc. #1912, pp. 70-71)

XII. The Revised Proposed Determination Violates Federal Statutes Protecting the Rights of the State of Alaska and Alaska Natives

The Revised Proposed Determination violates the statutory framework that recognizes Alaska's unique history, protects its land, and safeguards its resource development rights. In 1959, Congress passed the Alaska Statehood Act, which sought to provide the newly-formed state of Alaska with resources to allow it to become self-supporting. As part of that Act, Congress authorized Alaska to select certain lands from the federal government. The express purpose of these land grants was to provide Alaska with title to valuable mineral deposits. *Udall v. Kalerak*, 396 F.2d 746, 749 (9th Cir. 1968) ("The purpose of the land grants under the [Alaska Statehood] Act is to serve Alaska's overall economic and social well-being[, and] some of the lands so selected will probably be used to protect mineral deposits."). The Act also provided that any mineral deposits granted to Alaska "shall be subject to lease by the State as the State legislature may direct." Alaska Statehood Act § 6(i), Pub. L. No. 85-508, 72 Stat. 339 (1958).

In 1976, Alaska, the federal government, and Cook Inlet Region, Inc. executed the Cook Inlet Exchange, by which Alaska obtained title to the area that includes the Pebble Deposit, and which allowed the federal government to establish Lake Clark National Park and Preserve. The Exchange allowed Alaska to select lands that were previously withdrawn and designated for conservation. See Cook Inlet Exchange Legislation, Pub. L. 94-204 § 12(b), 89 Stat. 1145 (1976). Under the Cook Inlet Exchange, lands selected by the State had the same status as if originally selected under the Alaska Statehood Act, including the provision permitting the State to lease such lands. See *id.* ("All lands granted to the State of Alaska pursuant to this subsection shall be regarded for all purposes as if conveyed to the State under and pursuant to section 6 of the Alaska Statehood Act."). The Exchange thus gave Alaska the right to select and manage lands, including by designating them for mineral development, and leasing such lands. See *id.* § 112(d)(1). Alaska did just that. Since 1984, Alaska has designated the Pebble Deposit and surrounding lands specifically for mineral development. [See Alaska Dep't of Natural Resources, Bristol Bay Area Plan for State Lands at 3-106 (Sept. 2013) (designating "Pebble" land unit as "Mineral" for its "significant resources").] The Revised Proposed Determination effectively removes Alaska's ability to develop land that the federal government recognized as critical to the State's mineral future, violating the balance struck in the Alaska Statehood Act and Cook Inlet Exchange.

Moreover, the Revised Proposed Determination violates the Alaska National Interest Lands Conservation Act ("ANILCA"), enacted in 1980. ANILCA requires federal agencies to consult and cooperate with State agencies to balance conservation measures with Alaska's natural resource development interests. See 16 U.S.C. § 3181 et seq. The Revised Proposed Determination attempts no such balance. Further, ANILCA specifically requires Congressional approval for any further federal withdrawal of public land in Alaska. See 16 U.S.C. § 3213(a).

Finally, the Revised Proposed Determination violates the Federal Land Policy and Management Act ("FLPMA"). 43 U.S.C. § 17.0.1 et seq. Under the FLPMA, "Congress retains the sole authority to withdraw land parcels larger than 5,000 acres from mining permanently." *Chilkat Indian Vill. of Klukwan v. Bureau*

of Land Mgmt., 399 F. Supp. 3d 888, 899 n.31 (D. Alaska 2019) (emphasis added). EPA's action withdraws nearly 200,000 acres from potential development, far more than 5,000 acres that trigger Congressional approval under the FLPMA. EPA cannot usurp Congressional authority in this regard.

Using Section 404(c) to restrict development of the Pebble deposit also runs afoul of the Alaska Native Claims Settlement Act ("ANCSA"). 43 U.S.C. § 1601 et seq. Under ANCSA, Alaska Native Corporations are required to develop and manage their lands to the benefit of their shareholders. As described more fully in Section IX above, the Pebble Project would provide a much needed boost to struggling local communities, including employment and tax payments that would offer resources for schools, health facilities and other community infrastructure. [FEIS at ES 54.] The significant revenue benefits to the local communities are undisputed: "The Project would generate \$27 million annually in severances taxes for the LPB during operations, and annual property tax revenue to the Kenai Peninsula Borough based on assessed value of project-related real property." [Id. at ES 47-ES 48.] Any 404(c) action limiting the ability to develop the Pebble Deposit denies Native Corporations the ability to fulfill this requirement and erases one of the only hopes for development and economic growth in their communities.

EPA cannot use Section 404(c) authority to undermine Congress's explicit intent to protect Alaskans' interests. All conveyances to the State under the Alaska Statehood Act and Cook Inlet Exchange were subject to the condition that the State reserved its rights to all the underlying mineral resources within those lands. [Alaska Statehood Act § 6(i); Pub. L. No. 94-204 § 12(d)(1).] And the grant to the State of all mineral lands through these bargains are rendered meaningless if the State cannot develop them. As the FEIS recognized:

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. This is demonstrated by scoping comments, which indicated a desire to bring economic opportunity and jobs to the region, as well as by policy language in the Alaska State Constitution and Alaska Statutes encouraging development of the state's mineral resources consistent with the public interest. [FEIS at 1-4.]

Taken together, these statutes clearly protect Alaska's right to develop state-owned lands. EPA's Revised Proposed Determination would erase the State's legally protected interests in the development of lands intentionally acquired and designated for mineral development. EPA lacks such authority.

EPA Response

With respect to the commenter's assertion that EPA's action violates the Alaska Statehood Act and/or the Cook Inlet Land Exchange Act, EPA disagrees. See EPA's response to comment 2.C.17.

With respect to the commenter's assertion that EPA's action violates any federal-state cooperation provisions in ANILCA Title XII, 16 USC 3181 et seq., EPA disagrees. The cited provisions do not require consultation on an individual project basis in the manner suggested by the commenter. Rather, the cited provisions require the members of the Alaska Land Use Council to meet periodically "to coordinate those programs and

functions of their respective agencies which could affect the administration of lands and resources in Alaska.” 16 USC 3181.

With respect to the commenter’s assertion that EPA’s action violates Section 1326(a) of ANILCA, EPA disagrees. See EPA’s response to comment 2.C.26.

With respect to the commenter’s assertion that EPA’s action violates FLPMA, EPA disagrees. FLPMA defines the term “withdrawal” to mean “withholding an area of Federal land from settlement, sale, location, or entry, under some or all of the general land laws, for the purpose of limiting activities under those laws in order to maintain other public values in the area or reserving the area for a particular public purpose or program; or transferring jurisdiction over an area of Federal land, other than “property” governed by the Federal Property and Administrative Services Act, as amended (40 USC 472) from one department, bureau or agency to another department, bureau or agency. 43 USC 1702(j). EPA’s action clearly does not constitute a “withdrawal” as defined under FLPMA because EPA’s action, appropriately exercised pursuant to CWA Section 404(c), only limits USACE’s ability to specify certain waters of the United States situated on state lands as disposal sites for certain discharges of dredged or fill material associated with mining the Pebble deposit. See Section 5 of the FD and EPA’s response to comment 5.B.32. EPA’s action does not withhold federal land from “settlement, sale, location, or entry, under some or all of the general land laws” or transfer jurisdiction over an area of federal land from one department, bureau or agency to another department, bureau or agency. 43 USC 1702(j).

With respect to the commenter’s assertion that EPA’s action violates ANCSA, EPA disagrees. As the commenter point out, ANCSA requires Alaska Native Corporations to develop and manage their lands to the benefit of their shareholders. No Alaska Native Corporation owns lands with the area to which EPA’s action applies. See EPA’s response to comment 2.C.26.

EPA discusses the costs and benefits its action, including information related to job creation and other economic activity in *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b). See also EPA’s response to comments in Topic 6.F.

2.C.44 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 69)

X. EPA’s Revised Proposed Determination Would Establish a Dangerous Precedent that Will Substantially Deter Investment in Other Major Projects

Finalizing this Revised Proposed Determination would establish a dangerous precedent under Section 404 that will substantially deter investment in other major projects requiring Section 404 permits, potentially resulting in enormous impacts to the U.S. economy.

First, the size of the disposal site is unprecedented and an order of magnitude greater than any previously designated. Second, the overbroad and unworkable restrictions proposed would effectively preclude any impacts to waterbodies within the 309 square mile area. EPA's proposed action to preemptively set aside a vast tract of land from any development under Section 404(c) would undermine the entire Section 404 permitting process. EPA is effectively proposing to use the Section 404(c) process for zoning – imposing such broad restrictions over a wide area that effectively no development will be possible.

Such action is beyond EPA's authority. It also creates significant regulatory uncertainty for all major development projects that require Section 404 permits. Development companies and investors understand the risks of legitimate environmental regulation and permitting. However, investors expect the permitting process to be followed, so that a project has a full opportunity to present its plans, defend its science, and modify the project to meet any legitimate regulatory concerns. The financial risk of backing a project that requires a Section 404 permit is significantly increased if a possibility exists that entire watersheds could be vetoed by EPA. The potential harm resulting from decreased domestic and foreign investment is significant: USACE processes approximately 60,000 permits a year, and, according to some estimates, roughly \$220 billion of investment per year depends on these permits. EPA should respect the permitting process that Congress established, as to usurp the USACE's (and State's) role here will only serve to undermine the legitimacy and predictability of the Section 404 permitting process.

EPA Response

EPA disagrees that its action is “precedent setting.” EPA also disagrees that its action will deter investment, create regulatory uncertainty, undermine the CWA Section 404 permitting process or usurp the role of the State or any other agency. EPA exercises its CWA Section 404(c) authority on a case-by-case basis based on the specific facts of each situation consistent with applicable statutory and regulatory requirements. EPA has used its CWA Section 404(c) authority judiciously, having completed only 13 Section 404(c) actions in the 50-year history of the CWA. EPA has a long record of historic and current involvement for multiple industries in Alaska and across the country involving potential discharges of dredged or fill materials that have not resulted in Section 404(c) determinations. Therefore, EPA disagrees that this action impacts all industries or other potential mining projects in Alaska or elsewhere. See EPA's responses to comment's 2.C.13 and 2.C.24.

With respect to the commenter's contentions related to the restriction and the size of the defined area for restriction, as well as its assertion that EPA is effectively proposing to use the Section 404(c) process for zoning, EPA disagrees. See EPA's responses to comments 5.B.32, 2.C.8, 2.C. 21, and 2.C.23.

2.C.45 The Pebble Limited Partnership (PLP) (Doc. #1912, pp. 69-70)

XI. If Finalized, the Revised Proposed Determination Would Constitute a Taking

The Revised Proposed Determination effectively nullifies PLP's legally protected property interests in its leased mineral claims at the Pebble Deposit. Accordingly, it would constitute a taking under the Fifth Amendment, and EPA, if it continues to finalize the veto, must pay PLP just compensation.

If finalized, the Revised Proposed Determination would have a devastating and complete economic impact, destroying all economic use of PLP's mineral rights. Such mineral rights are protected from uncompensated government taking. *United Affiliates Corporation v. United States*, 143 Fed. Cl. 257, 263 (Fed. Cl. 2019).

PLP has invested hundreds of millions of dollars in preparing to develop the Pebble Deposit. The proposed restrictions would completely prevent PLP from developing the Pebble Deposit at all, as development of the current mine site footprint is necessary for any future development at the deposit. EPA is thus proposing to take PLP's valuable property and must either compensate PLP or withdraw the Revised Proposed Determination.

EPA Response

PLP commented that the 2022 Proposed Determination, if finalized, would constitute a taking of its leased mineral rights under the Fifth Amendment to the U.S. Constitution, and as such the Government would have to compensate it for the value of the allegedly taken mineral rights. The State of Alaska, which retains ownership of the mineral rights and owns the surface lands and navigable waters within the Defined Areas for Prohibition and Restriction, also commented that the 2022 Proposed Determination would constitute a taking of its property and similarly require compensation.

EPA disagrees with PLP's comment. First, the United States does not propose to physically occupy the surface or subsurface areas at issue and does not propose to occupy or confiscate the water resources at issue. Second, the FD does not regulate mineral rights or the minerals themselves, nor does it prohibit extraction of the minerals. Rather, consistent with EPA's authority under CWA Section 404(c), the FD prohibits and restricts the use of defined areas as a disposal site for discharges of dredged or fill material that will result in unacceptable adverse effects on anadromous fishery areas. The property interest at issue in this (and indeed in any) CWA Section 404(c) action therefore is the right to dispose of such materials into waters of the United States. PLP has no such property right. As the Federal Circuit has recognized in several cases, a "derivative injury" to a plaintiff's property caused by government regulation of property not owned by the plaintiff is not a taking. *See Hearts Bluff Games Ranch v. United States*, 669 F.3d 1326, 1330 (Fed. Cir. 2012); *Air Pegasus of D.C. v. United States*, 424 F.3d 1206, 1216 (Fed. Cir. 2005); *Mitchell Arms, Inc. v. United States*, 7 F.3d 212, 217 (Fed. Cir. 1993).

EPA also disagrees with Alaska's comment. While Alaska owns the surface lands and mineral rights, as well as the navigable waters within the areas that are subject to EPA's FD, the FD does not constitute a taking of property for which compensation is owed. First,

the FD does not preclude all mineral development in the area covered by the action. Second, even assuming, solely for purposes of responding to Alaska's comment, that the FD did "effectively withdraw 309 square miles of State-owned land from mineral development," Alaska's property retains any number of economically beneficial uses other than mineral development. And although Alaska may currently view mineral development as the property's highest and best use, even a complete prohibition on mineral development, without more, would not constitute a compensable taking. *See Fla. Rock Indus., Inc. v. United States*, 791 F.2d 893, 901 (Fed. Cir. 1986) ("The fifth amendment ... does not find a taking in a mere denial of the 'highest and best use,' i.e., most profitable use, that would be available in the absence of regulation.").

PLP's mineral interests in the Pebble deposit have been highly speculative since the mineral rights were first purchased. Northern Dynasties' Annual Information Forms filed with the SEC in 2005 and 2006, shortly after completing its purchase of the mineral rights, reflect the speculative nature of its investment: "Northern Dynasty may not be able to obtain all necessary licenses and permits that may be required to carry out exploration at our projects." Northern Dynasty Minerals Ltd., Annual Report (Form 40-F) (March 31, 2006), Exhibit 99.8; Annual Report (Form 40-F) (April 2, 2007), Exhibit 99.7. The speculative value of PLP's rights is also reflected in its inability to secure long-term funding partners prior to EPA initiating its CWA Section 404(c) action in 2014. *See* Northern Dynasty Minerals Ltd., Schedule 13G (February 25, 2011) (noting Mitsubishi Corporation's sale of its entire 9.1 percent interest in Northern Dynasty); Press Release, Anglo American plc, Anglo American statement re: Pebble project (Sept. 16, 2013), <https://www.angloamerican.com/media/press-releases/archive/2013/2013-09-16> (stating that Anglo American is withdrawing from the Pebble project and incurring a \$300 million impairment charge for doing so). PLP's publicly disclosed concerns regarding the viability of developing the mineral rights long preceded EPA's 404(c) action and were well-founded given the regulatory requirements in place at the time the rights were acquired, including Alaska's various mining restrictions covering the Bristol Bay watershed. Furthermore, in 2014, Alaska enacted a law requiring the approval of the State legislature for any mining in the Bristol Bay Fisheries Reserve. Given the significant, additional regulatory requirements applicable to PLP's mining efforts, the alleged potential economic losses of both PLP and Alaska are likely not attributable to the FD. *See Lemon Bay Cove, LLC v. United States*, 160 Fed. Cl. 593 (Fed. Cl. 2022) ("Plaintiff has not established financial loss attributable to the Corps' denial of its permit application, given its failure to prove that it would have obtained the necessary ERP from the SWFWMD and site plan approval from Charlotte County.").

2.C.46 Cook Inlet Tug & Barge, LLC (Doc. #1987, p. 1)

EPA's use of this proposed determination (preemptive veto) would set a precedent that will have rippling effects across Alaska, not just related to resource development projects. The EPA should allow the established and ongoing process to play out before issuing this preemptive veto.

* This is preemptive and precedent setting. There is an established process for evaluating resource development and other projects in the US and it should be followed.

(...)

* The EPA's proposed action against the Pebble Project is not just a veto of the current Pebble permit application, it is also a preemptive veto of any future proposals in the area fully blocking any development actions across 309 square miles of state of Alaska land.

EPA Response

EPA explains its CWA Section 404(c) authority, as well as its rationale for acting now, in Section 2 of the FD. EPA reviewed the available information, including the relevant portions of the USACE permitting record, and this information supports the findings in the FD. EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. EPA does not intend for this action to have a rippling effect across Alaska. EPA's determination of an "unacceptable adverse effect" in this and in every CWA Section 404(c) action necessarily involves a case-by-case determination, that accounts for the unique characteristics of the aquatic resource that would be affected by discharges of dredged or fill material.

EPA disagrees that its action would fully block any development actions across 309 square miles of land. Section 5 of the PD identified the discharges that would be subject to the prohibition and restriction. Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD. The FD applies only to discharges of dredged or fill material associated with developing the Pebble deposit, and applies to those discharges only if they result in certain levels of aquatic resource loss or streamflow changes in the SFK, NFK, and UTC watersheds. See EPA's response to comment 5.B.32.

2.C.47 Mass Mailing Campaign (Doc. #2543, p. 1)

1. Preemptive vetoes are bad policy and violate due process.

2. The EPA's actions set a damaging precedent wherein projects which have not enjoyed the scientific and other study required by law can be shut down. This is an affront to fair practice.
3. These actions impact all U.S. industries, not just a single mine.
4. Preempting due process is a dangerous and alarming new tool which future partisan governments could employ, undermining a transparent and reliable regulatory and permit approval process.

EPA Response

EPA disagrees that its action undermines the current regulatory system or the permit approval process. To the extent that the commenter believes that EPA's action is "bad policy" or violates due process, EPA disagrees. Section 404(c) of the CWA provides EPA with independent authority, separate and apart from the USACE permitting process, to review and evaluate potential discharges of dredged or fill material into waters of the United States. Moreover, the Agency has authority to act under CWA Section 404(c) "whenever" it makes the required determinations under the statute, including before a permit application has been submitted, at any point during the permitting process, or after a permit has been issued. 33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (D.C. Cir. 2013). See Section 2 of the FD for a detailed description of EPA's CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency's rationale for acting now. EPA has engaged in an open and transparent CWA Section 404(c) review process, which, consistent with EPA's CWA Section 404(c) regulations, included providing multiple opportunities for the applicant, the State of Alaska, USACE, and other owners of record to consult with EPA, as well as a public review and comment period and public hearings on the PD.

To the extent that the commenter expressed concern about how EPA's action might affect other industries, EPA has used its CWA Section 404(c) authority judiciously, having completed only 13 prior CWA Section 404(c) actions in the 50-year history of the CWA. EPA exercises its CWA Section 404(c) authority on a case-by-case basis based on the specific facts of each situation consistent with applicable statutory and regulatory requirements. EPA's determination of an "unacceptable adverse effect" in this and in every CWA Section 404(c) action necessarily involves a case-by-case determination that accounts for the unique characteristics of the aquatic resource that would be affected by discharges of dredged or fill material. EPA has a long record of historic and current involvement for multiple industries in Alaska and across the country involving potential discharges of dredged or fill materials that have not resulted in Section 404(c) determinations. Therefore, EPA disagrees that this action impacts all industries or other potential mining projects in Alaska or elsewhere.

2.C.48 Mass Mailing Campaign (Doc. #2544, p. 1)

Alaska's bid for statehood was predicated on its ability to responsibly develop its land and natural resources as revenue streams for the state's economy - all natural resources.

I am writing today to encourage the Environmental Protection Agency to adhere to due process and acknowledge the findings of the U.S. Army Corps of Engineers Final Environmental Impact Statement, which states that the Pebble Deposit can be responsibly developed with no measurable harm to the Bristol Bay fisheries.

(...)

The land around Pebble was specifically selected by the state of Alaska for its mineral potential as part of an historic land exchange between the state of Alaska, the federal government, and Cook Inlet Region. A preemptive veto violates this agreement.

(...)

A preemptive veto sets a dangerous precedent for an unstable regulatory system. The EPA must adhere to the fair and established process for evaluating resource projects, and respect the state's rights to manage its land.

EPA Response

With respect to the commenter's belief that Alaska's bid for statehood was predicated on its ability to responsibly develop its land and natural resources, that the lands surrounding the Pebble deposit were specifically selected by the state of Alaska for its mineral potential as part of a land exchange between the State of Alaska, the federal government, and Cook Inlet Region, and that EPA's action violates that agreement, nothing in the Alaska Statehood Act nor the Cook Inlet Exchange Act, precludes the application of duly enacted federal legislation to lands and mineral deposits granted to the State, nor do those laws serve as a barrier to EPA's use of Section 404(c) of the Clean Water Act. Federal law, including the Clean Water Act, applies to lands and mineral deposits granted to the State just as they do elsewhere. See EPA response to comment 2.C.17.

With respect to due process, Section 404(c) of the CWA provides EPA with independent authority, separate and apart from the USACE permitting process, to review and evaluate potential discharges of dredged or fill material into waters of the United States. The Agency has authority to act under CWA Section 404(c) "whenever" it makes the required determinations under the statute, including before a permit application has been submitted, at any point during the permitting process, or after a permit has been issued. 33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (D.C. Cir. 2013). See Section 2 of the FD for a detailed description of EPA's CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404

permitting process, as well as the Agency’s rationale for acting now. EPA has engaged in an open and transparent CWA Section 404(c) review process, which, consistent with EPA’s CWA Section 404(c) regulations, included providing multiple opportunities for the applicant, the State of Alaska, USACE, and other owners of record to consult with EPA, as well as a public review and comment period and public hearings on the PD.

With respect to the findings of the USACE, EPA first notes that the USACE denied the applicant’s permit. Appendix B (Attachment 1) of the FD addresses FEIS conclusions that appear to be inconsistent with the FD.

EPA also disagrees with the commenter that EPA’s action sets a precedent for an unstable regulatory system. As explained above and in Section 2 of the FD, EPA is acting with its Congressionally granted authority, which is an important part of the CWA Section 404 regulatory structure.

Finally, while EPA agrees with the commenter’s position that the State of Alaska has a role in managing the State’s resources, state laws aimed at managing state resources do not supersede, amend, modify, or repeal the CWA or impinge on EPA’s CWA Section 404(c) authority.

2.C.49 Mass Mailing Campaign (Doc. #2545, p. 1)

Alaska’s status as the 49th state was affirmed because it had the means to develop an economic revenue stream through the responsible development of its land and natural resources - all natural resources. In particular, mineral-rich state land was specifically identified as a key economic driver in its bid for statehood.

Due process and established review norms are critical for transparent, fair, and legitimate oversight involving development projects.

(...)

The land around Pebble was specifically selected by the state of Alaska for its mineral potential as part of an historic land exchange between the state of Alaska, the federal government, and Cook Inlet Region.

(...)

A preemptive veto sets a dangerous precedent for an unstable regulatory system. The EPA must adhere to the fair and established process for evaluating resource projects, and respect the state’s rights to manage its land.

EPA Response

Please see EPA’s response to comment 2.C.47

2.C.50 Mass Mailing Campaign (Doc. #2551, p. 1)

Alaska knows best how to responsibly manage its natural resources. The EPA's actions are outside the normal permitting process and the agency must return to its core regulatory mission that is fair, objective, and unpolluted by politics.

EPA Response

While EPA agrees with the commenter's position that the State of Alaska has a role in managing the State's resources, state laws aimed at managing state resources do not supersede, amend, modify, or repeal the CWA or impinge on EPA's CWA Section 404(c) authority. Section 404(c) of the CWA provides EPA with independent authority, separate and apart from the USACE permitting process, to review and evaluate potential discharges of dredged or fill material into waters of the United States and the Agency has authority to act under CWA Section 404(c) "whenever" it makes the required determinations under the statute, including before a permit application has been submitted, at any point during the permitting process, or after a permit has been issued. 33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (DC Cir. 2013). See Section 2 of the FD for a detailed description of EPA's CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency's rationale for acting now. EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. EPA's determination of an "unacceptable adverse effect" in this and in every CWA Section 404(c) action necessarily involves a case-by-case determination that accounts for the unique characteristics of the aquatic resource that would be affected by discharges of dredged or fill material.

2.C.51 Mass Mailing Campaign (Doc. #2553, p. 1)

The EPA is the only federal agency that has the legal authority and scientific expertise to take direct and decisive action to prohibit the Pebble Mine from filling Bristol Bay's ecologically sensitive and economically valuable headwaters with toxic mine waste.

EPA Response

EPA agrees that the Agency has authority to act under CWA Section 404(c) "whenever" it makes the required determinations under the statute. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. Also see EPA's response to comment 7.0.1.

2.C.52 Mass Mailing Campaign (Doc. #2554, p. 1)

Alaska must have a voice managing the state's resources.

The EPA's actions are inexcusable. The actions are outside the normal permitting process and the agency has allowed politics to interfere with its core regulatory mission. The Proposed Determination should be rejected, and the agency should return to its proper regulatory role.

EPA Response

See EPA's response to comment 2.C.49. With respect to the commenter's position that EPA should withdraw the PD, EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. Also see EPA's response to comment 7.0.1. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. Also see EPA's response to comment 7.0.1.

2.C.53 Bristol Bay Native Corporation (Doc. #2667-49, p. 112)

As you know, EPA has used its 404C authority, gotten to a final action only 13 times in the history of the Clean Water Act. It is an authority used sparingly, and only for the most egregious and destructive proposals. Pebble is such a proposal. This project is what the 404C authority was tailor made for.

This is a resource, the salmon, that has to be, and is worth protecting. This proposal, use of your - the 404C authority here, fits all of the statutory criteria in the Clean Water Act, as well as many of the policy priorities of this Administration. This is about food security. This is about environmental justice. This is what the 404C authority exists for. This is not about setting a precedent. It is about stopping a really bad proposal.

EPA Response

EPA agrees that it has used its CWA Section 404(c) authority judiciously, having completed only 13 prior CWA Section 404(c) actions in the 50-year history of the CWA. EPA exercises its CWA Section 404(c) authority on a case-by-case basis based on the specific facts of each situation consistent with applicable statutory and regulatory requirements. EPA's determination of an "unacceptable adverse effect" in this and in every CWA Section 404(c) action necessarily involves a case-by-case determination that accounts for the unique characteristics of the aquatic resource that would be affected by discharges of dredged or fill material. EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on

anadromous fishery areas. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. Also see EPA's response to comment 7.0.1. EPA discusses environmental justice in Section 6 of the FD.

2.C.54 The Pebble Limited Partnership (Doc. #2664-1, Public Hearing Transcript, p. 3)

I'm the CEO of the Pebble Project. We request that the EPA withdraw the proposed determination for a number of reasons. First of all, this process has been tainted from the beginning. EPA staff conspired with tribal leaders to get the petition they wanted filed. They basically told us that the Bristol Bay watershed assessment was not about Pebble. They used consultants that were publicly opposed to Pebble. They violated the Federal Advisory Committee Act, and we now have a very rushed review process with a very limited time period.

EPA Response

With respect to the commenter's request that EPA withdraw the PD, EPA has engaged in an open and transparent CWA Section 404(c) review process and, after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. *See also* EPA's response to comment 7.0.1. With respect to the commenter's allegation that EPA's CWA Section 404(c) review process is tainted; allegations about the petition filed by tribal leaders; allegations about the use of "certain consultants" to develop the 2014 PD; and alleged violations of the Federal Advisory Committee Act during the development of the 2014 PD, EPA disagrees. Although EPA relies on an extensive and well supported scientific and technical record that spans decades, EPA engaged in a new, open, and transparent CWA 404(c) review process. EPA's 2022 PD, on which the Agency sought public comment, was issued after a new 15-day letter, was a new document based on an extensive and carefully considered record, and was consistent with the CWA Section 404(c) regulatory process set forth in EPA's CWA Section 404(c) regulations. EPA disagrees that the 2022 process is "rushed" or "with a very limited time period." EPA issued the 2022 PD 120 days after it sent the 15-day notice and, as detailed in Section 2 of the FD, EPA provided a public comment period of 104 days, well exceeding the minimum requirement of 30 days, *see* 40 CFR 231.4(a)).

2.C.55 Alaska Department of Environmental Conservation (Doc. #2664-12, p. 11)

I'm the deputy commissioner of the Alaska Department of Environmental Conservation, and here today to provide testimony on behalf of the state of Alaska. Across multiple administrations, the state has consistently expressed concern about EPA's proposals to prematurely veto development of state lands

and usurp the state's constitutional responsibility to ensure natural resources are managed for the benefit of all Alaskans. We're proud of the work that state agencies do to protect the environment and human health, as well as the economic and social wellbeing of our communities. I'll note that an appeal remains pending with the Corps of Engineers, and encourage EPA to provide space to allow that process to play out. Our experts are in the midst of reviewing and evaluating EPA's proposed determination, and the state will submit more extensive written comments. Tonight, I'd like to reiterate our June 1st request for an additional 120 days for stakeholders to comment.

(...)

Alaskans all know that this is a busy time of year. Folks are out engaging in subsistence and filling their freezers for the year. This is especially true in the Alaska Native communities closest to the project area. For all the emphasis EPA has placed on environmental justice, we're hopeful the agency will consider that many stakeholders have more immediate and pressing needs, and may not be able to accommodate EPA's schedule. We appreciate that you've taken the time to go out to some communities for a couple of days, but more time and flexibility will allow for a more robust engagement. That additional time may also help mitigate some of the state's frustration over recent dynamics with our federal counterparts, and what appear to be some significant shortcomings in process. In particular, the Corps of Engineer's unprecedented behavior in cutting off communications with DEC, DNR, and other state staff during the pendency of the 404 application. This was particularly alarming as DEC was working to complete our related responsibilities to certify whether the 404 permit would comply with state water quality standards. We ask that EPA allow for additional time and process so that we can have our concerns.

EPA Response

With respect to the commenter's concern that EPA proposes to "prematurely veto development of state lands," the Agency responds that it has authority to act under CWA Section 404(c) "whenever" it makes the required determinations under the statute. Importantly, and with respect to the commenter's position that EPA should allow the USACE appeal process to play out, Section 404(c) of the CWA provides EPA with independent authority, separate and apart from the USACE permitting process, to review and evaluate potential discharges of dredged or fill material into waters of the United States. EPA explains its CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as EPA's rationale for acting now, in Section 2 of the FD. EPA has engaged in an open and transparent CWA Section 404(c) review process and, after consideration of an extensive scientific and technical record as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. *See also* EPA's response to comment 7.0.1.

With respect to the commenter’s belief that EPA’s actions “usurp the state’s constitutional responsibility to ensure natural resources are managed for the benefit of all Alaskans,” EPA disagrees. While EPA agrees that the State of Alaska has a role in managing the State’s resources and respects the State’s ability to do so through its own authorities, state laws aimed at managing state resources do not supersede, amend, modify, or repeal the CWA or impinge on EPA’s CWA Section 404(c) authority.

With respect to the commenter’s request and rationale for its request that EPA extend the public comment period on the PD, EPA responds that it extended the public comment period. See EPA’s response to comment 2.C.1.

With respect to the commenter’s expressed frustration related to the action of another federal agency, the actions of that other federal agency are not relevant to EPA’s action. EPA coordinated with the State of Alaska during the CWA Section 404(c) review process for the Pebble deposit area. Specifically, consistent with EPA’s CWA Section 404(c) regulations, the Agency offered the State of Alaska multiple opportunities to consult with EPA during its CWA Section 404(c) review process.

2.C.56 Newhalen Tribal Council (Doc. #2666-3, p. 13-14)

404C, the Clean Water Act, if it - if it goes through, is there any way that we could - if that project doesn’t go through - is there any way we could stop? That’s all I - I, I want to see that’s - the 404C stop - if the project doesn’t go through. What’s the use of having 404C if we - if we don’t have a project here? I’d like to see that done, with the help of - I see a lot of BBNC people here, or New Stuyahok people here.

We have a whole bunch of water out here. And our main, main, main source of transportation is by water, may it be in winter, or summertime. So if, if there is a way to - if that - this project doesn’t go through, and if this stops it, can we stop 404C?

EPA Response

CWA Section 404(c) authorizes EPA to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever it determines that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. See 33 USC 1344(c).

Consistent with Congressional intent that EPA have authority to prevent unacceptable adverse effects on specific aquatic resources, Congress provided broad authority to EPA to decide whether or when to use its Section 404(c) authority. Section 404(c) authorizes EPA to act “whenever” it makes the required determination under the statute. As a result, EPA may use its CWA Section 404(c) authority “at any time,” including before a permit

application has been submitted, at any point during the permitting process, or after a permit has been issued. 33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (DC Cir. 2013). Nothing in the CWA or EPA's CWA Section 404(c) regulations precludes EPA from exercising its authority where USACE has denied a permit. See Section 2 of the FD for a detailed description of EPA's CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency's rationale for acting now.

EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. Also see EPA's response to comment 7.0.1.

EPA's FD prohibits and restricts USACE's ability to specify certain waters of the United States as disposal sites for discharges of dredged or fill material associated with developing the Pebble deposit. Transportation by water is not regulated by the FD.

2.C.57 Les Gara (Doc. #0132, p. 1)

I would also note that the term "veto" – normally used when the EPA is asked to overrule an Army Corps of Engineers permit - does not seem to apply here, as Corps did not issue a permit under the Trump Administration.

EPA Response

While the term "veto" sometimes has been used as a kind of short-hand, it does not capture the scope of actions that EPA is authorized to take under CWA Section 404(c).

CWA Section 404(c) authorizes EPA to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever it determines that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. See 33 USC 1344(c). Section 404(c) of the CWA provides EPA with independent authority, separate and apart from the USACE permitting process, to review and evaluate potential discharges of dredged or fill material into waters of the United States. The Agency has authority to act under CWA Section 404(c) "whenever" it makes the required determinations under the statute, including before a permit application has been submitted, at any point during the permitting process, or after a permit has been issued. 33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (DC Cir. 2013). See Section 2 of the FD for a detailed description of EPA's CWA Section 404(c)

authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency's rationale for acting now.

2.C.58 Mass Mailing Campaign (Doc. #2551, p. 1)

A preemptive veto against the Pebble Project sets a dangerous precedent. For true, transparent, and fair due process, the EPA must follow its established evaluation norms for all projects.

(...)

Alaska knows best how to responsibly manage its natural resources. The EPA's actions are outside the normal permitting process and the agency must return to its core regulatory mission that is fair, objective, and unpolluted by politics.

EPA Response

Please see EPA's responses to comments 2.C.47 and 2.C.50.

2.C.59 Alaska Peninsula Corporation (APC) (Doc. #2668, p. 2-3, 5)

1. The Proposed Section 404(c) Action Directly Constitutes a Denial of APC's Rights of Due Process.

APC objects to the proposed Section 404(c) action because the decision impacts APC's ability to utilize its lands in a manner that would further APC's economic development. As explained during the consultation in April, APC has entered into significant contracts with Pebble, including land use and contracting rights. The EPA's proposed action renders the future utilization of those rights meaningless, although APC and Pebble have, since at least 2008, mutually benefitted from such contractual relationships.

Due process requires consideration of three distinct factors: (1) The private interests that will be affected by the official action; (2) the risk of an erroneous deprivation of such interests through the procedures used and the probable value if any of additional or substitute procedural safeguards; and (3) the government's interests including the function involved in the physical and administrative burden that the additional or substitute procedural requirement would entail, See *Matthews v. Eldridge* 424 US 319, 334-335 (1976). Here, the EPA's interpretation of its authority denies APC, PLP and others similarly situated due process. The EPA has explicitly rejected adjudicatory hearings and NEPA considerations when it proposes, by an ultra vires regulation, the Section 404(c) proceedings for this action.

The United States has a compelling interest, as a matter of statutory authority, to assist APC to implement the Congressional intent for APC to utilize its lands for economic development. As was explained at the consultation, when APC and Pebble began working cooperatively, around 2008, a previous diaspora caused by high energy prices in the early 2000s was reversed. Back before 2008 and as a result of the Gulf wars, fuel prices impacted all of our Villages. Particularly hard hit were Kokhanok and Newhalen. As a result of the soaring energy prices, shareholders living in those Villages, in order to

keep their families warm, sold their limited entry permits, thereby reducing their economic reliance on the Bristol Bay fishery. When the money ran out, families left. By 2008, there was a grave concern that both the Newhalen and Kokhanok schools would be closed because of a lack of students.

Beginning in 2008, APC's fortunes changed when APC created an environmental services subsidiary, APC Services, LLC. We hired scientists, and obtained hydrology contracts, initially, later expanding into other contracts, with Pebble. As a result of Pebble's activities on our lands, we also entered into land use agreements with Pebble, and we were able to hire our shareholders. As jobs developed, our shareholders returned to Newhalen and Kokhanok.

Then, of course, in 2014, when the EPA initially asserted a 404(c) determination, the economy dried up. In 2017, Pebble returned. The short hiatus did result in some loss of population, but again, people returned, jobs were available, and APC's economic situation vastly improved. Because of our contracts with Pebble, based on our land access to the Pebble deposit, and developing contracts, we were able for the first time in years to pay out benefits to our shareholders through a settlement trust. [The statutory cite for ANCSA Settlement Trusts is located at 43 USC § 1629e.]

Now, however, the EPA's 404(c) determination will take those contractual rights based solely upon the fiction of "significant degradation and significant loss." Indeed, there does not appear to a statutory definition nor a regulatory one for the adjective "significant." And, the closest it appears EPA can come to "significant" impact with respect to fisheries is a loss of less than 0.1%. The loss for APC's economic advantage is 100% That, we believe, is significant.

(...)

Alaska Peninsula Corporation believes that due process is an absolute requirement. The proposed determination, which amounts to a preemptive veto, should be withdrawn. The process established should be permitted to go forward, utilizing the best available science.

EPA Response

With respect to the commenter's contention that EPA's action constitutes a denial of its rights to due process, EPA disagrees. As an initial matter, "[t]he due process provision of the Fifth Amendment does not apply to the indirect adverse effects of governmental action." See *O'Bannon v. Town Court Nursing Ctr.*, 447 U.S. 773, 789 (1980). The commenter has no interest in any of the waters of the United States to which EPA's action would apply nor does it have any interest in the land on which those waters are situated. Rather, the commenter asserts only that its contractual agreements with PLP would be indirectly affected by EPA's action. Thus, the due process clause does not apply.

Even if the due process provision of the Fifth Amendment applied here, the threshold issue when considering procedural due process is whether a protected property interest exists. As noted above, the commenter has no interest in any of the waters of the United States to which EPA's action would apply nor does it have any property interest in the

land on which those waters are situated. Rather, the commenter asserts only that its contractual agreements with PLP would be indirectly affected by EPA's action. Not all contractual rights constitute property interests protected by procedural due process, but even to the extent that the commenter's contracts with PLP may constitute a protected property interest, EPA has provided more than sufficient procedural due process.

The fundamental requirement of due process is the opportunity to be heard "at a meaningful time and in a meaningful manner." *Mathews v. Eldridge*, 424 U.S. 319, 333 (1976). In *Mathews*, the Supreme Court explained that due process, "unlike some legal rules, is not a technical conception with a fixed content unrelated to time, place and circumstances." *Id.* at 334. Rather, due process is "flexible and calls for such procedural protections as the particular situation demands." *Id.* To determine whether the administrative procedures provided by the Agency were constitutionally sufficient, a court will look to the governmental and private interests that are affected by the action. EPA agrees with the commenter that, under *Mathews*, courts will consider three distinct factors: (1) the private interest that will be affected by the official action; (2) the risk of an erroneous deprivation of such interest through the procedures used, and the probable value, if any, of additional or substitute procedural safeguards; and (3) the Government's interest, including the function involved and the fiscal and administrative burdens that the additional or substitute procedural requirement would entail. *Id.*

As to the first factor, the commenter alleges that it has entered into significant contracts with PLP, including for use of its land and for future contracting rights, that future utilization of those rights would benefit the commenter economically, and that EPA's action renders the future utilization of those rights "meaningless." The commenter has not provided EPA with the contracts at issue and its comment included only very general descriptions, so EPA cannot evaluate the nature of the private interest the commenter alleges will be affected. However, in light of USACE's permit denial and the myriad of other regulatory requirements that would need to be met for the project to proceed, fulfillment of the contracts and the extent of any benefits that might accrue to the commenter as a result are speculative, at best, even in the absence of EPA's action. Finally, EPA notes that, as a general matter, the regulatory landscape, including the applicable CWA statutory authorities, were well known throughout the time period discussed by the commenter.

As to the second factor, the risk of an erroneous deprivation of the commenter's interest through the procedures used is low because EPA has provided ample procedural protections to all interested parties that are more than sufficient under the "particular situation." Indeed, EPA's CWA Section 404(c) regulations provide for more procedure than required under the statute. Section 404(c) of the CWA authorizes EPA to act "after notice and opportunity for public hearings," and consultation with USACE. Here, consistent with its CWA Section 404(c) regulations, EPA provided USACE, PLP, and the

owners of the land on which EPA's action would apply an initial opportunity to consult with EPA (*see* 40 CFR 231.3(a)); the Agency provided a detailed public notice of its proposed action in accordance with prescribed criteria and made the 2022 Proposed Determination available for public review (*see* 40 CFR 231.3(b)); EPA solicited comment on the proposed action during a public comment period of 104 days, well exceeding the minimum requirement of 30 days (*see* 40 CFR 231.4(a)); the Agency held three public hearings, two "in the vicinity of the affected site" and one virtual (*see* 40 CFR 231.4(b)); and EPA provided USACE, PLP, and the owners of the land on which the action would apply a final opportunity to consult with the Agency before it completed its CWA Section 404(c) review process and issued the FD (*see* 40 CFR 231.6). Finally, consistent with Agency guidance, EPA offered government-to-government and ANCSA consultation to tribal governments and Alaska Native Corporations with an interest in EPA's action, respectively.

The risk of an erroneous deprivation of the commenter's interest through the procedures used is especially low in light of the commenter's engagement, described below, throughout EPA's CWA Section 404(c) review process.

The commenter does not indicate what value, if any, additional or substitute procedural safeguards, including an adjudicatory hearing, would have afforded it, and EPA sees none. The commenter has had ample "opportunity to be heard," including through the public comment process, in which it submitted comments, and, as the commenter noted, during multiple ANCSA consultations with EPA. The commenter also had an opportunity to attend and give testimony at three public hearings held by EPA. To the extent the commenter contends that EPA should have held adjudicatory hearings, EPA disagrees. As an initial matter, EPA's CWA Section 404(c) actions are informal adjudications. See EPA's response to comment 2.C.2. As EPA explained in the 1979 preamble to the CWA Section 404(c) regulations, Section 554(a) of the APA provided that the protections described in APA Sections 556 and 557 "apply only to adjudications 'required by the statute to be determined *on the record* after an opportunity for an agency hearing.'" 44 Fed. Reg. 58078 (Oct. 9, 1979); *see James City County, Virginia v. EPA*, 12 F.3d 1330, 1337 n.4 (4th Cir. 1993), *cert. denied*, 513 U.S. 823 (1994) ("[I]t is apparent that the EPA's determination is not required to be made on the record of a hearing, but rather must be made 'after notice and opportunity for public hearings'"). EPA's determination under CWA Section 404(c) is not required to be made on the record of a hearing, but rather must be made "after notice and opportunity for public hearings." 33 USC 1344(c). Moreover, the Supreme Court has recognized that the judicial model of an adjudicatory hearing is neither a required, nor even the most effective, method of decision-making in all circumstances. *Matthews*, 424 U.S. at 348. "All that is necessary is that the procedures be tailored, in light of the decision to be made, to the capacities and circumstances of those who are to be heard, to insure they are given a meaningful opportunity to present their case." *Id.* at 349 (internal

quotations and citation omitted). And, in assessing what process is due, substantial weight must be given to the good-faith judgment of the Agency charged by Congress with administration of the provision at issue that the procedures it has provided “assure fair consideration” of protected interests that may be affected by the action. *Id.* This is especially true where, as here, the prescribed procedures provide considerable process before final action and where the final action is subject to judicial review. *Id.* As described above, EPA has effectively tailored its CWA Section 404(c) regulations to provide meaningful opportunities for interested parties to be heard at meaningful times throughout the CWA Section 404(c) review process, and any party with standing may challenge EPA’s final determination in federal court. 40 CFR 231.6.

As to the third factor, Congress provided EPA with broad authority to prevent unacceptable adverse effects to specific, enumerated resources, including fishery areas. EPA’s interest in this action, which prevents unacceptable adverse effects to anadromous fishery areas in the SFK, NFK, and UTC watersheds, is substantial. These anadromous fishery areas are part of a larger watershed system that ultimately provides enormous value to many people. As discussed above, EPA has effectively tailored its CWA Section 404(c) regulations to provide meaningful opportunities for interested parties, including the public, to be heard at meaningful times throughout the CWA Section 404(c) review process. EPA’s CWA Section 404(c) regulations require a public comment period, which goes above and beyond what the statute requires, and EPA held multiple public hearings on this action in recognition of the substantial public interest. Additional procedure, including, but not limited to, a formal adjudicatory hearing would impose a significant and unnecessary administrative and fiscal burden on the government when adequate procedural safeguards are already in place.

To the extent that the commenter asserts that EPA’s action will take its contractual rights, EPA disagrees. As a general matter, the government does not “take” contract rights pertaining to a contract between two private parties simply by engaging in lawful action that affects the value of one of the parties’ contract rights. *Omnia Commercial Co. v. United States*, 261 U.S. 502 (1923); *Huntleigh USA Corp. v. United States*, 525 F.3d 1370, 1379 (Fed. Cir. 2008) (holding that the government does not “take” a party’s contract rights simply because its regulatory activity renders those contract rights valueless). Here, like in *Omnia* and *Huntleigh*, even if EPA’s action may have the effect of frustrating the purpose of the commenter’s contracts, EPA has not assumed the contracts and thus no takings claim can be predicated on the asserted diminished value of the contracts or contractual rights. Rather, the commenter contends that it would suffer economic injury, not as a result of the government taking its property, but as a more attenuated result of the alleged impact of government action with respect to aquatic resources the commenter does not own or control. *See Air Pegasus of D.C., Inc. v. United States*, 424 F.3d 1206, 1210, 1215 (Fed. Cir. 2005). Essentially, the commenter asserts that by lawfully

limiting USACE's ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material, EPA is frustrating the commenter's business expectations. Even if true, this circumstance does not form the basis for a viable takings claim. *See id.*

To the extent that the commenter contends that EPA's action is a "preemptive veto," *see* Section 2 of the FD, which explains EPA's authority and its rationale for acting now.

With respect to the commenter's contention that EPA should have withdrawn the PD, EPA disagrees. EPA reviewed the available information, including the relevant portions of the USACE permitting record, and this information supports the findings in the FD. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. Appendix B, Attachment 1, of the FD addresses FEIS conclusions that appear to be inconsistent with the FD.

With respect to the commenter's contention that there does not appear to be a statutory definition nor a regulatory one for the adjective "significant," *see* EPA's response to comment 4.A.1.

2.D Background and Project Description

2.D.1 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 5)

2. EPA's press release overstates that the 2022 PD "would help protect the Bristol Bay watershed's rivers, streams, and wetlands."

The press release misleads the press and the public. It says:

If finalized, EPA's Section 404(c) determination would help protect the Bristol Bay watershed's rivers, streams, and wetlands that support the world's largest sockeye salmon fishery and a subsistence-based way of life that has sustained Alaska Native communities for millennia.

"The Bristol Bay watershed is a shining example of how our nation's waters are essential to healthy communities, vibrant ecosystems, and a thriving economy," said EPA Administrator Michael S. Regan.

"EPA is committed to following the science, the law, and a transparent public process to determine what is needed to ensure that this irreplaceable and invaluable resource is protected for current and future generations."

"Bristol Bay supports one of the world's most important salmon fisheries," said Regional Administrator for EPA Region 10 Casey Sixkiller. [Boldface original; emphasis added]

The press release overstates the geographic scope of protection as "the Bristol Bay watershed's rivers, streams, and wetlands." It ties Administrator Regan and Regional Administrator Sixkiller to that overstatement.

EPA Response

EPA disagrees with the commenter that the May 25, 2022, press release overstates the geographic scope of protection or misleads the press and public.

First, the press release merely states that this action will “help protect” the Bristol Bay watershed generally. This is a very general (and accurate) statement that does not purport to identify the legal boundaries of the action.

Second, the press release explicitly states that the proposed prohibition and restriction would apply to certain waters of the South Fork Koktuli, North Fork Koktuli, and Upper Talarik Creek watersheds. Section 3 of the FD explains the value of the aquatic resources within these watersheds and how they contribute to the productivity of the larger Bristol Bay region.

Third, the PD, which was the legally controlling document, was fully available for public review and comment. Section 5 of the PD described the defined area for prohibition and the defined area for restriction, within which EPA proposed to prohibit and restrict the use of certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. Section 5 of the PD identified the discharges that would be subject to the prohibition and restriction.

2.D.2 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, pp. 9–13)

B. EPA's errors and omissions were repeated by the press, by interest groups, and by elected officials.

In multiple instances identified below, EPA's errors and omissions misled national, regional, and local press, trade publications, and public interest groups into believing that the 2022 PD does more than it does. With respect to EPA's three errors - i.e., false claims that the 2022 PD (1) protects the "Bristol Bay watershed," when it does not; (2) protects "the Bristol Bay watershed's rivers, streams, and wetlands," when it does not; and (3) would "prohibit discharges of dredged or fill material associated with mining the Pebble deposit ... within the mine site footprint for the 2020 Mine Plan," when it does not-the press, trade publications of the fishing and mining industries, and public interest groups repeated EPA's erroneous information. With respect to EPA's four omissions, almost no one in the press, trade publications, or the interest groups stated that the proposed limits in the 2022 PD are weaker than those of the 2014 PD or addressed the other omissions. In other words, EPA's errors and omissions appear to have caused the press, trade publications, and interest groups to repeat EPA's errors and omissions. By failing to correct them, EPA lets the consequences of them continue.

1. The press repeated EPA's errors and omissions when the press referred to the "watershed," "footprint," and "prohibit."

I did an initial Google search simply for "EPA Pebble mine Bristol Bay," limited the date of publication from May 24, 2022 to June 24, 2022, and looked for patterns in the top ten or so entries in Google's

listing. All but two (by interest groups) were press coverage. Overwhelming, the press entries were dated May 25, 2022, the day of EPA's press release and a day before EPA posted the 2022 PD.

When I reviewed the first seven press entries of May 25, below, I noticed that "footprint" appeared in five entries. They were strikingly similar in how they erred. In each instance, the press erred by overstating the nature of the prohibition and essentially repeating EPA's error in its press release that "The Proposed Determination proposes to prohibit discharges of dredged or fill material associated with mining the Pebble deposit into waters of the United States within the mine site footprint for the 2020 Mine Plan..." I also noticed frequent errors overstating the geographic scope of the Proposed Determination such as when the press wrote that the protections would apply to the "watershed" or would protect "Bristol Bay."

The underscored texts in the following seven entries dated May 25, 2022 show how particular journals relied, in various ways, on EPA's errors and omissions to overstate the geographic scope of the 2022 PD and overstate the nature the prohibition.

(1) The New York Times on May 25, 2022 published "Biden Administration, Settling a Long Feud, Moves to Block a Mine in Alaska" at <https://www.nytimes.com/2022/05/25/climate/pebble-mine-alaska-epa.html>. It asserts: (1) "The E.P.A. has proposed to ban the disposal of mining waste in the Bristol Bay watershed, a decision that very likely means the end of the Pebble Mine project;" (2) "the Environmental Protection Agency proposed a legal determination that would ban the disposal of mining waste in the Bristol Bay watershed;" (3) "The determination would prohibit any entity from disposing mine-related waste within 308 square miles around the site of the proposed Pebble Mine project;" and (4) "'The Bristol Bay watershed is a shining example of how our nation's waters are essential to healthy communities, vibrant ecosystems, and a thriving economy,' said Michael S. Regan, the administrator of the Environmental Protection Agency. 'E.P.A. is committed to following the science, the law, and a transparent public process to determine what is needed to ensure that this irreplaceable and invaluable resource is protected for current and future generations.'" (Emphasis added).

(2) The Alaska Public Media and KTOO on May 25, 2022 published "EPA proposes to veto Pebble Mine to protect salmon-rich Bristol Bay" at <https://www.alaskapublic.org/2022/05/25/epa-proposes-to-veto-pebble-mine-to-protect-salmon-rich-bristol-bay/>) and <https://www.ktoo.org/2022/05/25/epa-proposes-block-pebble-mine/>. It asserts: (1) "The U.S. Environmental Protection Agency is proposing protection for the Bristol Bay watershed that would permanently ban the Pebble Mine;" (2) "It's the 'veto' of Pebble that fishermen and tribes in the Bristol Bay region have requested for years;" and (3) "If made final, it would ban any dredging or filling of federal waters and wetlands in service of mining the Pebble Deposit, at least within the footprint of the mine plan Pebble drafted." (Emphasis added)

(3) The Seattle Times on May 25, 2022 published "EPA Proposes Bristol Bay Protections in Potential Blow to Pebble Mine Development" at <https://www.seattletimes.com/seattle-news/epa-proposes-bristol-bay-protections-in-potentially-fatal-blow-to-pebble-mine-development/>. It asserts: (1) that the 2022 PD "would effectively block attempts to develop" Pebble mine; (2) EPA Regional Administrator Casey Sixkiller said in a statement, "Clearly, Bristol Bay and the thousands of people who rely on it

deserve the highest level of protection;" and (3) that the 2022 PD "would prohibit discharges of dredge or fill material within the mine site footprint in the South Fork Koktuli River, North Fork Koktuli River and Upper Talarik Creek watersheds." (Emphasis added)

(4) The Associated Press on May 25, 2022 published "EPA proposes restrictions in fight over Alaska mine" at <https://apnews.com/article/politics-us-environmental-protection-agency-army-corps-of-engineers-alaska-02034beed0d6f136660d8fdb63d4277>. It asserts: (1) "The EPA in a statement said the proposal would bar discharges of dredged or fill material into the waters of the U.S. within the mine site footprint proposed by the Pebble partnership;" and (2) "Clearly, Bristol Bay and the thousands of people who rely on it deserve the highest level of protection," Sixkiller said in a statement. (Emphasis added)

(5) The Washington Post on May 25, 2022 published "EPA proposes protections for world's biggest sockeye salmon fishery" at <https://www.washingtonpost.com/climate-environment/2022/05/25/biden-epa-bristol-bay-salmon/>. It asserts: (1) "The Biden administration's decision to protect Bristol Bay deals a blow to a huge proposed gold and copper mine in southwest Alaska;" and (2) "'The Bristol Bay watershed is a shining example of how our nation's waters are essential to healthy communities, vibrant ecosystems, and a thriving economy,'" EPA Administrator Michael Regan said in a statement. (Emphasis added)

(6) The Anchorage Daily News on May 25, 2022 published "EPA proposes restrictions in fight over Pebble mine" at <https://www.adn.com/alaska-news/2022/05/25/epa-proposes-restrictions-in-fight-over-pebble-mine/>. It asserts: "The EPA in a statement said the proposal would bar discharges of dredged or fill material into the waters of the U.S. within the mine site footprint proposed by the developer, the Pebble Limited Partnership." (Emphasis added)

(7) National Fisherman, a trade publication of the commercial fishing industry, on May 25, 2022 published "EPA moves once more to protect Bristol Bay" at <https://www.nationalfisherman.com/alaska/epa-moves-once-more-to-protect-bristol-bay>. It asserts: (1) "The U.S. Environmental Protection agency has followed through on its promise of Clean Water Act protections for Alaska's Bristol Bay watershed, issuing a revised proposal for public comment May 25;" (2) "'The Bristol Bay watershed is a shining example of how our nation's waters are essential to healthy communities, vibrant ecosystems, and a thriving economy,'" EPA Administrator Michael S. Regan in announcing the move Wednesday. "EPA is committed to following the science, the law, and a transparent public process to determine what is needed to ensure that this irreplaceable and invaluable resource is protected for current and future generations." (3) "If finalized, EPA's Section 404(c) determination 'would help protect the Bristol Bay watershed's rivers, streams, and wetlands ... ;" and (4) "The determination would prohibit discharges of dredged or fill material associated with mining the Pebble deposit into waters within the mine site footprint as outlined in a 2020 plan, located in the South Fork Koktuli River, North Fork Koktuli River, and Upper Talarik Creek watersheds." (Emphasis added)

After EPA posted the 2022 PD on May 26, 2022, the accuracy of the press may have improved marginally in some accounts, but there are fewer daily examples, probably because the 24-hour news cycle had

passed and much of the press had published on May 25. Here is an example that still errs with respect to what would be prohibited, and confuses the proposed restriction for prohibition, which implicates EPA's omission of what the restriction would be.

(8) E&E News on May 27, 2022 published "EPA's Pebble 'veto' won't stop all mining in Alaska's Bristol Bay" at <https://www.eenews.net/articles/epas-pebble-veto-wont-stop-all-mining-in-alaskas-bristol-bay/>. It asserts: (1) that "EPA's move" would "ban mining the Pebble deposit;" (2) "The veto ... includes approximately 309 square miles surrounding the 2020 mine plan;" and (3) "What's more, mining the Pebble deposit is only prohibited by the proposal if dredging and filling of wetlands and streams associated with mining would have similar or greater effects to any one of the four 'unacceptable adverse effects' EPA identified the 2020 mine plan would cause," which (Emphasis added)

These statements still err by alleging that EPA would "ban mining the Pebble deposit" and by confusing an unspecified restriction for a prohibition.

None of the foregoing eight journals reported that the 2022 PD would only prohibit discharges associated with "construction and routine operation of the 2020 Mine Plan" (2022 PD at ES-13, 5-2) occurring "within the mine site footprint for the 2020 Mine Plan" (2022 PD at ES- 13, 5-2). Instead, the journals focused on the prohibition "within the mine site footprint." EPA's press release probably accounts for the misreporting, because it said: "The Proposed Determination proposes to prohibit discharges of dredged or fill material associated with mining the Pebble deposit into waters of the United States within the mine site footprint for the 2020 Mine Plan" and omitted any explanation that the prohibition would apply only to "construction and routine operation of the 2020 Mine Plan." That error and omission apparently confused the press, trade publications, and as we shall see, public interest groups and the public at large.

Therefore, I did a second Google search, this time for "EPA prohibit 'within the mine site footprint'" (<https://www.google.com/search?client=firefox-b-l&q=EPA+prohibit+%22within+the+mine+site+footprint%22>). Doing so opened up a list of entries, most of which repeat EPA's error and omission in the press release that the Proposed Determination would "prohibit discharges ... associated with mining the Pebble deposit into waters ... within the mine site footprint for the 2020 Mine Plan....."Here are examples from my second Google search.

(9) CNBC on May 25, 2022 published "Biden moves to protect major Alaska watershed from mining" at <https://www.cnbc.com/2022/05/25/biden-moves-to-protect-major-alaska-watershed-from-mining.html>. It asserts: "The Biden administration on Wednesday moved to ban the disposal of mining waste in Alaska's Bristol Bay watershed ... ;" (2) "'The Bristol Bay watershed is a shining example of how our nation's waters are essential to healthy communities, vibrant ecosystems, and a thriving economy,' EPA Administrator Michael Regan said in a statement. 'EPA is committed to following the science, the law, and a transparent public process to determine what is needed to ensure that this irreplaceable and invaluable resource is protected for current and future generations,' Regan said;" and (3) "The legal determination would ban any entity from discharging waste associated with mining the Pebble deposit within the mine site footprint." (Emphasis added)

(10) US News & World Report on May 25, 2022 published "EPA Proposes Restrictions in Fight over Pebble Mine" at <https://www.usnews.com/news/us/articles/2022-05-25/epa-proposes-restrictions-in-fight-over-alaska-mine>. It asserts: (1) that EPA "would block plans for a copper and gold mine in Alaska's Bristol Bay region;" (2) "The EPA in a statement said the proposal would bar discharges of dredged or fill material into the waters of the U.S. within the mine site footprint proposed by the Pebble partnership " and (3) "Casey Sixkiller, the EPA's administrator for the region, said ... 'Clearly, Bristol Bay and the thousands of people who rely on it deserve the highest level of protection,' Sixkiller said in a statement." (Emphasis added)

(11) North of 60 Mining News, a trade publication of the mining industry, published on May 25, 2022 and updated June 2, 2022, "EPA takes another shot at stopping Pebble" at <https://www.miningnewsnorth.com/story/2022/05/27/news/epa-takes-another-shot-at-stopping-pebble/7387.html>. It asserts: (1) EPA could "issue a veto" and "[i]f finalized, the decision would lock out any future for a Pebble mine;" (2) "EPA's Proposed Determination would prohibit and restrict discharges of dredged or fill material associated with mining the Pebble deposit into waters of the United States within the mine site footprint located in the South Fork Kaktuli River, North Fork Kaktuli River, and Upper Talarik Creek watersheds." (Emphasis added)

The underscored texts in the foregoing quotations of these eleven examples of press coverage show errors which occurred apparently because of EPA's errors and omissions.

EPA Response

Please see EPA's response to comment 2.D.1. With respect to the commenter's expressed concern alleging inaccurate news reporting, EPA is not obligated to, nor can it, control the reporting of independent press outlets.

2.D.3 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, pp. 13–14)

2. Interest-group entities repeated EPA's errors and omissions.

Interest groups apparently relied on the EPA's errors and omissions to overstate the geographic scope and effect of the 2022 PD, overstate the nature the prohibition, and continued to do so after May 25, 2022.

(1) The Natural Resources Defense Council (NRDC) on May 25, 2022 issued a statement at <https://www.nrdc.org/experts/taryn-kiekow-heimer/epa-issues-proposal-protect-bristol-bay-stop-pebble-mine>. It asserts: (1) "EPA's Proposed Determination, if finalized, would prohibit development of the Pebble Mine and provide lasting protections for parts of Bristol Bay" (*italics original*); and (2) the proposed determination would "p]rohibit discharges of dredged or fill material associated with mining the Pebble deposit, as defined by the mine plan submitted by the Pebble Limited Partnership in 2020." (Emphasis added) NRDC's statement gave links to EPA's Bristol Bay website and the press release. (Emphasis added)

(2) SalmonState on May 25, 2022 issued a press release at <https://salmonstate.org/category/press-release/>, literally titled: "SalmonState urges swift action on EPA's proposed protection for ..." (Ellipsis original!) It asserts: "Today, as a record-breaking forecasted run of more than 70 million sockeye salmon make their way toward Bristol Bay, Alaska, the Environmental Protection Agency announced proposed protections for the region" (Emphasis added)

(3) Bristol Bay Regional Seafood Development Association, a corporation created pursuant to an Act the Alaska legislature that statutorily requires all salmon permit holder in Bristol Bay to be a member in order to vote on seafood taxes, and which also seeks to promote the industry, on May 25, 2022 issued a press release at <https://www.bbrsda.com/updates/2022/5/25/bristol-bay-fishermen-celebrate-epas-proposed-protections-for-worlds-largest-wild-salmon-fishery>. It asserts: "the Environmental Protection Agency (EPA) announced that it will release proposed protections for the Bristol Bay watershed on Thursday, May 26th."

(4) Trout Unlimited posted a video at <https://www.youtube.com/watch?v=vkNU6U4en6g>. It asserts: "Bristol Bay needs and deserves permanent protection. The EPA has announced protections for the region through the Clean Water Act. Now, we need to get loud, and tell them we support these important protections." E&E News also reported in its article on May 27, 2022, supra, that "Nelli Williams, Alaska program director for fisheries conservation group Trout Unlimited, said her nonprofit is 'really happy with' EPA's 'highly targeted' proposal to stop Pebble from being built," See <https://www.eenews.net/articles/epas-pebble-veto-wont-stop-all-mining-in-alaskas-bristol-bay/>. (Emphasis added)

(5) United Tribes of Bristol Bay (UTBB), according to SitNews, is the source of a posting at <http://www.sitnews.us/0622News/062122/062122-bristol-bay.html>, made after EPA's hearing in Dillingham. It asserts: "EPA's proposal would prevent Pebble from building the mine it proposed in 2020, putting about 15 percent of the deposit off limits...." The Washington Post wrote that Alannah Hurley, of UTBB, called the EPA's announcement a "monumental step," saying "Our tribes have been asking for this for the last 12 years." See <https://www.washingtonpost.com/climate-environment/2022/05/25/biden-epas-bristol-bay-salmon/>. (Emphasis added)

(6) The Wildlife Management Institute on June 15, 2022 issued a statement titled "EPA Clean Water Act Proposed Determination Would Prohibit Disposal in Bristol Bay Watershed" at <https://wildlifemanagement.institute/brief/june-2022/epa-clean-water-act-proposed-determination-would-prohibit-disposal-bristol-bay>. It asserts: (1) the 2022 PD "would prohibit the discharge of dredged or fill material associated with mining the Pebble Deposit. If finalized, the determination may be the final action to halt the development of the Pebble Mine;" (2) "The Proposed Determination would prohibit discharges of dredged or fill material associated with mining the Pebble deposit into waters of the United States within the mine site footprint for the 2020 Mine Plan;" and (3) that the proposed determination would "prohibit discharges from any future plan to mine the Pebble deposit that would result in adverse effects similar to those associated with the 2020 Mine Plan." (Emphasis added)

As with press coverage of the 2022 PD, the foregoing examples of interest group coverage reveal errors apparently attributable to EPA's errors and omissions.

EPA Response

Please see EPA's response to comment 2.D.1. With respect to the commenter's expressed concern alleging inaccurate reporting from interest groups, EPA is not obligated to, nor can it, control the reporting of independent interest organizations.

2.D.4 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 15)

3. Senator Sullivan repeated EPA's erroneous press release when he and Senator Murkowski alleged EPA is engaged in a "preemptive" determination.

On May 26, 2022, Senator Dan Sullivan issued a press release titled "Murkowski, Sullivan Criticize EPA's Pursuit of Veto for Pebble Mine," posted at <https://www.sullivan.senate.gov/newsroom/press-releases/murkowski-sullivan-criticize-epas-pursuit-of-veto-for-pebble-mine>. With respect to Senator Murkowski, it said that she continues "to stand firmly with the many Alaskans, including fishermen and Alaska Natives, who are against this project." She said that "there is no guarantee that a future administration will not revoke [a 404(c) determination], that she has never supported "a blanket. preemptive approach for any project," that her concern "has always been that this could be used as precedent to target resource development projects across our state." (Emphasis added)

Senator Sullivan said that he "has consistently opposed the EPA's pursuit of preemptive veto authority over resource development projects on state lands in Alaska," and that such "an approach to providing certainty for Bristol Bay . . . could threaten Alaskans' ability to responsibly develop our world-class resources in other parts of the state, for the benefit of our communities." Senator Sullivan's press release linked to EPA's press release of May 25, 2022 and essentially quoted EPA's error:

Background: EPA's Region 10 Office announced a Proposed Determination under Section 404(c) of the Clean Water Act that would "prohibit the discharge of dredged or fill material associated with mining the Pebble deposit" into the South Fork Kaktuli River (SFK), North Fork Kaktuli River (NFK), and Upper Talarik Creek (UTC) watersheds. [<https://www.sullivan.senate.gov/newsroom/press-releases/murkowski-sullivan-criticize-epas-pursuit-of-veto-for-pebble-mine>.]

EPA's erroneous press release apparently misled Senator Sullivan into believing that EPA proposed to prohibit such discharges associated with mining the Pebble deposit, when the 2022 PD proposed to prohibit only discharges associated with the 2020 Mine Plan. [EPA's press release also misled Senator Sullivan by including Upper Talarik Creek in the scope of the prohibition when it includes only the Kaktuli drainages.]

EPA Response

See response to comment 2.D.1. With respect to the commenter's expressed concern alleging inaccurate statements by U.S. senators, EPA is not obligated to, nor can it, control the statements of any individual or public figure. With respect to the inclusion of the UTC watershed in EPA's May 25, 2022 press release, the inclusion of the UTC watershed in the summary description of the proposed prohibition was in error. However, the PD, which was the legally controlling document, was fully available for public review and comment and correctly identified the defined area for the prohibition.

2.D.5 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, pp. 15–16)

C. On May 25, 2022, anti-Pebble entities reportedly issued statements which focused on obtaining quick action by EPA rather than on the substance of the action, and Members of Congress did the same.

On May 25, 2022, Alaska Sporting Journal posted EPA's press release and statements by spokespersons for entities which urged prompt action on the sight-unseen, yet-to-be issued 2022 PD. See <https://aksportingjournal.com/epa-recommends-further-bristol-bay-protections/>. The Journal reported: (1) United Tribes of Bristol Bay urged EPA to "finalize strong protections this year;" (2) Natural Resources Defense Council urged EPA to "finish the job of protecting Bristol Bay this year;" (3) Commercial Fishermen for Bristol Bay urged EPA to "move quickly to finalize the 404(c) Clean Water Act process to enact durable, long-lasting protections for the region, as we have requested, as soon as possible;" (4) Bristol Bay Native Corporation urged EPA to produce "a final determination before the end of the calendar year;" and (5) SalmonState said that it "joins with Tribes, fishermen and Bristol Bay communities in urging the EPA to finalize these protections before the end of 2022." (Emphasis added) Similarly, the Bristol Bay Regional Seafood Development Association, in its press release on May 25, 2022 at <https://www.bbrsda.com/updates/2022/5/25/bristol-bay-fishermen-celebrate-epas-proposed-protections-for-worlds-largest-wild-salmon-fishery>. said: "We look forward to the EPA completing its 404(c) process as quickly as possible"

These spokespersons and entities did so on May 25, 2022 even though they presumably had not read the yet-to-be-issued 2022 PD. They presumably did not know that it increased the limits on all four categories of allowable harms, by as much as five fold over those of the 2014 PD, and that PLP - or whoever in the future owns or controls mineral interests at the Pebble deposit - could probably revise the 2020 Mine Plan to be within the increased limits and apply for and may obtain a Section 404 permit under a future federal administration favorable to Pebble mine. They presumably did not understand that urging EPA to move quickly could lead to it adopting the increased limits of the 2022 PD that would be necessary for permitting a Pebble mine. They presumably did not know that legislative ideas had circulated which would allow some other entity to join with or step into the shoes of PLP, revise the 2020 Mine Plan to be within the increased limits, and apply for and perhaps obtain a discharge from a future federal administration favorable to Pebble mine, and then proceed to develop the mine.

Members of Congress who support conserving the Bristol Bay drainages and oppose Pebble mine fell into line. The previously cited article of May 26, 2022 in Energy & Environment News titled "Alaska Republicans open to EPA Pebble mine veto" at <https://www.eenews.net/articles/alaska-republicans-open-to-epa-pebble-mine-veto/>, also asserted: (1) "Democrats in both chambers who have been opposed to the mine applauded EPA's announcement yesterday and joined environmental groups in calling on the agency to quickly finalize its decision;" (2) "Democratic Sen. Maria Cantwell of Washington, said in a statement, 'I commend the EPA for advancing permanent Clean Water Act protections for Bristol Bay, and I urge them to move swiftly to finalize these protections and ensure Bristol Bay salmon are protected forever';" and (3) "Rep. Peter Defazio of Oregon, the Democratic chair of the House Transportation and Infrastructure Committee, Rep. Grace Napolitano of California, who chairs the Subcommittee on Water Resources and Environment, and Rep. Jared Huffman of California, also called on EPA yesterday to move quickly to finalize the veto." (Emphasis added)

Presumably, those members of Congress (1) had not read the 2022 PD, (2) did not know it increased the limits, (3) did not know that PLP - or whoever in the future owns or controls mineral interests at the Pebble deposit - could revise the 2020 Mine Plan to be within the increased limits and apply for and could obtain a Section 404 permit under a future federal administration favorable to Pebble, and (4) did not know of legislative ideas that would allow other entities to join with or step into the shoes of PLP. Representative Huffman even posted on his official media-center webpage the May 26, 2022 article in Energy & Environment News titled "Alaska Republicans open to EPA Pebble mine veto." See <https://huffman.house.gov/media-center/in-the-news/alaska-republicans-open-to-epa-pebble-mine-veto> (last visited July 4, 2022).

EPA Response

See EPA's response to comment 2.D.1. With respect to the commenter's expressed concern alleging inaccurate statements by independent, outside parties, including members of Congress, EPA is not obligated to, nor can it, control the statements of independent, outside parties. Comments regarding the actions of independent, outside parties are outside the scope of EPA's action.

2.D.6 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 24)

{III. PROMPT AGENCY AND LEGISLATIVE ACTIONS ARE NECESSARY TO KEEP THIS SITUATION FROM BEING COUNTERPRODUCTIVE.

A. EPA should issue a revised 2022 PD that rewrites Chapters 4 and 5 to be much stronger, and engage in a renewed public process that corrects EPA's errors and omissions and their consequences, and allows the public to comment more usefully.}

(...)

BBFA and EVC offer ten suggestions for how EPA should rewrite Chapters 4 and 5 of the 2022 PD to be much stronger, issue a revised 2022 PD, and engaged in a renewed public process.

1. EPA must be transparent about many aspects of this situation.

EPA's errors and omissions, their consequences, the unexplained increased limits in the 2022 PD, and how they combine with the ideas for legislation, justify a revised 2022 PD accompanied by an accurate press release. EPA should explain its errors and omissions, the consequences, and why they occurred. EPA should undertake a renewed public process of additional hearings, meetings, teleconferences, and virtual events, so that those who previously supported the 2022 PD can address whether they continue to do so. They may wish to reconsider in light of how the increased limits allow a revised mine plan to be permitted, and how the combination of the increased limits and the ideas for legislation could lead to a Pebble mine. I expect that most who supported the 2022 PD initially will demand stronger standards. I expect that if EPA tells the people the unvarnished truth about its errors and omissions, then the public will respond in a manner that helps EPA and Congress resolve this problem. Those errors, omissions, and their consequences blemish Administrator Regan's claim in EPA's press release that "EPA is committed to following ... a transparent public process to determine what is needed to ensure that this irreplaceable and invaluable resource is protected for current and future generations." To correct that, EPA must do far more than amend the misleading banner on its Bristol Bay webpage. EPA should solicit public comment on the revised 2022 PD and an inventory of ideas for improving it.

EPA Response

EPA disagrees with the commenter's contention that EPA should revise the 2022 PD or undertake a new public process in light of alleged errors or omissions. EPA has engaged in an open and transparent CWA Section 404(c) review process. The PD was fully available for public review and comment. EPA considered all public comments on the PD before taking final action.

With respect to the commenter's position that EPA reconsider its action in light of how EPA's action could "allow a revised mine plan to be permitted," please see EPA's responses to comments 7.0.1, 7.0.2, and 7.0.3. With respect to the commenter's position that EPA reconsider its action in light of "how the combination of the increased limits and the ideas for legislation could lead to a Pebble mine," comments related to potential future legislation are outside the scope of EPA's authority under CWA Section 404(c) and this action.

2.D.7 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, pp. 28–33)

{III. PROMPT AGENCY AND LEGISLATIVE ACTIONS ARE NECESSARY TO KEEP THIS SITUATION FROM BEING COUNTERPRODUCTIVE.

A. EPA should issue a revised 2022 PD that rewrites Chapters 4 and 5 to be much stronger, and engage in a renewed public process that corrects EPA's errors and omissions and their consequences, and allows the public to comment more usefully.

(...)

BBFA and EVC offer ten suggestions for how EPA should rewrite Chapters 4 and 5 of the 2022 PD to be much stronger, issue a revised 2022 PD, and engaged in a renewed public process.}

(...)

10. EPA should prepare a briefing paper that helps the public and the press to use accurately key legal aspects of § 404(c), its regulations, and case law, so that the public and press can be more effective, and because the absence of such a briefing paper contributes to unintended consequences for both sides of this issue.

The public, the press, and elected officials do not need to be led or misled. Most simply need accurate information so they can figure out what they want, and what they want to say.

EPA's current briefing paper, "Clean Water Act Section 404(c) 'Veto Authority,'" is not tailored to this situation. That briefing paper, by its own admission, is based on EPA's prior 404(c) determinations which "have mostly been taken in response to unresolved Corps permit applications" in which a 404(c) determination "is frequently referred to as an EPA veto of a Corps permit."

[See <https://www.epa.gov/sites/default/files/2016-03/documents/404c.pdf>.] Here, the main issues concern potential future mine plans, not whether to prohibit the 2020 Mine Plan for which the Corps denied a permit, and not a pending application or permit approved by the Corps, even though PLP is appealing the Corps' denial.

EPA should prepare, circulate, and post a briefing paper tailored to this situation. It should address: (1) the purpose of § 404(c), (2) the "whenever" clause, (3) the reasons for pre application authority, (4) 404(c) terminology as it relates to this situation including that the definition of "unacceptable adverse effect" is in terms of "likely" effects, and (5) the Ninth Circuit's interpretation of "likely" in *Trout Unlimited v. Pirzadeh*, supra.

The lack of an appropriate briefing paper undermines the interests of everyone involved in this issue, as demonstrated below. The purpose of Section 404(c) is to protect aquatic resources and uses, not to stop projects, even though a consequence of a 404(c) determination may be that the project cannot proceed. As EPA explained in 1979 upon adopting 40 C.F.R. Part 231 to implement the statute, the "whenever" clause in section 404(c) [Section 404(c), 33 U.S.C. § 1344, provides: (c) Denial or restriction of use of defined areas as disposal sites. The Administrator is authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and he is authorized to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water

supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. Before making such determination, the Administrator shall consult with the Secretary. The Administrator shall set forth in writing and make public his findings and his reasons for making any determination under this subsection.] authorizes EPA to make 404(c) determinations before an application has been filed. 44 Fed. Reg. 58076, 58077 (October 9, 1979). The reasons for pre-application authority are:

(1) to "facilitate planning by developers and industry" to "eliminate frustrating situations in which someone spends time and money developing a project for an inappropriate site and learns at an advanced stage that he must start over," and

(2) to "facilitate comprehensive rather than piecemeal protection of wetlands" and waters of the United States. 44 Fed. Reg. 58077.

EPA explained that "where possible it is much more preferable to exercise this authority before the Corps or state has issued a permit." *Id.*

When no application is pending or no permit has been approved, there is nothing to veto, let alone preemptively. In that case, when people request or oppose a "veto" of Pebble mine or urge or oppose EPA doing so "preemptively," they ignore the purpose of the statute, the reasons for pre-application authority, and the rule-making nature of a pre-application 404(c) determination. Substantive rules prevent or discourage contrary behavior. Calling a rule a "preemptive veto" connotes a "preemptive strike." Even the anti-Pebble crowd uses that term to its own detriment out of ignorance of its origin in nuclear deterrence theory. The prattle about "vetoing" Pebble "preemptively" is counterproductive because it leads to unintended consequences - i.e., people asking for what with better information they would not want, as will be demonstrated below in order to urge EPA to prepare the sort of briefing paper we recommend.

a. After 2010, when opponents of Pebble asked EPA to "veto" Pebble mine, they fostered EPA's Pebble-only approach that led to an injunction 2014 and may do so again.

Section 404(c) authorizes EPA, subject to regulations at 40 C.F.R. Part 231, to prohibit, restrict, deny, or withdraw the use of an area as a disposal site for dredged or fill material "whenever" EPA determines that the discharge is likely to have unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas.

Nothing in Section 404(c) or the regulations allows EPA to "veto" a project that is equivalent to more than the discharge permit itself, such as for a dock. Pebble mine is more than a discharge permit. Prohibiting or restricting discharges may make Pebble mine more difficult or impossible to develop depending on the nature of the prohibition or restriction, but that is not the same as "vetoing" Pebble mine, particularly when the 2020 Mine Plan can probably be revised to be within the increased limits of the 2022 PD by moving the bulk tailings storage facility.

From 2010 to 2014, those who overlooked that distinction- between (1) prohibiting or restricting discharges, and (2) the impossibility of "vetoing" Pebble mine in a pre-application setting -- were counterproductive when they asked EPA to "veto" Pebble mine. They were counterproductive because they fostered and supported EPA's Pebble-only approach in the 2014 PD, against which the federal district court promptly issued a preliminary injunction. When faced with claims under the Federal Advisory Committee Act (FACA), the court applied the balance of the hardships test for granting or denying PLP's motion for a preliminary injunction. The court found that EPA, the resources, and the public would suffer no harm whatsoever from granting an injunction because the 2014 PD addressed only a hypothetical Pebble mine, not a pending application or an approved permit allowing development, but that PLP would suffer harm from denying an injunction because PLP would not be able to pursue its FACA claims. So, the court granted the injunction.

A broader approach stood a better chance of prevailing on the balance of the hardships test because, in a pre-application setting in 2014, a broader approach would have facilitated planning by potential mines other than Pebble so that they could have avoided wasting time and money on projects unlikely to be permitted. A preliminary injunction would have prevented such savings, thereby harming to the industry, contrary to one of the reasons for pre-application authority being to "facilitate planning by developers and industry" to "eliminate frustrating situations in which someone spends time and money developing a project for an inappropriate site and learns at an advanced stage that he must start over." 44 Fed. Reg. 58077. Therefore, the court would have been more likely to deny the injunction if the approach had been broader than Pebble-only.

For those who asked EPA to "veto" Pebble mine, and for EPA which pursued a Pebble only approach in the 2014 PD, it was a disaster. It led to a preliminary injunction that helped PLP. The result is nearly a decade of needless anguish since 2014. The original 404(c) petition by my clients in May 2010 asked EPA to address the risks to aquatic resources and uses posed by Pebble and other potential mines in the area. On August 12, 2010, Bristol Bay Native Corporation requested EPA to "carefully tailor" a prohibition for Pebble only. That turned out to be an egregious mistake because, in January 2014, the Watershed Assessment would find that potential mines at the Pebble South PEB, Big Chunk South, Big Chunk North, and Groundhog deposits would or could use the same sites for facilities, particularly TSF sites, as a Pebble mine. Nevertheless, in February 2014, EPA made its own egregious and fatal mistake when it ignored those findings in the watershed assessment and pursued a Pebble-only approach, which misled others, including United Tribes of Bristol Bay, Trout Unlimited, Natural Resources Defense Council, and much of the public into supporting a Pebble-only approach because they apparently thought it amounted to a veto of Pebble mine, when in fact it amounted to an injunction granted against EPA and for Pebble mine.

That is how those who asked EPA to "veto" Pebble mine contributed to EPA's Pebble only approach and got not what they wanted but got what they did not want - an injunction. If they had focused more broadly on the purpose of the statute, the facts that other mines could use the same sites as Pebble mine, and protecting the area, rather than on asking for a so-called "veto," Then they might have fared better

with a broader determination that would have passed the balance of the hardships test and protected more of the area from Pebble and similar mines.

Today, opponents of Pebble mine are repeating the same mistake. They again ask EPA to "veto" Pebble mine. Arguably, that is a bit more meaningful with respect to the 2020 Mine Plan for which the Corps already denied a permit, but such request also fosters EPA's current Pebble only approach. Assuming that EPA avoids FACA claims related to the 2022 PD, the Pebble only approach is likely to result in another injunction, but on different legal claims. They are likely to include a class-of-one equal protection claim and a claim that the restrictions which apply to future mine plans do not serve the purposes of pre-application authority because they do not facilitate either planning by industry or comprehensive protection of wetlands and waters, and are instead piecemeal protection because the restrictions apply only to mining the Pebble deposit. Unless EPA acts more broadly than Pebble-only - such as by including the other potential mines that could use the same sites as Pebble - EPA will invite another decade of needless anguish.

One step to avoid such anguish would be for EPA to prepare, circulate, and post a public briefing paper as we suggest.

b. When Senators Murkowski and Sullivan and the trade publications of the mining industry accuse EPA of a "preemptive" approach, they harm the mining industry by seeking to prevent EPA from using its pre-application authority to facilitate investment and planning decisions based on restrictions they will face.

On June 3, 2022 (updated June 9), North of 60 Mining News reported on the statements that Senators Murkowski and Sullivan had issued on May 26, 2022 which criticized EPA for "preemptive" action. North of 60 Mining News called it a "preemptive strike on [future] Pebble mine permits." See <https://www.miningnewsnorth.com/story/2022/06/03/news-nuggets/alaska-lawmakers-respond-to-epa-decision/7397.html>.

Nobody likes being blind-sided, and Senators Murkowski and Sullivan and North of 60 Mining News put the shoe on the wrong foot. They are confused. They would never say that the automobile industry should be kept in the dark - blind-sided -- about emissions standards its vehicles will face after they arrive on the showroom floor. For four reasons, those who refer to EPA's pre-application authority as "preemptive" would benefit from such a briefing paper.

First, when people allege that EPA acts "preemptively," they threaten to deprive the industry of knowledge of the standards by which it must plan and design projects and make investment decisions. That threatens to waste time and money of the industry.

Second, labeling a pre-application determination as "preemptive" ignores the "whenever" clause in § 404(c) and the reasons for pre-application authority. When there is neither a pending permit application nor an approved permit, there is nothing to veto, let alone "preemptively."

Third, it is arguably pointless, and potentially unlawful under class-of-one equal protection theory, to prohibit discharges for the 2020 Mine Plan and not "preemptively" prohibit discharges of other potential future mines to construct the same facilities at the same sites and cause the same harms as Pebble mine under the 2020 Mine Plan. Hence, EPA's § 404(c) determination for the Spruce No. 1 Mine in West Virginia prohibits discharges by that mine and other potential future mines which could use the same discharge sites as the Spruce No. 1 mine and cause the same harms to certain streams. [EPA, "Final Determination of the Assistant Administrator for Water Pursuant to Section 404(c) of the Clean Water Act Concerning the Spruce No. 1 Mine, Logan County, WV." 76 Fed. Reg. 3126 (January 19,2011).] No one would argue that EPA should stop PLP from discharging dredged and fill material to build its proposed bulk TSF and allow a future mine at the Pebble South PEB, Big Chunk North, Big Chunk South, or Groundhog deposits to engage in such discharges to build exactly the same bulk TSF, at exactly the same location, and cause exactly the same unacceptable adverse effects as PLP doing so for Pebble mine. Elected officials, trade publications, others who support the mining industry, and the industry itself, could benefit from the briefing paper we recommend.

Fourth, labeling a pre-application determination as "preemptive" ignores that substantive rules and regulations are often drafted to prevent or discourage contrary behavior, so calling it "preemptive" is simply a pejorative that reflects confusion curable by a better briefing paper.

c. How to tailor a briefing paper on § 404(c) to this situation.

People deserve to know the consequences of what they ask for. That is the difference between the commenting effectively and potentially helping EPA versus being ineffective and potentially counterproductive. The briefing paper we suggest should address Pebble and similar potential mines and should address at least these four topics:

(1) The purpose, meaning, and key terms of the statute, and the definition of "unacceptable adverse effect," including the term "likely."

* Section 404 requires a permit to discharge of dredged or fill material into waters of the United States including wetlands.

* Such permits would be necessary to construct Pebble mine and other similar mines in the Bristol Bay watershed.

* Section 404(a) authorizes the U.S. Army Corps of Engineers to issue such permits at disposal (discharge) sites specified by a permit.

* Section 404(c) authorizes EPA, subject to a public process and regulations at 40 C.F.R. Part 231, to prohibit, restrict, deny, or withdraw the use of an area as a disposal site for dredged or fill material "whenever" EPA determines that the discharge is "likely" to have "unacceptable adverse effects" on fish habitat, wildlife, recreational areas, commercial, subsistence and sport fishing, and other related public and ecological values.

* The purpose of Section 404(c) and such prohibitions or restrictions is to protect such aquatic resources and uses. The purpose is not to "veto" projects, such as Pebble mine or similar mines, even though the prohibitions or restrictions may make developing such mines more difficult or impossible depending on the nature of the prohibitions or restrictions necessary to protect fish habitat, wildlife, recreational areas, commercial, subsistence and sport fishing, and other public values in this situation from "likely" unacceptable adverse effects.

* Under *Trout Unlimited v. Pirzadeh*, 1 F.4th 738, 759 (9th Cir. 2021), whether "unacceptable" adverse effects are "likely" is a flexible standard that draws considerably on EPA's expertise and judgment that "a reasonable likelihood" exists that an unacceptable adverse effect will occur-not absolute certainty but more than mere guesswork.

(2) The reasons for EPA's pre-application or pre-permit authority. The "whenever" clause in section 404(c) authorizes EPA to issue a 404(c) determination before an application for a permit is filed. In this instance, EPA could use its pre-application authority to impose restrictions or prohibitions on such discharges for future mine plans for which no application has been filed. The reasons for such use of pre-application authority are:

* to "facilitate planning by developers and industry," in this case the mining industry, to "eliminate frustrating situations in which someone spends time and money developing a project for an inappropriate site and learns at an advanced stage that he must start over," and

* to "facilitate comprehensive rather than piecemeal protection of wetlands" and waters of the United States. 44 Fed. Reg. 58077. Therefore, "where possible it is much more preferable to exercise this authority before the Corps or state has issued a permit." *Id.*

(3) The nature of a pre-application 404(c) determination. Like many ordinary regulations, a pre-application 404(c) determination regulates future activities, and may prohibit or restrict future activities that otherwise would cause unacceptable adverse effects and violate the regulation. It may help to think of pre-application 404(c) determinations as like traffic signs that regulate driving to prevent harms that otherwise are reasonably likely to occur.

(4) How to make effective comments in a pre-application setting. When commenting on a proposed 404(c) determination which is or includes a proposed pre-application prohibition or restriction which would apply to large scale mining in the watershed of Bristol Bay, public comments are most helpful to EPA and others when they explain the reasons for or against a proposed prohibition or restriction of such discharges. When people ask EPA to "veto" Pebble mine when no permit application is pending, EPA has a hard time knowing whether such requests seek prohibitions and restrictions that would apply to discharges associated only with Pebble mine or with other potential large mines, too, in the Bristol Bay watershed. So, it helps to state clearly what you want.

EPA Response

EPA agrees with the commenter that the purpose of CWA Section 404(c) is not to stop projects. Rather, the purpose of CWA Section 404(c) is to prevent unacceptable adverse effects from discharges of dredged or fill material on statutorily enumerated resources. As described in Section 2 of the FD, EPA may act under CWA Section 404(c) before a permit application has been filed, during the permitting process, or after the permit has been issued. In the 1979 preamble to EPA's CWA Section 404(c) regulations, EPA acknowledged some of the potential reasons to act in the absence of a permit application, such as to "facilitate planning by developers and industry," "eliminate frustrating situations in which someone spends time and money developing a project for an inappropriate site and learns at an advanced stage that he must start over," and "to facilitate comprehensive rather than piecemeal protection of [aquatic resources]" (44 FR 58077). EPA has engaged in an open and transparent CWA Section 404(c) review process and, after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. The PD, which was the legally controlling document, was fully available for public review and comment. Section 2 of the PD (and ultimately the FD) provided a detailed description of EPA's CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, and EPA's authority and rationale for acting now. EPA acknowledges that the CWA Section 404(c) document referenced above is a general overview document. EPA disagrees that a further briefing paper is necessary.

The commenter's position about the actions and statements of independent, external parties or organizations is outside the scope of EPA's action and/or irrelevant. EPA explained its rationale and basis for focusing on the Pebble deposit in Section 2.1 of the FD. EPA's CWA Section 404(c) action is not based on the opinions or statements of any person or organization that "overlooked th[e] distinction" between EPA's authority to prohibit the specification of any defined area or restrict the use of any defined area as a disposal site for discharges of dredged or fill material with "vetoing Pebble mine." EPA's action is based on its determination that the discharges evaluated in the FD will result in unacceptable adverse effects on anadromous fishery areas (see Section 4 of the FD).

Whether EPA would have prevailed in litigation unrelated to the 2022 PD is outside the scope of EPA's action.

2.D.8 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, pp. 33–36)

B. The Administration should promptly seek legislation that is based on Senator Murkowski's ideas in late 2020 for using the appropriations process to conserve important habitat in the watershed of the Bristol Bay Fisheries Reserve.

1. Murkowski's ideas in late 2020 for using the appropriation process were on the right track. Senator Murkowski was on the right track when she chaired the Senate Interior Environment Appropriations Subcommittee. In October 2020, she told the Alaska Federation of Natives that she would use appropriation bills "to make sure that the Bristol Bay region remains protected." [See "Murkowski says she'll use appropriations to block Alaskan mine," Roll Call, Oct.16, 2020, at <https://rollcall.com/2020/10/16/murkowski-says-shell-use-appropriations-to-block-alaskan-mine/>] With respect to the appropriations bill for 2021, which included \$24.4 million for the Appraisal and Valuation Services Office of the Department of the Interior, she inserted language in November 2020 in the explanatory statement as follows:

Appraisals and Valuations Services Office. - Funding for appraisals and valuations is provided by mandatory funding under the Land and Water Conservation Fund Alternate Allocation rather than through discretionary funds from the Office of the Secretary. Incorporating funds for these activities under the Land and Water Conservation Fund is consistent with historical practice. Additionally, of the funds provided, funding is included for preliminary appraisal and valuation work for potential land acquisitions and exchanges in high-priority conservation areas, such as the Bristol Bay ecosystem. ["Explanatory Statement for the Department of the Interior, Environment, and Related Agencies Appropriations Bill, 2021," p. 74 at <https://www.appropriations.senate.gov/imo/media/doc/INTRept.pdf>.] [Emphasis added]

In December 2020, the United Tribes of Bristol Bay, Bristol Bay Native Association and Bristol Bay Economic Development Corporation issued "The Call." It called for (1) § 404(c) action by EPA, and (2) federal legislation to establish a national fisheries reserve. ["Bay Tribes and entities renew call for permanent watershed protections," KDLG, Feb. 23, 2021 at <https://www.kdlg.org/environment/2021-02-23/bristol-bay-tribes-and-entities-renew-call-for-permanent-watershed-protections#stream/0>] In June 2021, Senator Murkowski met in Dillingham with representatives of the commercial fishing industry (including BBFA), the recreation industry, tribes and others to discuss potential legislation. Comparing § 404(c) action to legislation, she said, that § 404(c) "provides for a level of protection, but it doesn't necessarily ensure that any entity coming beyond the Pebble proposal would be prohibited from mining activity. So if that's what's being sought, it's legislation." "There have been discussions about whether it's exchanges, or ways that you can ensure that the mineral rights that currently exist with the state are exchanged, are conveyed," she said. "So these are the types of things that we are exploring at this point in time." ["On Dillingham trip, Murkowski pushes permanent protections for Bristol Bay," KDLG, June 7, 2021 at <https://www.alaskapublic.org/2021/06/07/on-dillingham-trip-murkowski-pushes-permanent-protections-for-bristol-bay/>.]

2. Public officials should distance themselves from the four new scenarios by which depend on the nexus of the increased limits of the 2022 PD and the legislative ideas we opposed.

No one should be associated with any of the following:

(1) legislation that would exempt the Secretary of the Interior and the Board of the Trust from ethical rules which otherwise prohibit the Secretary, and the Board regardless of the extent to which they are

federal employees, from accepting a gift by PLP of its mining claims so that the Trust and PLP can enter into a joint business venture to develop Pebble mine;

(2) legislation that would terminate PLP mining claims so that some other entity can step into the shoes of PLP to develop Pebble mine; or

(3) a § 404(c) determination that increases the levels of potentially allowable adverse effects, by as much as five fold over those of the 2014 PD, and bases the increased limits on the levels of such effects caused by the 2020 Mine Plan, so that under such legislation, PLP and the Trust could be in a joint venture, or the Trust or some other corporation could have stepped into the shoes of PLP, and could then revise the 2020 Mine Plan to be within the increased limits, and apply for and obtain a discharge permit under a future federal administration favorable to Pebble mine.

When EPA issued the 2022 PD on May 26, 2022, Energy & Environment News published "Alaska Republicans open to EPA Pebble mine veto" at <https://www.eenews.net/articles/alaska-republicans-open-to-epa-pebble-mine-veto/>, it reported: (1) "The Biden administration's move to veto the contentious Pebble gold and copper mine in Alaska's Bristol Bay watershed may soothe the state's Republican senators who in the past have pushed back against federal intervention;" and (2) Senator Sullivan suggested his opposition to the 2022 PD could be muted if it is based on PLP's 2020 Mine Plan, and he said, "If this is based on the project, not the 2014 watershed assessment, it's very different."

Of course, the 2022 PD bases its proposed restrictions and limits applicable to future mine plans on the levels of adverse effects caused by the 2020 Mine Plan. Doing so allows PLP - or whoever in the future owns or controls mineral interests at the Pebble deposit - to revise the 2020 Mine Plan to be within the increased limits, and then to apply for and obtain a Section 404 discharge permit under a future federal administration favorable to Pebble mine.

3. BBFA and EVC's draft legislation is modeled on Senator Murkowski's ideas in late 2020 for using the appropriation process and is consistent with EPA's statement that legislation could achieve broader protection.

On June 29, 2022, KLDG in Dillingham reported on EPA's hearings in June and said that (1) many Bristol Bay tribes, fishermen and environmental advocates want to see comprehensive protections and bans on any mining activity near the Bay, and (2) EPA Region 10's spokesperson Suzanne Skadowski said that federal authorities could further restrict mining, for example, if Congress passed legislation to create a protected area in Bristol Bay. [See "EPA Extends Comment Period on Watershed Protections that Would Block Pebble Mine," at <https://www.kdlg.org/environment/2022-06-29/epa-extends-comment-period-on-watershed-protections-that-would-block-pebble-mine>.]

BBFA and EVC are attaching their draft legislation modeled on Senator Murkowski's approach in late 2020. See Attachment B. Their draft legislation designates the watershed of the Bristol Bay Fisheries Reserve as an area in which the appropriation process for the Department of the Interior would fund appraisals and voluntary conservation agreements, land exchanges, and acquisitions by governmental

and non-governmental entities to conserve important habitat within the watershed of the existing Bristol Bay Fisheries Reserve.

Such legislation lets Alaskan property owners decide for themselves whether they want to achieve financial benefits for conserving important habitat with the federal government's assistance. Once the federal government uses the appropriation process to conserve such lands, then as a practical matter it will have invested in conserving that watershed, and the Corps of Engineers may find it more difficult to ignore matters like the portfolio effect and issue permits for large mines within the watershed of the Reserve. Accordingly, the BBFA and EVC's draft legislation would fund the outstanding obligations of a conservation agreement entered into by the Pedro Bay Corporation, the Conservation Fund, and the Bristol Bay Heritage Land Trust.

We urge EPA to pull out all stops to get the White House, the Department of the Interior, and EPA to work with Congress to pass such legislation, perhaps as a rider, or even in an appropriation bill, before the end of the current Congress.

EPA Response

EPA is exercising its authority under CWA Section 404(c) and its implementation regulations at 40 CFR Part 231. Potential future congressional action and the commenter's views on such are beyond the scope of this action.

TOPIC 3. IMPORTANCE OF THE REGION'S ECOLOGICAL RESOURCES

3.A Physical Setting; Aquatic Habitats; Quantity and Diversity of Aquatic Habitats; Streams; Wetlands, Lakes, and Ponds

3.A.1 Trillium Asset Management, LLC (Doc. #0162, pp. 2–3)

Alaska's Bristol Bay is in our view a uniquely valuable resource. Alaska Native cultures in the region represent one of the last intact salmon-based cultures in the world.

[<https://www.epa.gov/bristolbay/bristol-bay-assessment-final-report-2014>] And as the EPA's Proposed Determination states:

Alaska's Bristol Bay watershed is an area of unparalleled ecological value, boasting salmon diversity and productivity unrivaled anywhere in North America. As a result, the region is a globally significant resource. The Bristol Bay watershed supports the world's largest runs of Sockeye Salmon, producing approximately half of the world's Sockeye Salmon. These sockeye salmon represent the most abundant and diverse populations of this species remaining in the United States. Bristol Bay's Chinook Salmon runs are also frequently at or near the world's largest. Bristol Bay is remarkable as one of the last places on Earth with such bountiful and sustainable harvests of wild salmon. One of the main factors leading to the success of this fishery is the fact that its diverse aquatic habitats are largely untouched and pristine, unlike the waters that support many other salmon fisheries worldwide.

[<https://www.epa.gov/bristolbay/2022-proposed-determination-pebble-deposit-area>]

We also note that the United Tribes of Bristol Bay have "called on the Environmental Protection Agency to finalize strong protections for Bristol Bay's waters, lands, and all they sustain."

[<https://www.utbb.org/press-releases-archive/bristol-bay-leaders-call-on-epa-to-finalize-comprehensive-protections-this-year>]

EPA Response

EPA recognizes that the Bristol Bay watershed is an area of unparalleled ecological value, boasting wild salmon diversity and productivity unrivaled anywhere in North America. See Section 3 of the FD for more information about Bristol Bay's ecological resources.

3.A.2 American Fisheries Society (AFS) and Alaska Chapter of AFS (Doc. #0813, p. 2)

Bristol Bay is a global treasure (Woody 2018). The high diversity and connectivity of aquatic habitats in the Bristol Bay watershed make it one of the most productive regions for Pacific salmon in the world (Bjornn and Reiser 1991; Wobus et al. 2015).

EPA Response

See EPA's response to comment 3.A.1.

3.A.3 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 19)

Pg. 3-35: "Mainstem and off-channel habitats of the SFK, NFK, and UTC also provide abundant habitat for juvenile salmonids. Table 3-9 presents maximum estimated densities and total numbers observed for juvenile Pacific salmon species in mainstem SFK, NFK, and UTC reaches (PLP 2018a: Chapter 15, USACE 2020a)."

Comment: Significant shortcomings of PLP's juvenile salmon data collection and reporting raise questions about the utility and reliability of these data (O'Neal 2012 [O'Neal, S.L. 2012. A Review of PLP Environmental Baseline Documents: Resident fish and juvenile salmon habitat, distribution and assemblage. Fisheries Research and Consulting. Anchorage, AK. 21 pp.]).

EPA Response

EPA recognizes the limitations of available fish distribution and abundance data. As described in Appendix B, EPA concluded that although much is unknown regarding seasonal fish distributions, and significant variability exists in annual estimates of abundance, the data are sufficient to determine that unacceptable adverse effects would result from development of the proposed mine. See Section 4 of the FD for more information about EPA's finding and Appendix B of the FD for more information about data quality and assumptions regarding data applicability.

3.A.4 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 16)

Pg. 3-5: "In terms of water quality, streams draining the Pebble deposit area tend to be near-neutral, with low conductivity, alkalinity, dissolved solids, suspended solids, and dissolved organic carbon (USACE 2020a: Section 3.18). In these respects, they are characteristic of undisturbed streams. However, as would be expected for a metalliferous site, levels of sulfate and some metals (copper, molybdenum, nickel, and zinc) are elevated, particularly in the SFK. Copper levels in approximately 40 percent of samples from the SFK exceeded Alaska's chronic water quality standard (USACE 2020a: Section 3.18). However, most exceedances were in or close to the deposit area, and the number and magnitude of exceedances decreased with distance downstream (USACE 2020a: Appendix K3.18)."

Comment: PLP data used to substantiate these inaccurate generalizations has been thoroughly critiqued with the conclusion that “non-representative surface water and groundwater data were retained, and data interpretation in [PLP’s Environmental Baseline Document] implies water quality is poorer than data support” (Zamzow 2012 [Zamzow, K. 2012. A Review of PLP Environmental Baseline Documents: Water Quality. Center for Science in Public Participation. Chickaloon, AK. 18 pp.]). Moreover, longer term data indicate area surface waters are cold, have neutral pH, low conductivity, and high dissolved oxygen (Bogan et al. 2012 [Bogan, D., R. Shaftel, and D. Rinella. 2012. Baseline biological surveys in wadeable streams of the Kvichak and Nushagak watersheds, Bristol Bay, Alaska. Prepared for the Alaska Department of Environmental Conservation. Anchorage, AK. 31 pp.]).

EPA Response

EPA recognizes the limitations of the available water quality data, but these data are sufficient to determine that unacceptable adverse effects would result from development of the proposed mine. See Section 4 of the FD for more information about EPA’s finding and Appendix B for more information about data quality and assumptions regarding data applicability.

3.A.5 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 19)

Pg. 3-33: Thus, the Nushagak River is the largest producer of Chinook Salmon in the Bristol Bay watershed, and the Kaktuli River is the largest producer of Chinook Salmon in the Nushagak River watershed.”

Comment: This again highlights the global importance of the Nushagak and Kaktuli rivers in light of declining Chinook salmon worldwide.

EPA Response

In addition to recognizing the global significance of the Nushagak River Chinook salmon runs, EPA has added information regarding the recent Board of Fish consideration of an Action Plan to address the Nushagak River Chinook Salmon being designated a stock of management concern (see Section 3 of the FD).

3.A.6 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 19)

Pg. 3-47 – 3-48: “The ability of Bristol Bay to sustain diverse salmon populations is, therefore, dependent on sustaining the viability of the vast network of unique habitats at small spatial scales across the landscape. This suggests that even the loss of a small population within the Bristol Bay watershed’s overall salmon populations may have more significant effects than expected, due to associated loss of genetic and phenotypic diversity of a discrete population (Schindler et al. 2010, Moore et al. 2014, Waples and Lindley 2018).

Comment: This is an excellent summary of the importance of maintaining intact habitats even at small scales in order to support the continued sustainability of Bristol Bay's salmon runs.

EPA Response

EPA recognizes that individual streams, stream reaches, wetlands, lakes, and ponds play a critical role in supporting individual salmon populations and protecting the genetic diversity of Bristol Bay's wild salmon populations. See Section 3 and Appendix B of the FD for additional information regarding habitat importance and the portfolio effect.

3.A.7 Vivian Mendenhall (Doc. #1615, pp. 1–2)

Watersheds that feed into northern Bristol Bay— an omission:

The Executive Summary (header for Figure E-1) states that the watershed of Bristol Bay includes "... the Togiak, Nushagak, Kvichak, Naknek, Egegik, and Ugashik River watersheds and the north Alaska Peninsula." I recognize that the Nushagak and Kvichak Rivers are our greatest concern in this analysis. However, there is an important omission in this tally of Bristol Bay watersheds: two extensive drainages just west of the Nushagak are not mentioned. Their rivers are the Wood and Igushik; all three rivers drain into Nushagak Bay.

The Wood River actually produced slightly more salmon than the Nushagak River this year (ADF&G, 2022a). In addition, salmon of the Wood River could be impacted if there were massive contamination in the Nushagak, since the mouths of the two rivers are right next to each other. The Wood and Igushik Rivers drain a large area that includes much of Wood-Tikchik State Park, with its string of large sockeye-rearing lakes.

Nushagak Bay:

The Nushagak River seems to be represented in the Proposed Determination as flowing directly into Bristol Bay. In fact, Nushagak Bay is the water body into which the Nushagak River flows (as do the Wood and Igushik Rivers). Nushagak Bay, in turn, debouches into Bristol Bay— but they are not the same water body. Nushagak Bay is officially named as such on NOAA nautical chart number 16322. .

One important distinction: Nushagak Bay is where the entire commercial fishery of the Nushagak District takes place. Commercial fishing throughout the bay is regulated by ADF&G, as shown on a map of the regulatory district (ADF&G, no date). Commercial fishing is not allowed in the Nushagak River; only sport and subsistence fishing take place there. (Occasional commercial fishing is opened in the lower Wood River to counteract overescapement; ADF&G, 2015).

I wish to characterize Nushagak Bay, in case you decide to add a little information on this important area. The upper strata in the bay are dominated by water from its rivers, even at high tide. Apparently no studies have been made of its salinity regime, but informally, commercial fishers throughout the bay report fresh water at and near the surface, even down near Bristol Bay. (Estuaries of this type are

common under appropriate conditions; NOAA, 2021). If pollution in the Nushagak River were carried into the bay, the toxins might affect fish without dilution, until the water reached Bristol Bay.

The waters of Nushagak Bay may be vital to anadromous fish that are associated with its rivers, during the period when they must acclimate to the different salinities of the ocean and rivers (Heifetz, J. et al., 1989).

EPA Response

For the purposes of the FD, the Wood and Igushik Rivers are considered part of the Nushagak River watershed, and both are specifically identified in Section 3.3.3.2 and Figure 3-14 of the FD. Consideration of estuarine conditions is outside the scope of the FD.

3.A.8 Conservation Committee; and National and Legislative Affairs Committee, Garden Club of America (Doc. #0188, p. 2)

We recognize that the EPA's 2017 National Water Quality Inventory "Report to Congress", states that about half of the lakes, reservoirs, ponds, bays, and estuaries and almost half of rivers and streams assessed in the United States are impaired by pollution and do not meet minimum water quality standards. The Bristol Bay watershed includes six major river basins and provides habitat for numerous animal species, 29 fishes, 190 birds and 40 mammals. This habitat and the watershed are in a pristine ecological state and the ecosystem, biological resources and landscape should be preserved and protected, now and for future generations.

EPA Response

EPA recognizes that the Bristol Bay watershed is an area of unparalleled ecological value, boasting wild salmon diversity and productivity unrivaled anywhere in North America. See Section 3 of the FD for more information about Bristol Bay's ecological resources. The administrative record supports EPA's FD. EPA has engaged in an open and transparent CWA Section 404(c) review process and, after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges of dredged or fill material evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas.

3.A.9 Bristol Bay Native Association (BBNA) (Doc. #0802, p. 2)

These protections need to include the watersheds of the North Fork Kaktuli, South Fork Kaktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon and aquatic resources, which are under threat from any development of the Pebble deposit. The Kaktuli River has been nominated for a Tier 3, Outstanding National Resource Water designation, as an acknowledgment of its exceptional water quality characteristics [Trout Unlimited, Oct. 19, 2009, Nomination of the Kaktuli River.].

EPA Response

See EPA's response to comment 3.A.8.

3.B Importance of Headwater Stream and Wetland Habitats to Fish

3.B.1 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 17)

Pg. 3-11: "Headwater streams and wetlands are abundant in the Pebble deposit area and likely play a crucial role in supporting local and downstream fish populations."

Given the excellent description of the importance of headwater streams throughout this section, the qualifier indicating headwater streams and wetlands "likely" play a crucial role should be eliminated.

EPA Response

EPA agrees, and this change has been made in the FD.

3.B.2 National Association of Wetland Managers (NAWM) (Doc. #0606, p. 3)

The proposed determination effectively summarizes why protecting these watersheds is critical to sustaining the local wild salmon populations:

Headwater streams and wetlands play a vital role in maintaining diverse, abundant fish populations—both by providing important fish habitat and by supplying the energy and other resources needed to support fishes in connected downstream habitats. Headwater streams and wetlands are abundant in the Pebble deposit area and likely play a crucial role in supporting local and downstream fish populations. [ibid. p. 3-11]

Through decades of research—and as synthesized in EPA's 2015 Connectivity Report [USEPA. 2015. Connectivity of Streams & Wetlands to Downstream Waters: A Review & Synthesis of the Scientific Evidence. EPA/600/R-14/475F. Office of Research and Development, Washington, DC.]—the scientific literature has documented the effect of small headwater streams, wetlands, and ephemeral waters in maintaining the chemical, physical, and biological integrity of larger downstream waters.

EPA Response

EPA agrees that by providing important fish habitat and supplying the energy and other resources needed to support fishes in connected downstream habitats, headwater streams and wetlands play crucial roles in supporting local and downstream fish populations. These points have been strengthened in the FD (Section 3.2.4).

3.B.3 Alaska Wildlife Alliance (AWA) (Doc. #0836, p. 7)

In addition to supporting genetically distinct salmon populations, the streams and wetlands draining the Pebble deposit area provide key habitat for numerous other fish species and supply water, invertebrates, organic matter, and other resources to downstream waters (Meyer et al. 2007, Colvin et al. 2019, Koenig et al. 2019). This is particularly true in dendritic stream networks like the SFK, NFK, and UTC systems, which have a high density of headwater streams. As a result, headwater streams and wetlands play a vital role in maintaining diverse, abundant anadromous fish populations—both by providing important fish habitat and supplying the energy and other resources needed to support anadromous fishes in connected downstream habitats.

EPA Response

See EPA's response to comment 3.B.2.

3.B.4 World Wildlife Fund (WWF) (Doc. #1739, p. 1)

As noted in the Proposed Determination, the waters draining the Pebble deposit area support genetically distinct salmon population segments and provide key habitat for numerous other fish species. These headwater streams play a vital role in sustaining diverse, abundant, and unique anadromous fish populations by providing important fish habitat and by supplying energy and nutrients to support fish populations in downstream habitats.

EPA Response

See EPA's response to comment 3.B.2.

3.B.5 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 16)

Pg. 3-6: "Results of the stream reach classification show that a high proportion of stream channels in the SFK, NFK, and UTC watersheds possess the broad geomorphic and hydrologic characteristics that create stream and river habitats highly suitable for fishes such as Pacific salmon, Rainbow Trout, and Dolly Varden: low stream gradients, mean annual streamflows greater than or equal to 5.3 ft³/s (0.15 m³/s), and at least 5 percent flatland in lowland (an indicator of the potential for floodplain development) (EPA 2014: Chapter 7)."

Comment: Moreover, salmon were documented in 3 of every 4 headwater streams sampled in the Pebble deposit area (Woody and O'Neal 2010 [Woody, C.A. and S.L. O'Neal. 2010. Fish surveys in headwater streams of the Nushagak and Kvichak River drainages, Bristol Bay, Alaska, 2008-2010. Prepared for the Nature Conservancy. Fisheries Research and Consulting. Anchorage, AK. 48 pp.]).

EPA Response

EPA recognizes the high proportion of streams used by fish of various species (96 percent of streams surveyed, as reported by Woody and O'Neal 2010; Section 3.2.4 of the FD).

3.B.6 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 20)

Pg. 3-62: "Wetlands provide essential off-channel habitats that protect young Coho Salmon and other resident and anadromous fish species, as well as provide spawning areas for Northern Pike."

Comment: Off-channel habitats providing protection and other important habitat features include not just wetlands, but also floodplains, beaver ponds, and other elements of intact watersheds.

EPA Response

EPA recognizes that floodplain and off-channel habitats, including beaver ponds, are important habitat components in all three watersheds (see Box 3-1 in the FD).

3.B.7 Environment America (Doc. #1746, p. 1)

Bristol Bay is home to one of the last strong salmon runs in the world. That is in part due to healthy and intact headwaters. The robust salmon runs underpin the biodiversity and health of the entire region.

EPA Response

EPA recognizes that the Bristol Bay watershed is an area of unparalleled ecological value, boasting salmon diversity and productivity unrivaled anywhere in North America. See Section 3 of the FD for more information about Bristol Bay's ecological resources.

3.B.8 City of Dillingham (Doc. #2667-1, p. 17)

It's critical to protect the headwaters of the rivers, and we urge that you do that now by finalizing the permanent protections, and do it by the end of 2022.

EPA Response

The administrative record supports EPA's decision to issue an FD that prohibits and restricts USACE's ability to specify certain waters of the United States within the SFK, NFK, and UTC watersheds as disposal sites for certain discharges of dredged or fill material, as described in Section 5 of the FD. Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas.

3.C Fish Resources: Species and Life Histories; Distribution and Abundance; Salmon and Marine-Derived Nutrients

3.C.1 U.S. Fish and Wildlife Service (Doc. #0161, p. 2)

The U.S. Fish and Wildlife Service (Service) trust resources, including anadromous fish, migratory birds, certain marine mammals, and threatened and endangered species, are found in the ecologically important Bristol Bay watershed, which supports world-class fisheries that are depended on by

commercial, recreation, and subsistence users. In addition to supporting major fisheries, Pacific salmon in Bristol Bay play an important role in the ecosystem by transferring large quantities of marine-derived nutrients from the marine environment into terrestrial and freshwater environments, which benefits wildlife, juvenile salmon, and the overall productivity, diversity, and physical structure of the ecosystem.

The Bristol Bay watershed, including the Nushagak and Kvichak Rivers, supports all five species of Pacific salmon (Chinook, Sockeye, Coho, Pink, and Chum), and several other commercially, recreationally, and ecologically important fish species. The Bristol Bay watershed is also home to brown bear, black bear, moose, caribou, wolves, waterfowl, and many other species of mammals and birds. The federally threatened northern sea otter and Steller's eider occur in the waters of the Cook Inlet, including Kamishak Bay (where they occur in relatively high abundance). Bald eagles commonly nest and feed along the coast and along all the major salmon spawning rivers in the Bristol Bay and Cook Inlet regions, and a relatively high number of golden eagles are found in the proposed project area. Migratory birds, including waterfowl, shorebirds, and landbirds are abundant throughout the proposed project area.

The Bristol Bay watershed supports the largest Sockeye salmon fishery in the world, is home to 25 federally recognized Tribal Governments and is a resource of national importance.

EPA Response

EPA recognizes that the Bristol Bay watershed is an area of unparalleled ecological value, boasting salmon diversity and productivity unrivaled anywhere in North America, supporting a diversity of other species and a wide array of human values. See Section 3 of the FD for more information about Bristol Bay's ecological resources and Section 6 for more information on other considerations, including tribal concerns and wildlife.

3.C.2 Alaska Wildlife Alliance (AWA) (Doc. #0836, pp. 2, 2-3)

{The Bristol Bay watershed provides habitat that supports incredible biodiversity, including 29 fish species, more than 190 bird species, and more than 40 terrestrial mammals (EPA, About Bristol Bay).} Chief among these resources is a world-class commercial and sport fishery for Pacific salmon and other important resident fishes. The Bristol Bay watershed, including the Nushagak and Kvichak Rivers, supports all five species of Pacific salmon (Chinook, Sockeye, Coho, Pink, and Chum), and several other commercially, recreationally, and ecologically important fish species. No hatchery fish are raised or released in the watershed - Bristol Bay's salmon populations are entirely wild. These fish are anadromous - hatching and rearing in freshwater systems, migrating to the sea to grow to adult size, and returning to freshwater systems to spawn and die.

(...)

Salmon are one component of this complex ecosystem. The U.S. Fish and Wildlife Service (Service) trust resources, including anadromous fish, migratory birds, certain marine mammals, and threatened and endangered species, are found in the ecologically important Bristol Bay watershed. In addition

to supporting major fisheries, Pacific salmon in Bristol Bay play an important role in the ecosystem by transferring large quantities of marine-derived nutrients from the marine environment into terrestrial and freshwater environments, which benefits wildlife, juvenile salmon, and the overall productivity, diversity, and physical structure of the ecosystem.

EPA Response

See EPA's response to comment 3.C.1.

3.C.3 Washington State Attorney General Office (Doc. #0183, pp. 1–2)

In 2014, EPA concluded that mining at the Pebble deposit would have unacceptable impacts on the Bristol Bay watershed and its salmon. [After extensive study and consultation with stakeholders, EPA published its Proposed Determination to Restrict the Use of an Area as a Disposal Site; Pebble Deposit Area, Southwest Alaska. 79 FR 42314, July 21, 2014. The 2014 Proposed Determination would have restricted discharge of dredged or fill material related to mining within the boundaries of the mining claims held by Northern Dynasty Minerals subsidiaries (the proponents of the Pebble Mine). Id.] In 2020, the Army Corps of Engineers reached the same conclusion, denying a permit for mining-related activity. [United States Army Corps of Engineers, Record of Decision for Application Submitted by Pebble Limited Partnership to USACE (Department of the Army Permit #POA-2017-00271) (November 2020).] And now, in 2022, EPA's detailed review [Since 2014, EPA has considered extensive new information including updated data on the Bristol Bay fishery resources, new scientific and technical publications, the Final Environmental Impact Statement on the 2020 Mine Plan, and more than 670,000 public comments. See Prop. Determination at A.3 ("Information Available Since Issuance of the 2014 Proposed Determination.")] once again compels the same conclusion: risking Bristol Bay and its unparalleled salmon runs for short-term, uncertain profits from mining simply doesn't make sense. [An independent review of the Pebble Mine proposal found that the project was likely to be unprofitable. Midgard Environmental Services, LLC, Review of the Pebble Mine Project Preliminary Economic Assessment 8 (December 2021).]

The Bristol Bay environment, from its headwaters to the ocean, is one of the last pristine salmon-bearing watersheds on Earth. [Prop. Determination at ES-1. Importantly, the Bristol Bay salmon runs are entirely wild; there are no hatcheries in the watershed. Id. at 3-2. Hatcheries are thought to threaten wild salmon populations, partly by competition with the natural stocks adapted to particular rivers. See Evenson, D. F., C. Habicht, M. Stopha, A. R. Munro, T. R. Meyers, and W. D. Templin. 2018. Salmon Hatcheries in Alaska - A Review of the Implementation of Plans, Permits, and Policies Designed to Provide Protection for Wild Stocks. Special Publication No. 18-12. Anchorage, AK: Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries.] Bristol Bay supports healthy runs of all five Pacific salmon species, including one of the largest remaining runs of Chinook salmon. [The Chinook run on the Nushagak River, one of the watersheds that would be affected by the proposed mining, is "at or near the size of the world's largest." Prop. Determination at 3-20.] The Bristol Bay fishery now generates

approximately half of the world's supply of wild sockeye salmon. [About Bristol Bay, EPA, <https://www.epa.gov/bristolbay/about-bristol-bay> (last visited June 21, 2022).]

EPA Response

See EPA's responses to comments 3.A.8 and 3.C.1.

3.C.4 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 1)

The Bristol Bay watershed is home to one of the largest wild sockeye salmon runs in the world and is the lifeline for the people of Bristol Bay and all those who depend on it. Bristol Bay's wild salmon have been the foundation of the region's Alaska Native cultures and traditions for thousands of years.

EPA Response

See EPA's responses to comments 3.A.8 and 3.C.1.

3.C.5 Environmental Protection Network (EPN) (Doc. #0857, p. 3)

The Proposed Determination has a fully developed discussion of the Bristol Bay watershed and the resource, and specific impacts that mining could have on the natural resources of the area, as well as the use of those resources by Alaskan Native subsistence fishermen and recreational and commercial fishermen. In addition to providing habitat for numerous fish, birds, and terrestrial mammals, the Bristol Bay watershed supports the production of all five species of Pacific salmon found in North America, including the sockeye. Bristol Bay's salmon populations are entirely anadromous. The salmon hatch and rear in the freshwater systems and migrate to the sea to grow to adult size, then return upstream to the freshwater systems to spawn and die. The watershed supports the largest wild sockeye salmon fishery in the world. Within the Bristol Bay watershed, approximately half of the sockeye salmon production is from the systems that would be impacted by the mine—the Nushagak River and Kvichak River watersheds.

(...)

The direct effects from placement of dredged and or fill material in the aquatic habitats as well as indirect effects those discharges may have on the rivers, streams, and wetlands would result in the total loss of aquatic habitats important to the anadromous fish population and these Native Alaskan cultures. The headwaters of the Nushagak and Kvichak river system provide important habitat areas as well as other ecosystem services that sustain the fisheries in Bristol Bay. Permanent destruction of the areas identified in the Proposed Determination would undoubtedly create unacceptable adverse effects on one of the world's most important salmon fisheries.[See Section 4, Proposed Determination.]

EPA Response

See EPA's responses to comments 3.A.8 and 3.C.1.

3.C.6 Center for American Progress (Doc. #0863, p. 1)

Bristol Bay is home to the world's largest sockeye salmon run, which supports over 15,000 jobs and contributes \$2 billion to the local economy annually. At a time when many other critical salmon runs in the state and country are drying up as a result of climate change and other impacts, Bristol Bay is an especially unique habitat with a major role in Alaskan life and an economy that must not be destroyed.

EPA Response

See EPA's responses to comments 3.C.1 and 3.E.1.

3.C.7 Friends of the Earth (Doc. #1751, p. 1)

This summer fishing season, Bristol Bay shattered records and celebrated the return of over 78 million sockeye salmon as well as all four other salmon species. Integral to that extraordinary run is the region's environmental sustainability—something the science unequivocally confirms that the proposed Pebble Mine would jeopardize. Bristol Bay is home to the world's largest wild sockeye salmon fishery, supplies 57 percent of the world's wild sockeye salmon, generates \$2.2 billion annually, and supports 15,000 American jobs.

But salmon are more than the economic engine of the region: Salmon is life in Bristol Bay. As they have for millennia, the wild salmon returning each year to Bristol Bay ensure Alaska Native communities' ways of life. Salmon feed its people, anchor its culture, sustain its wildlife, and are indispensable to both the practical and spiritual well-being of Bristol Bay's indigenous peoples

EPA Response

See EPA's responses to comments 3.C.1 and 3.E.1.

3.C.8 Dave Rogotzke (Doc. #2667-22, pp. 59–60)

And so today, here in the Keragian (phonetic) River, and here - they're all gone - or not all gone, but they're diminished runs. And here's the last intact salmon fishery in the world. And I am so grateful to be a part of it. And I thank you for all of the work that you have done to make it so that I can be part of it. And so the EPA - do your job, shut this thing down so that we can continue it for generations to come - my own children, the children of this community, and their great-grandchildren, and so on.

EPA Response

See EPA's responses to comments 3.C.1 and 3.E.1.

3.C.9 Daniel Schindler (Doc. #2667-31, p. 71)

I've worked on studying sockeye up here in Bristol Bay for over 25 years now. And I want to make three points.

First, it's not hyperbolic to say that there's only one Bristol Bay at the global scale. There is no other region that produces as many fish as reliably as Bristol Bay does.

EPA Response

See EPA's response to comment 3.C.1.

3.C.10 Bristol Bay Regional Seafood Development Association (Doc. #2664-15, p. 13)

The Bristol Bay Fishery is the largest salmon run in the world, largest red salmon run in the world, this year we're going to top over 70 million salmon. And this will continue if we just leave the watershed alone. So I just ask you to do what you can to protect the watershed.

EPA Response

See EPA's response to comment 3.C.1.

3.C.11 Mary Eckart (Doc. #2664-37, p. 27)

I'm a lifetime Alaskan. I grew up fishing in Bristol Bay with my entire family, and I just wanted to take the opportunity to say that I'd really like to see the EPA do their job and ensure permanent protection for Bristol Bay and the critical salmon runs there.

EPA Response

See EPA's response to comment 3.C.1.

3.C.12 Les Gara (Doc. #0132, p. 2)

Salmon are a crucial species of fish to Bristol Bay Residents, and fishing for subsistence, commercial and sport use. Legally, the impact on all important species of fish in these drainages must be considered. Nationally and locally important wild fish species that grow to magnificent sizes include wild rainbow trout, wild char, wild grayling and other fish which are important fish species to Alaskans and Americans who visit this region to catch those fish, or who just value salmon and non-salmon species of fish in their wild state.

EPA Response

See EPA's response to comment 3.C.1.

3.C.13 Cole Graham (Doc. #0212, p. 1)

The Bristol Bay salmon fishery, the largest of its kind in the world, supports 15,000 jobs and generates around \$2 billion in value annually. The Bay also sustains local communities as it has for thousands of years for indigenous Alaskans. In recent years the salmon runs in Bristol Bay have been bigger than ever – 62 million fish in 2018 and 66 million fish last summer, the largest run on record. The Alaska

Department of Fish and Game has forecasted another record setting run for this summer of 75 million fish

EPA Response

See EPA's response to comment 3.C.1.

3.C.14 Vivian Mendenhall (Doc. #1615, p. 2)

The importance of Nushagak salmon populations:

You have described the importance of Nushagak salmon to local residents, both Native and non-native, and to the sports and commercial fisheries. I will just mention the most recent fishery data.

Nushagak Bay contributed 39% of the total salmon run in Bristol Bay this year (ADF&G, 2022a). Bristol Bay, in turn, is a major part of the statewide fishery— in 2021, Bristol Bay contributed 74% to the statewide commercial sockeye salmon harvest (ADF&G 2021). (Most data summaries for Alaska outside of Bristol Bay are not yet available for 2022).

The Nushagak River contributes 3.46 million or 46% of the salmon populations that spawn each year in headwaters of the Nushagak Bay watershed. (The Wood River contributes 49%, and the Igushik River 1%; ADF&G, 2022a). The Nushagak River supports one of the main sports fisheries for chinook salmon. Chinooks are outnumbered in the Nushagak River by sockeyes— Chinook escapement was 44,434 in 2022, or 1.2% of the river's total salmon (ADF&G 2022a, b). Even so, the Nushagak's sport fishery for chinooks is a major industry in the area.

EPA Response

See EPA's response to comment 3.C.1.

3.C.15 Frances Nelson (Doc. #2667-21, p. 56)

Nushagak has always had healthy escapements and harvests. In the last few years, we have had record escapements and harvests. The salmon usually pass Koliganek through the main Channel, but there was salmon passing right in front of Koliganek in the shallows, the last couple years. If you walked in the Nushagak, you would have walked on top of salmon.

EPA Response

See EPA's response to comment 3.C.1.

3.C.16 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 19)

Pg. 3-50: "A total of 75.27 million Sockeye Salmon are forecast to return to Bristol Bay in 2022 (ADF&G 2021b)."

Comment: The run is now totaled at about 78.86 million sockeye salmon, with a harvest of about 60 million. In 2022, over half of run was composed of Nushagak and Kvichak salmon. The run total is an all-time high return since enumeration began (ADFG 2022d [ADFG. 2022d. Preliminary Inseason Estimates – Seasonal Totals, 2022 Bristol Bay – Harvest – Season to Date.

<https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.salmon.harvest>. Accessed 30 August 2022.], ADFG 2022e [ADFG. 2022e. Bristol Bay Salmon Escapement.

<https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.escapement>. Accessed 20 August 2022.]].

EPA Response

EPA added data about 2022 returns to Section 3 and Appendix B of the FD.

3.C.17 American Fisheries Society (AFS) and Alaska Chapter of AFS (Doc. #0813, p. 2)

Bristol Bay is home to the world's largest wild Sockeye Salmon fishery, supporting half the global catch (Cline et al. 2019; Tiernan et al. 2021). Along with Sockeye Salmon, Bristol Bay supports one of the largest wild Chinook Salmon runs as well as healthy runs of Coho Salmon, Chum Salmon, and Pink Salmon (Johnson and Blossom 2018).

(...)

High salmon production also brings marine-derived nutrients to the Bristol Bay watershed, providing crucial food sources through eggs and carcasses to a variety of aquatic and terrestrial wildlife (Cederholm et al. 2011; EPA 2014). Due to the cyclical nature of salmon life histories, it could take years before harm from a mine to salmon populations becomes detectable. Within that time, undetected irreparable harm could affect generations of salmon populations and have significant impacts on the people and wildlife that depend on them.

EPA Response

See EPA's response to comment 3.C.1. EPA added information to Appendix B of the FD related to the long timeframes that may be required to observe impacts.

3.C.18 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 17)

Pg. 3-19: "These types of prevalent interactions among species mean that impacts on any one fish species could affect the entire assemblage. "

Comment: This paragraph includes an excellent description of foodweb-mediated interactions between fishes, but it is important to also consider lower trophic levels (e.g., primary producers and invertebrates) in the discussion.

EPA Response

EPA added text noting that effects on lower trophic levels also should be considered (see Appendix B of the FD).

3.C.19 Anchorage Audubon Society (Doc. #0864, p. 1)

Salmon directly benefit other wildlife, including birds and mammals, providing food and nutrients throughout the watershed's ecosystems. Large predators (eagles, bears) eat salmon and may carry their prey well away from the river. Salmon that die after spawning fertilize the rivers and provide nutrients for many plants and invertebrates.

EPA Response

EPA recognizes the importance of salmon for other species, as discussed in Section 3 of the FD.

3.C.20 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 18)

Pg. 3-33: "This type of [aerial abundance estimate] survey is used primarily to track variation in run size over time. Survey values tend to underestimate true abundance: for example, USACE (2020a: Section 3.24) states that aerial surveys capture only an average of 18 percent of total abundance."

Comment: Woody (2012) wrote a comprehensive review of the shortcomings of PLP's aerial survey methods. In addition to shortcomings described by EPA in the PD, use of PLP data clearly leads to underestimation of impact to fishery areas from mining the Pebble deposit.

EPA Response

See EPA's response to comment 3.A.3.

3.C.21 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 18)

Pp. 3-25 – 3-32: Maps indicating documented distribution of salmon and some resident fishes in the Nushagak and Kvichak watersheds in addition to more specifically in the North Fork Koktuli, South Fork Koktuli, and Upper Talarik watersheds.

Comments: The statement made for maps illustrating resident fish distribution (Figures 3-3, 3-4, and 3-10) all include the caveat that "species absence cannot be inferred from this map." While the same is true for maps depicting anadromous salmon distribution (Figures 3-1, 3-2, and 3-5 through 3-9), EPA failed to incorporate the same information. This is crucial in underscoring that impacts to anadromous waters are underestimated in the PD.

EPA Response

EPA added an explanation of this point to all fish-distribution maps in Section 3.3.2 of the FD.

3.C.22 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, pp. 20–21)

Pp. 4-10 – 4-11: “Brennan et al. (2019) provide further support for this contention, demonstrating that the relative productivity of different portions of the Nushagak River varies over even relatively short (1- to 4-year) time frames for both Chinook and Sockeye salmon.”

Comment: While Dr. Brennan’s work indeed evaluated Nushagak River Chinook and sockeye salmon productivity, it’s relevance certainly extends to other Bristol Bay watersheds (including the Kvichak River) and beyond—throughout the North Pacific range of Pacific salmon.

EPA Response

EPA recognizes that the portfolio effect and associated spatial and temporal variability in the productivity of salmon populations extend beyond the Nushagak River watershed. Spatial and temporal variability of species and life-stage productivity is discussed in Section 3 and Appendix B of the FD.

3.C.23 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 17)

Pg. 3-6: “Of the Pacific salmon species, Coho Salmon are most likely to use small streams for spawning and rearing and have been observed in many of the smaller streams near the Pebble deposit.”

Comment: Indeed, coho Salmon have been observed about three-quarters of the smaller streams near the Pebble deposit (Woody and O’Neal 2010 [Woody, C.A. and S.L. O’Neal. 2010. Fish surveys in headwater streams of the Nushagak and Kvichak River drainages, Bristol Bay, Alaska, 2008-2010. Prepared for the Nature Conservancy. Fisheries Research and Consulting. Anchorage, AK. 48 pp.]).

EPA Response

EPA added the Woody and O’Neal 2010 citation to the FD.

3.C.24 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 19)

Pg. 3-38: “As a result, the loss of even a small, discrete population within the Bristol Bay watershed’s overall salmon populations may have more significant effects than expected, due to associated decreases in biocomplexity.”

Comment: See above discussion of 2022 low sockeye returns to Lake Clark in spite of a record return to Bristol Bay.

EPA Response

EPA discusses variability in salmon returns across watersheds within the Bristol Bay region in Section 3 of the FD.

3.C.25 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (BBFA) (Doc. #0830, pp. 22–23)

E. The 2022 PD appears to neglect recent studies of the "immunological imprinting hypothesis" which suggests that salmon also have fine-scale immunological fingerprints.

On behalf of my clients, I have reached out to Dr. Patty Zwollo, who operates a fisheries research laboratory at the College of William and Mary, in Williamsburg, Virginia. I understand that her work has advanced the "immunological imprinting hypothesis" for anadromous fish. To my understanding, her work on researching the immunological imprinting of anadromous fish is similar or related to what EPA's 2022 PD refers to as "fine-scale" population structure that arises due to habitat diversity and genetic diversity.

I have corresponded with Professor Zwollo, and she recommends three papers for EPA's review to see if the recent work since 2014 will strengthen and supplement the discussion of "fine-scale" population structures. The papers are:

1. Chappell, ME, Epp, L, and Zwollo, P. (2017). Sockeye Salmon Immunoglobulin Vh Usage And Pathogen Loads Differ Between Spawning Sites. *Dev. Comp. Immunol.* 77:297-306.
2. Zwollo, P. The Hum.oral Immune System of Anadromous Fish.(Review). (2018). *Dev. Comp. Immunol.* 80: 24-30.
3. Smith, MK and Zwollo, P. (2020). Transient increase in abundance of B lineage but not myeloid-lineage cells in anterior kidney of sockeye salmon during return migration to the natal grounds. *Fish & Shellfish Immunology*, Volume 107, Part A, December 2020, Pages 395-402.

As I understand, these research papers appear to support the hypothesis that different spawning sites demonstrate unique patterns of antibody usage, suggesting that the fish are responding to pathogens unique to those sites. This indicates that immunological differences, like genetic differences, and habitat differences, are all related to fine-scale population structures and the portfolio effect. If EPA concurs, then it should add the immunological aspect to the appropriate parts of the 2022 PD. Nevertheless, it appears that the evolving scientific understanding of immunological differences, like the evolving understanding of genetic differences and habitat differences, as they relate to population structures and the portfolio effect, all strengthen our position that EPA should be proposing standards stricter than, rather than weaker than, the 2014 PD.

EPA Response

EPA reviewed these citations and added relevant information to Section 3.3 of the FD.

3.D Biological Complexity and the Portfolio Effect; Region's Fisheries in a Global Context

3.D.1 American Fisheries Society (AFS) and Alaska Chapter of AFS (Doc. #0813, pp. 2–3)

In addition to the EPA's unacceptability findings, Pacific salmon are already facing very real threats from climate change throughout their ranges (Muñoz et al. 2019). Protecting the pristine waters of Bristol Bay is critical for maintaining their unique populations and their resilience to climate change (Cline et al. 2019). As temperatures continue to rise, it is likely that the hydrological conditions of the Bristol Bay watershed will change. Uncertainty in how they would change, and what that would mean for salmon, increases the magnitude of risks associated with the development of the Pebble Mine (Wobus et al. 2015). The high diversity of aquatic habitats and high quality of hydrological conditions in the Bristol Bay watershed has resulted in high degrees of phenotypic and genotypic diversity across the region's salmon populations (Hilborn et al. 2003; Schindler et al. 2010). The introduction of the mine would erode that resilience, threatening the salmon populations and everyone who depends on them (Muñoz et al. 2019)

EPA Response

EPA recognizes the importance of considering climate change in evaluating potential mine impacts (see Appendix B, Section B.6 of the FD).

3.D.2 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 16)

Pg. 3-3 "Lakes and associated tributary and outlet streams are key spawning and rearing areas for Sockeye Salmon."

Comment: While this is likely a major factor in the exceptional productivity of Bristol Bay sockeye populations, it is also crucial to note the importance of genetically distinct river rearing populations in the Nushagak and Kvichak drainages. River rearing sockeye may be more likely to colonize new habitats, crucial to maintaining population in light of climate change, etc. (Dann et al. 2012 [Dann, T.H., C. Habicht, J.R. Jasper, E.K.C. Fox, H.A. Hoyt, H.L. Liller, E.S. Lardizabal, P.A. Kuriscak, Z.D. Grauvogel, and W.D. Templin. 2012. Sockeye Salmon Baseline for the Western Alaska Salmon Stock Identification Project. Special Publication No. 12-12. Anchorage, AK: Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries.], Dann et al. 2013 [Dann, T. H., G. Buck, and B. Jones. 2018. Stock composition of subsistence harvests and total return of sockeye salmon from the Kvichak River. ADF&G Alaska Sustainable Salmon Grant Proposal Presentation, 148th Annual Meeting of the American Fisheries Society.]).

EPA Response

EPA recognizes the importance of river-type Sockeye Salmon and discusses this life-history strategy in Section 3 of the FD.

3.D.3 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 18)

Pg. 3-23: Figure 3-1 documenting Diversity of Pacific salmon species production in the Nushagak and Kvichak River watersheds.

Comment: While much of what the map presents likely reflects true species diversity, many watersheds where low diversity is indicated are likely a result of limited (to no) sampling effort in these remote basins that are difficult and costly to access. Consequently, the map overall likely underrepresents species diversity.

EPA Response

EPA added an explanation of this point to all fish-distribution maps in Section 3.3.2 of the FD.

3.D.4 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (BBFA) (Doc. #0830, pp. 5–11)

B. Based on the record, the 2022 PD should have proposed standards stronger than the 2014 PD but instead errs by proposing standards weaker than the 2014 PD.

The 2014 PD, at 4-8, only speculated that "headwater and beaver-modified habitats eliminated or dewatered by the Pebble 0.25 stage mine could support populations that are distinct from those using habitat farther downstream." The 2022 PD cites many scientific publications since 2014 that clarify the role that fine-scale population structure, due to habitat diversity and genetic diversity, plays in producing the portfolio effect. Those recent publications dominate the following thirteen excerpts of the 2022 PD and justify stricter limits, not weaker limits.

Recent analysis specific to the Nushagak River watershed underscores the important role that the streams, wetlands, lakes, and ponds across the entire Nushagak River watershed, including those that would be adversely affected by the 2020 Mine Plan, play in stabilizing the Nushagak River's productive Sockeye and Chinook salmon fisheries (Brennan et al. 2019). Similarly, both the Kaktuli River (the SFK and NFK are tributaries to the Kaktuli River) and UTC have been documented to support genetically distinct populations of Sockeye Salmon (Dann et al. 2012, Shedd et al. 2016, Dann et al. 2018). Loss of salmon habitats and associated salmon diversity in the SFK, NFK, and UTC watersheds would erode both the habitat complexity and biocomplexity that help buffer these populations from sudden and extreme changes in abundance and ultimately maintain their productivity. [2022 PD at ES-11.]

Bristol Bay is home to the largest Sockeye Salmon fishery in the world (Section 3.3.5). Sockeye Salmon from Bristol Bay produce relatively consistent returns due to the high degree of population diversity

found within both the species and the region (Hilborn et al. 2003, Wood et al. 2008, Schindler et al. 2010, Schindler et al. 2015, Moore et al. 2021). A major component of this population diversity is associated with the diversity of habitats used for spawning, which has resulted in the formation of distinct spawning ecotypes (Figure 3-11) (Quinn et al. 1995, Lin et al. 2008, Dann et al. 2012, Larson et al. 2017, Schindler et al. 2018). [2022 PD at 3-39.]

The river-type form of Sockeye Salmon is relatively rare in Bristol Bay (Wood et al. 2008) but is found in the Nushagak River watershed, including in the Kaktuli River (Dann et al. 2012). River-type Sockeye Salmon represent an important form of genetic diversity, as these populations typically exhibit greater diversity within and less diversity among populations than the more abundant lake-type sockeye salmon (Larson et al. 2019). Given that river-type Sockeye Salmon have a greater tendency to stray from natal areas and are, thus, considered the colonizers of the species (Wood 1995, Wood et al. 2008), this within-population genetic diversity can help "seed" new freshwater habitats that become available as glaciers recede (e.g., due to climate change) (Pitman et al. 2020). [2022 PD at 3-43. The river-type form of Sockeye Salmon appears to be present within the proposed defined area of both the 2014 PD and the 2022 PD. See 2022 PD at 3-29 (Figure 3-7).]

Baseline genetic research suggests that other Bristol Bay fisheries, in addition to Sockeye Salmon, may also be stabilized by the portfolio effect; however, genetic baselines for these other species are not currently as advanced as they are for Sockeye Salmon. Coho Salmon in western Alaska tend to occur in smaller, more isolated populations (Olsen et al. 2003). Thus, Coho Salmon may have higher rates of genetic differentiation than nearby populations of other salmon species (e.g., Chum Salmon) in this region, and the loss of Coho Salmon populations may be more likely to translate to loss of significant amounts of overall genetic variability (Olsen et al. 2003, Schindler et al. 2018). Chinook Salmon populations also tend to be relatively small (Healey 1991) and exhibit a diversity of life history traits (e.g., variations in size and age at migration, duration of freshwater and estuarine residency, time of ocean entry) (Lindley et al. 2009). Chinook populations in the Togiak River exhibit differences in spawning habitats (mainstem versus tributary) and migration timing, which translate to a clear stock structure (Sethi and Tanner 2014, Clark et al. 2015). Radio telemetry, tagging, and genetic studies also indicate that multiple rainbow trout populations are found in the Bristol Bay watershed (Burger and Gwartney 1986, Minard et al. 1992, Krueger et al. 1999, Meka et al. 2003, Dye and Borden 2018). [2022 PD at 3-47.]

The potential for fine-scale population structuring of salmon fisheries, particularly in terms of Sockeye and Coho salmon, exists throughout the entire Bristol Bay watershed. Finer-scale habitats can sustain unique, genetically distinct populations, each of which helps to maintain the integrity of overall salmon stocks across the Bristol Bay watershed and contributes to the overall resilience of these stocks to perturbation. For example, Sockeye Salmon that use spring-fed ponds and streams as close as approximately 0.6 mile (1 km) apart exhibit differences in traits (e.g., spawn timing, spawn site fidelity, and productivity) that suggest they may comprise discrete populations (Rand et al. 2007, Ramstad et al. 2010, Quinn et al. 2012). Genetic population structure also occurs at a fine geographic scale for Coho Salmon, with many populations found in small first- and second-order headwater streams (Olsen et al.

2003). The ability of Bristol Bay to sustain diverse salmon populations is, therefore, dependent on sustaining the viability of the vast network of unique habitats at small spatial scales across the landscape. This suggests that even the loss of a small population within the Bristol Bay watershed's overall salmon populations may have more significant effects than expected, due to associated loss of genetic and phenotypic diversity of a discrete population (Schindler et al. 2010, Moore et al. 2014, Waples and Lindley 2018). [2022 PD at 3-47 -3-48.]

In summary, a substantial body of research supports the conclusion that a diversity of habitats is necessary for maintaining locally adapted populations that create a stock portfolio of individual species. The multiple, genetically distinct populations of Sockeye Salmon that have been documented in the SFK, NFK, and UTC watersheds contribute to the region's wild salmon portfolio. It is clear from the evolving understanding of the stabilizing effects of the salmon portfolio that the conservation of habitat diversity, which leads to locally adapted population diversity across the landscape, is critical to achieve and maintain the sustainability of Bristol Bay's salmon populations. [2022 PD at 3-48.]

Pacific salmon exhibit high fidelity to their natal spawning and rearing environments resulting in genetic variation among discrete populations (Quinn 2005). The existence of discrete, genetically distinct salmon populations has been well-documented in the Bristol Bay watershed (Olsen et al. 2003, Ramstad et al. 2010, Quinn et al. 2012, Dann et al. 2012, Shedd et al. 2016, Brennan et al. 2019, Raborn and Link 2022). Both the Koktuli River (including the SFK and NFK) and UTC are known to support genetically distinct populations of Sockeye Salmon (Dann et al. 2012, Shedd et al. 2016, Dann et al. 2018). Research has shown that these distinct populations can occur at very fine geographic scales (Section 3.3.3). For example, Sockeye Salmon that use spring-fed ponds and streams as close as approximately 0.6 mile (1 km) apart exhibit differences in traits (e.g., spawn timing, spawn site fidelity, and productivity), which suggests they may comprise discrete populations (Rand et al. 2007, Ramstad et al. 2010, Quinn et al. 2012). [2022 PD at 4-9.]

Research on the presence of genetically distinct populations of Coho and Chinook salmon in Alaska is ongoing, and existing evidence suggests that local adaptation and fine-scale population structure likely exist for these species as well (Olsen et al. 2003, Sethi and Tanner 2014, Clark et al. 2015). [Footnote omitted] Similar patterns of genetic variation among species (across a landscape) emphasize the vital importance that landscape heterogeneity (i.e., habitat complexity across the intact ecosystem) plays in determining genetic structure (Ackerman et al. 2013). [2022 PD at 4-9. The footnote explains: "Advances in genomics and other techniques are allowing detection of genetic structure at increasingly fine scales; as methods to evaluate these genetic differences improve, researchers are uncovering more fine-scaled population structure in many salmon species (Meek et al. 2020)."]

Coho and Chinook salmon are the two rarest of North America's five species of Pacific salmon (Healey 1991, Woody 2018) and are particularly vulnerable to losses of small, discrete populations. [2022 PD at 4-9.]

Olsen et al. (2003) summarize the implications of Coho Salmon population structuring at fine geographic scales for conservation of the species:

Fishery management and conservation actions affecting Coho salmon in Alaska must recognize that the genetic population structure of coho salmon occurs on a fine geographic scale. Activities or conditions that cause declines in population abundance are more likely to have strong negative impacts for coho than for species in which genetic variation is distributed over a broader geographic scale (e.g., chum salmon). Coho salmon are probably more susceptible to extirpation, less likely to be augmented or "rescued" by other populations through straying (gene flow), and the loss of populations means loss of significant amounts of overall genetic variability. These risks underscore the importance of single populations to the long term viability of coho salmon in Alaska and justify managing and conserving coho salmon at a fine geographic scale. [Citing Olsen et al. (2003) at page 568] [Emphasis added in 2022 PD] [2022 PD at 4-10.]

Chinook Salmon populations also tend to be relatively small (Healey 1991) and exhibit a diversity of life history traits (e.g., variations in size and age at migration, duration of freshwater and estuarine residency, time of ocean entry) (Lindley et al. 2009). Chinook Salmon populations in the Togiak River exhibit differences in spawning habitats (mainstem versus tributary) and migration timing, which translate to a clear stock structure (Sethi and Tanner 2014, Clark et al. 2015). Patterns of genetic differentiation between upstream and downstream populations along the same river network have also been found for other salmonids (Olsen et al. 2011, Ackerman et al. 2013, Barclay and Habicht 2019, Miettinen et al. 2021). Chinook Salmon populations in western Alaska similarly show fine-scale population differences across the four major regions (Norton Sound, the Yukon River, the Kuskokwim River, and Bristol Bay). This finding supports the contention that discrete Chinook Salmon populations likely exist in this region, which includes the Kaktuli River (Larson et al. 2014, McKinney et al. 2020). Brennan et al. (2019) provide further support for this contention, demonstrating that the relative productivity of different portions of the Nushagak River varies over even relatively short 0- to 4-year) time frames for both Chinook and Sockeye salmon. [2022 PD at 4-10 - 4-11.]

Because Coho and Chinook salmon spend longer periods of time rearing in the freshwater streams that would be permanently eliminated by the discharge of dredged or fill] material associated with the 2020 Mine Plan, these species are more susceptible to losses of what are likely small, discrete populations. The importance of maintaining this diversity among populations (e.g., in terms of migration timing, other life history traits, and genetic composition) for long-term population persistence and sustainability has been well-documented (Moore et al. 2014, Schindler et al. 2010, Brennan et al. 2019, Davis and Schindler 2021). [2022 PD at 4-11.]

EPA Region 10 believes that the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan, resulting in the loss of approximately 8.5 miles (13.7 km) of anadromous fish streams, could have unacceptable adverse effects on anadromous fishery areas in the NFK watershed. This conclusion is based on the following factors: the large amount of permanent loss of anadromous fish habitat (including spawning and breeding areas); the particular importance of the permanently lost habitat for juvenile Coho and Chinook salmon; the degradation of additional downstream spawning and rearing habitat for Coho, Chinook, and Sockeye salmon due to the loss of ecological subsidies provided by the eliminated anadromous fish streams; and the resulting erosion of

both habitat complexity and biocomplexity within the NFK watershed, which are key to the abundance and stability of salmon populations within this watershed. [2022 PD at 4-18.]

These excerpts, which describe the evolving science related to the role that fine-scale population structure, due to habitat diversity and genetic diversity, plays in producing the portfolio effect, imply that the 2022 PD errs by proposing standards weaker than those of the 2014 PD, when the 2022 PD should be proposing standards stronger than those of the 2014 PD. The following table builds on the initial table to offer suggestions for how to frame limits that are consistent with the above excerpts related to the role that fine-scale population structure, due to habitat diversity and genetic diversity, plays in producing the portfolio effect.

[Table included here with original submission.]

[Our first four recommended limits reflect excerpts above. The following concisely addresses fine-scale population structure, fine-scale habitats, fine geographic scale, and genetic diversity. The potential for fine-scale population structuring of salmon fisheries, particularly in terms of Sockeye and Coho salmon, exists throughout the entire Bristol Bay watershed. Finer-scale habitats can sustain unique, genetically distinct populations, each of which helps to maintain the integrity of overall salmon stocks across the Bristol Bay watershed and contributes to the overall resilience of these stocks to perturbation. For example, Sockeye Salmon that use spring-fed ponds and streams as close as approximately 0.6 mile (1 km) apart exhibit differences in traits (e.g., spawn timing, spawn site fidelity, and productivity) that suggest they may comprise discrete populations (Rand et al. 2007, Ramstad et al. 2010, Quinn et al. 2012). Genetic population structure also occurs at a fine geographic scale for Coho Salmon, with many populations found in small first- and second-order headwater streams (Olsen et al. 2003). The ability of Bristol Bay to sustain diverse salmon populations is, therefore, dependent on sustaining the viability of the vast network of unique habitats at small spatial scales across the landscape. This suggests that even the loss of a small population within the Bristol Bay watershed's overall salmon populations may have more significant effects than expected, due to associated loss of genetic and phenotypic diversity of a discrete population (Schindler et al. 2010, Moore et al. 2014, Waples and Lindley 2018). [Italics added]]

The foregoing excerpts of the 2022 PD cite over forty different professional articles published since 1991 for purposes of explaining role that fine-scale population structure, due to habitat diversity and genetic diversity, plays in producing the portfolio effect, and the majority of those articles have been published since 2014. The recent professional literature apparently reflects that the scientific understanding of fine-scale population structures, due to habitat diversity and genetic diversity, is progressing. Such professional literature supports or implies support for standards that are stronger than those proposed in the 2014 PD and much stronger than those proposed in the 2022 PD.

The only measures of spatial differences in genetic diversity stated in the 2022 PD are that sockeye salmon can be distinct at distances of approximately 0.6 mile apart, and that the genetic population structure for coho salmon also occurs at a fine geographic scale. By comparison, the 2022 PD cites no articles, not one, which supports standards weaker than those of the 2014 PD, let alone to the extent that the 2022 PD proposes vastly weaker standards.

Therefore, EVC and BBFA's first four recommended limits, which are numerical, are based on the record that sockeye salmon can be distinct at approximately 0.6 miles apart, and that the genetic population structure for coho salmon also occurs at a fine geographic scale.

EPA Response

See EPA's response to comment 7.0.1. EPA agrees that the scientific evidence supports the conclusion that finer-scale habitats sustain unique, genetically distinct salmon populations that contribute to the overall resilience of the stock portfolio. This genetic diversity is shaped by salmon life-history characteristics, fine-scale differences in habitat characteristics, and the spatial patterning and connectivity of these habitats across the landscape. Genetically diverse salmon populations have been documented to occur in close proximity to each other (e.g., within 0.6 mile), where habitat heterogeneity and complexity are high (see Section 3.3.3 of the FD). However, geographic distances between genetically diverse salmon populations are not uniform and cannot be assumed to be consistent across habitats of variable and high complexity. The current science also supports the conclusion that reduced habitat heterogeneity and complexity contribute to reduced genetic diversity of salmon populations (see Section 3.3.3 of the FD).

3.D.5 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 12)

The Bristol Bay region is vast, containing approximately 40 million acres of land and water.[See BBNC, [http://www.bbnc.net/our-corporation/land/maps/.](http://www.bbnc.net/our-corporation/land/maps/)] It contains myriad mountains, rivers, lakes, wetlands, and marine waters.[See id.] 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.[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.”).] 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.[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 3-49 to 3-52, available at https://www.epa.gov/sites/production/files/2014-07/documents/pebble_pd_071714_final.pdf [hereinafter “2014 Proposed Determination” or “2014 PD”] and 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 (May 2022), available at: <https://www.epa.gov/bristolbay/2022-proposed-determination-pebble-deposit-area> [hereinafter “2022 PD”]. See also Schindler, Daniel E., et al., Population Diversity and the Portfolio Effect in an Exploited Species, 465 NATURE 609 (June 3, 2010), available at <http://www.nature.com/nature/journal/v465/n7298/full/nature09060.html>.] For generations upon generations, tens of millions of salmon reliably return to Bristol Bay.[See id.]

EPA Response

See EPA's response to comment 3.A.1.

3.D.6 Alaska Wildlife Alliance (AWA) (Doc. #0836, pp. 6–7)

As recognized in the FEIS, all instances of complete loss of aquatic habitat and most impairment to fish habitat function would be permanent. Although Alaska has many streams and wetlands that support salmon, individual streams, stream reaches, wetlands, lakes, and ponds play a critical role in supporting individual salmon populations and protecting the genetic diversity of Bristol Bay's wild salmon populations. The diverse array of watershed features across the region creates and sustains a diversity of aquatic habitats that support multiple populations of salmon with asynchronous run timings and habitat use patterns (i.e., biocomplexity, after Hilborn et al. 2003). These population differences are reflected in salmon genetic diversity and adaptation to local conditions within Bristol Bay's component watersheds (e.g., Quinn et al. 2012) and provide stability to the overall system (Schindler et al. 2010).

Impacts of the 2020 Mine Plan are concentrated in the SFK and NFK watersheds, which are a part of the Nushagak River watershed. Recent analysis specific to the Nushagak River watershed underscores the important role that the streams, wetlands, lakes, and ponds across the entire Nushagak River watershed, including those that would be adversely affected by the 2020 Mine Plan, play in stabilizing the Nushagak River's productive Sockeye and Chinook salmon fisheries (Brennan et al. 2019). Similarly, both the Kaktuli River (the SFK and NFK are tributaries to the Kaktuli River) and UTC have been documented to support genetically distinct populations of Sockeye Salmon (Dann et al. 2012, Shedd et al. 2016, Dann et al. 2018). Loss of salmon habitats and associated salmon diversity in the SFK, NFK, and UTC watersheds would erode both the habitat complexity and biocomplexity that help buffer these populations from sudden and extreme changes in abundance and ultimately maintain their productivity.

EPA Response

See EPA's response to comment 3.A.8.

3.D.7 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, pp. 1–2)

The Bristol Bay region comprises approximately 40 million acres of land and water. It contains mountains, rivers, lakes, wetlands, and marine waters. Much of the region lies within the Bristol Bay watershed- a network of creeks and streams that produce large numbers of locally-adapted and genetically distinct populations of salmon that help ensure the long-term health and stability of salmon stocks across the watershed.

Bristol Bay is home to our nation's most productive and valuable wild salmon fishery, sustaining Alaska Native cultures and traditions, a \$1.5 billion commercial salmon fishery, and a world class sportfishing destination for anglers from across the world. Our fishery has shown itself to be resilient in the face of a changing climate, owing to the genetic diversity of Bristol Bay wild salmon. For generations upon generations, tens of millions of salmon reliably return to Bristol Bay.

EPA Response

See EPA's response to comment 3.A.8.

3.D.8 Friends of the Earth US (Doc. #2667-38, pp. 89–90)

Collectively for a cause, millions of Americans have urged EPA to reject this permit, and place even more protections for the Bristol Bay watersheds that is a national and international treasure, that has consistently provided over half - the world's - half of the world's wild sockeye salmon. So this is in the public interest.

EPA Response

See EPA's response to comment 3.A.8.

3.D.9 Alaska Environment (Doc. #2664-10, pp. 9–10)

And one of the most incredible things is the robust salmon run. World over, most salmon runs are struggling, we see this in Alaska, the west coast, the east coast, and globally. And one of the reasons that the Bristol Bay salmon run is still so abundant and healthy is that the numerous headwaters are all intact.

(...)

The region is graced by the absence of mines, dams, and roads, and the sockeye salmon can successfully swim to their spawning grounds each year. And when climate change or other factors inevitably make any particular spawning ground less suitable one year, the large intact ecosystems provides enough options to maintain healthy populations. Any industrial mining will compromise the salmon run and that in turn, will hurt the ecosystem as a whole because salmon are a keystone species. Bottom line, it's a bad place to mine and Bristol Bay should be fully and permanently protected. The people of the region, Alaska and the country, have clearly advocated many times that the Pebble Mine should be vetoed in its entirety. It's time to lay this issue to rest with permanent and full protections.

EPA Response

See EPA's response to comment 3.A.8.

3.D.10 Kyra Chandler (Doc. #2664-26, p. 21)

I am a hobby angler, and an avid outdoor enthusiast. Bristol Bay is a world treasure. It is a biodiversity hotspot, and is one of the last remaining intact salmon runs on the planet. We can't lose it. Please put the strongest protections in place to ensure that Pebble Mine can never, ever create an open pit mine in this incredibly valuable ecosystem.

EPA Response

See EPA's response to comment 3.A.8.

3.D.11 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, pp. 19–20)

Pg. 3-51: “This frequently places the Nushagak River at or near the size of the world’s largest Chinook Salmon runs, which is notable given the Nushagak River’s small watershed area compared to other Chinook-producing rivers (EPA 2014: Chapter 5).”

Comment: Again, this makes the Nushagak Chinook run essential to global conservation of the species as they decline worldwide.

EPA Response

See EPA’s response to comment 3.A.8.

3.D.12 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, pp. 9–10)

Some general strengths of the PD as written include:

* The descriptions of the importance of and impacts to headwater streams, biocomplexity, and the portfolio effect are greatly improved, expanded, and updated relative to the 2014 Bristol Bay Watershed Assessment (BBWA) and the 2014 PD. In particular, EPA’s summary of biocomplexity and the portfolio effect are the most thorough I’ve seen in any peer- reviewed, government, or other gray literature. They clearly support the conclusion that unacceptable adverse effects would result from mine development.

EPA Response

See EPA’s response to comment 3.A.8.

3.D.13 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 18)

Pg. 3-20: “Tributaries to Iliamna Lake, Lake Clark, and, in the Nushagak River watershed, the Wood-Tikchik Lakes are major Sockeye Salmon spawning areas, and juveniles rear in each of these lakes.”

Comment: It is worth noting that despite an all time record sockeye return in Bristol Bay in 2022, Lake Clark sockeye returned in their second lowest numbers since 2000 according to Lake Clark National Park data collection (NPS 2022 [NPS (National Park Service). 2022. Monitoring Sockeye Salmon.

<https://www.nps.gov/lacl/learn/nature/monitoring-sockeye-salmon.htm>. Accessed 29 August, 2022.

Adult sockeye counts since 2000 can be found at the site linked on the NPS website:

https://docs.google.com/spreadsheets/d/1Wf6EPFac9W1FGD696b4fSM4n_I22TiDjx2VYzKHDLtc/edit#gid=659333007. Also Accessed 29 August, 2022.]). This serves as one of a myriad of examples of the

importance of biocomplexity and the portfolio effect described thoroughly in other sections of the PD.

Given the proximity of Lake Clark to the Pebble deposit and the road corridor proposed to cross the Newhalen River directly downstream of Lake Clark, it is also highlights the high potential for impacts of

mining and associated activities to have disproportionate, and possibly population-level impacts during entirely unpredictable years of low returns.

EPA Response

EPA recognizes that the Lake Clark Sockeye Salmon returns are a contributor to the region's stock portfolio (see Section 3.3.3 of the FD) that are in proximity to the Pebble deposit and the proposed road corridor.

3.D.14 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, pp. 17–18)

Pg. 3-20: "Chinook Salmon returns to the Nushagak River are consistently greater than 100,000 fish per year and have exceeded 200,000 fish per year in 11 years between 1966 and 2010, which places the Nushagak River at or near the size of the world's largest Chinook Salmon runs (EPA 2014: Chapter 5)."

Comment: This is especially important to note in the context of global declines of Chinook salmon causing subsistence fishery closures on the Yukon and Kuskokwim rivers for example, and attributed to declines in Puget Sound, Washington resident killer whale populations (ADFG 2022a [ADFG (Alaska Department of Fish and Game). 2022a. Kuskokwim River Salmon Fishery Announcement #3, Emergency Order #3-S-WR-03-22. Issued June 9, 2022.

<https://www.adfg.alaska.gov/static/applications/dcfnewsrelease/1378720105.pdf>. Accessed 27 August, 2022.], ADFG 2022b [ADFG. 2022b. Yukon River Drainage Closed to Sport Fishing for King Salmon. Division of Sport Fish Emergency Order No. 3-KS-Y-4_2022. Issued April 14, 2022.

<https://www.adfg.alaska.gov/Static-sf/EONR/PDFs/2022/R3/3-KS-Y-4-22.pdf>. Accessed 27 August, 2022.], ADFG 2022c [ADFG. 2022c. 2022 Yukon River Salmon Summer Fisher Announcement #13; District 6 (Tanana River) Subsistence and Personal Use Fishing Schedule. Division of Sport Fish Advisory Order #13. Issued June 17, 2022.

<https://www.adfg.alaska.gov/static/applications/dcfnewsrelease/1382825665.pdf>. Accessed 27 August, 2022.], Couture et al. 2022 [Couture F., G. Oldford, V. Christensen, L. Barrett-Lennard, and C. Walters. 2022. Requirements and availability of prey for northeastern pacific southern resident killer whales. PLoS ONE 17: e0270523. <https://doi.org/10.1371/journal.pone.0270523>.], USFWS 2022 [USFWS (US Fish and Wildlife Service). 2022. Federal Waters of District 6 of the Yukon River Closed to Subsistence Salmon Fishing. Emergency special action no. 2-KS-09-22.

<https://www.doi.gov/subsistence/news/fishing/federal-waters-district-6-yukon-river-closed-subsistence-salmon-fishing>. Accessed 28 August, 2022.]].

EPA Response

See EPA's response to comment 3.A.5.

3.E Commercial Fisheries, Subsistence Fisheries, Recreational Fisheries

3.E.1 Bristol Bay Native Corporation (BBNC) (Doc. #0191, p. 1)

Bristol Bay is home to the largest wild sockeye salmon runs in the world and it is the lifeline for the people of the region and all those who depend on it. Bristol Bay's wild salmon have been the foundation of Alaska Native subsistence, culture, and traditions in the region for thousands of years. Bristol Bay is a national treasure, producing half of the world's commercial supply of wild sockeye salmon, sustaining 15,000 annual jobs, and generating roughly \$2.2 billion in annual economic activity.

EPA Response

EPA recognizes the ecological value and importance of the Bristol Bay region's wild salmon populations, particularly for Alaska Native subsistence, culture, and traditions. EPA also recognizes that the region's wild salmon populations provide a significant source of economic value (see Sections 3, 4, and 6 of the FD).

3.E.2 United Tribes of Bristol Bay (Doc. #0109, pp. 1–2)

For years, the proposed Pebble Mine has created uncertainty for those who depend on Bristol Bay for their livelihoods—including thousands of Tribal members living a traditional subsistence way of life and our world-class commercial and sport fisheries which provide 15,000 jobs and \$2.2 billion in annual revenue to the American economy. If the Pebble Mine is constructed, all of that would be jeopardized.

The Tribal people of Bristol Bay and those whose livelihoods depend on its waters have dealt with uncertainty from the threat of the Pebble Mine for far too long. It's time for the EPA to finish the job, without delay.

EPA Response

See EPA's response to comment 3.E.1.

3.E.3 Seafood Harvesters of America (Doc. #0811, pp. 1–2)

Bristol Bay's wild salmon provide a vital lifeline for the people of the region and have served as the foundation of Alaska Native subsistence, culture, and traditions for thousands of years. What's more, Bristol Bay's wild salmon support a renewable economic engine that drives Alaska's economy and supports a variety of businesses around the country, including commercial fishing, tourism, food service and recreation. The wild salmon found in Bristol Bay waters provide income for thousands of businesses, support 15,000 jobs and generate approximately \$2.2 billion in annual economic activity. In 2021 alone, Bristol Bay contributed more than half (57 percent) of the world's wild salmon harvest.

EPA Response

See EPA's response to comment 3.E.1.

3.E.4 Mass Mailing Campaign (Doc. #2540, p. 1)

Bristol Bay is home to the world's largest wild sockeye salmon fishery. It generates \$2.2 billion annually, supports 15,000 American jobs, supplies 57 percent of the world's wild sockeye salmon, and sustains Indigenous communities as it has since time immemorial. The wild salmon returning each year to Bristol Bay ensure a way of life for Alaska Native communities, providing subsistence food, subsistence-based livelihoods, and the lifeblood of culture.

EPA Response

See EPA's response to comment 3.E.1.

3.E.5 United Tribes of Bristol Bay (Doc. #0140, p. 1)

The Bristol Bay watershed is more than just home for the largest wild sockeye salmon runs in the world, it is the lifeline for the people of Bristol Bay and all those who depend on it. Bristol Bay's wild salmon have been the foundation of Alaska Native culture in the region for thousands of years and continues to support the largest wild salmon commercial fishery on earth, producing half of the world's commercial supply of wild sockeye salmon, sustaining 15,000 annual jobs, and generating roughly \$2.2 billion in annual economic activity.

EPA Response

See EPA's response to comment 3.E.1.

3.E.6 United Tribes of Bristol Bay (Doc. #0615, p. 1)

The Bristol Bay watershed is more than just home for the largest wild sockeye salmon runs in the world; it is the lifeline for the Native people of Bristol Bay and all those who depend on it. Bristol Bay's wild salmon have been the foundation of Alaska Native cultures in the region for thousands of years and continues to produce half of the world's commercial supply of wild sockeye salmon, sustaining 15,000 annual jobs, and generating roughly \$2.2 billion in annual economic activity.

EPA Response

See EPA's response to comment 3.E.1.

3.E.7 Choggiung Limited (Doc. #0815, p. 1)

The Bristol Bay watershed is more than just home for the largest wild sockeye salmon runs in the world, it is the lifeline for the people of Bristol Bay and all those who depend on it. Bristol Bay's wild salmon have been the foundation of Alaska Native culture in the region for thousands of years and continues to support the largest wild salmon commercial fishery on earth, producing half of the world's commercial supply of wild sockeye salmon, sustaining 15,000 annual jobs, and generating roughly \$2.2 billion in annual economic activity.

EPA Response

See EPA's response to comment 3.E.1.

3.E.8 United Tribes of Bristol Bay (UTBB) (Doc. #0823, p. 1)

The Bristol Bay watershed is more than just home for the largest wild sockeye salmon runs in the world, it is the lifeline for the people of Bristol Bay and all those who depend on it. Bristol Bay's wild salmon have been the foundation of Alaska Native culture in the region for thousands of years and continues to support the largest wild salmon commercial fishery on earth, producing half of the world's commercial supply of wild sockeye salmon, sustaining 15,000 annual jobs, and generating roughly \$2.2 billion in annual economic activity. As such, EPA must move forward with the section 404(c) process to ensure this national treasure is protected forever.

EPA Response

See EPA's response to comment 3.E.1.

3.E.9 Natural Resources Defense Council (NRDC) (Doc. #1744, p. 1)

Bristol Bay is home to the greatest wild salmon fishery on the planet, supplying half of the world's sockeye salmon, supporting 15,000 jobs, generating \$2.2 billion annually, and sustaining Alaska Native communities for thousands of years. But the Bristol Bay watershed is more than just home for the largest wild sockeye salmon runs in the world. It is the economic and cultural lifeline for the people of Bristol Bay and all those who depend on it.

EPA Response

See EPA's response to comment 3.E.1.

3.E.10 Commercial Fishermen for Bristol Bay (Doc. #2559, p. 1)

Bristol Bay, Alaska, is home to a \$2.2 billion annual salmon fishery that provides 15,000 jobs and supplies 50% of the world's sockeye salmon. The science is clear. If built, Pebble Mine would permanently poison Bristol Bay's waters and imperil the greatest wild salmon fishery left on Earth.

EPA Response

See EPA's response to comment 3.E.1.

3.E.11 Cook Inletkeeper (Doc. #0794, p. 1)

Bristol Bay, Alaska is home to a \$2.2 billion annual salmon fishery that provides 5,000 jobs and supplies 50% of the world's sockeye salmon. The Bristol Bay watershed is more than just home for the largest wild sockeye salmon runs in the world, it is the lifeline for the people of Bristol Bay and all those who depend on it. The science is clear. If built, Pebble Mine would permanently poison Bristol Bay's waters and imperil the greatest wild salmon fishery left on Earth.

EPA Response

See EPA's response to comment 3.E.1.

3.E.12 Bristol Bay Defense Fund (Doc. #2661, p. 1)

Bristol Bay, Alaska, is home to a \$2.2 billion annual salmon fishery that provides more than 15,000 jobs and supplies 50 percent of the world's sockeye salmon. But Bristol Bay is more than just home for the largest wild sockeye salmon runs in the world. It's also a lifeline for the people of Bristol Bay and all those who depend on its immense cultural and economic value. The science is clear. If built, Pebble Mine would permanently poison Bristol Bay's waters and imperil the greatest wild salmon fishery left on Earth.

EPA Response

See EPA's response to comment 3.E.1.

3.E.13 Mass Mailing Campaign (Doc. #2552, p. 1)

Bristol Bay, Alaska, is home to a \$2.2 billion annual salmon fishery that provides 15,000 jobs, supplies over 50 percent of the world's sockeye salmon, and sustains the cultures and economy of Bristol Bay Tribes and communities. The science is clear. If built, Pebble Mine would permanently poison Bristol Bay's waters and imperil the greatest wild salmon fishery left on Earth.

EPA Response

See EPA's response to comment 3.E.1.

3.E.14 Mass Mailing Campaign (Doc. #2550, p. 1)

Bristol Bay's world-class fishery generates \$2.2 billion annually, supports 15,000 jobs and supplies 57% of the world's sockeye salmon — sustaining Indigenous communities since time immemorial. President Biden said, "It is no place for a mine."

EPA Response

See EPA's response to comment 3.E.1.

3.E.15 United Tribes of Bristol Bay (Doc. #0145, p. 1)

Bristol Bay, Alaska, is home to a \$2.2 billion annual salmon fishery that provides 15,000 jobs and supplies 50% of the world's sockeye salmon. If built, Pebble Mine would permanently poison Bristol Bay's waters and imperil the greatest wild salmon fishery left on Earth.

EPA Response

See EPA's response to comment 3.E.1.

3.E.16 Veto Pebble Mine (Doc. #2557, p. 1)

Bristol Bay, Alaska, is home to a \$2.2 billion annual salmon fishery that provides 15,000 jobs, supplies 50% of the world's sockeye salmon, and sustains the cultures and economy of Bristol Bay Tribes and communities.

EPA Response

See EPA's response to comment 3.E.1.

3.E.17 The Nature Conservancy (Doc. #1741, p. 1)

There is overwhelming evidence of the toxic pollution and environmental harm the proposed Pebble Mine will cause if developed. It will irrevocably jeopardize the \$2.2 billion annual salmon fishery that provides 15,000 jobs and supplies 50% of the world's sockeye salmon. But the Bristol Bay watershed is more than an economic engine and a national treasure — it is also the lifeline for the people of Bristol Bay and all those who depend on it.

EPA Response

See EPA's response to comment 3.E.1.

3.E.18 Mass Mailing Campaign (Doc. #2537, p. 1)

Bristol Bay, Alaska is home to a \$2.2 billion annual salmon fishery that provides 15,000 jobs and supplies 50% of the world's sockeye salmon.

EPA Response

See EPA's response to comment 3.E.1.

3.E.19 Trout Unlimited (Doc. #0190, p. 1)

The Bristol Bay region of Alaska is a world-class hunting, fishing and outdoor recreation destination, a supplier of food and subsistence resources for approximately 7,500 Indigenous Alaskans, and the backbone of a \$2.2 billion fishing industry.

EPA Response

See EPA's response to comment 3.E.1.

3.E.20 National Audubon Society (Doc. #1745, p. 1)

In addition to the impacts on globally Important Bird Areas, Bristol Bay is home to a \$2.2 billion annual salmon fishery that provides 15,000 jobs and supplies 57% of the world's sockeye salmon.

EPA Response

See EPA's response to comment 3.E.1.

3.E.21 World Wildlife Fund (WWF) (Doc. #0138, p. 1)

WWF has long been engaged in efforts to protect the Bristol Bay region from development as it is home to the world's greatest wild salmon fishery, generating \$2.2 billion annually, supporting 15,000 jobs, providing 57 percent of the world's sockeye salmon, and sustaining indigenous communities. Protecting this region creates a win for environmental justice, the economy, and the environment.

EPA Response

See EPA's response to comment 3.E.1.

3.E.22 World Wildlife Fund (WWF) (Doc. #1739, p. 1)

WWF has long been engaged in efforts to protect the Bristol Bay region from development as it is home to the world's greatest wild salmon fishery, generating \$2.2 billion annually, supporting 15,000 jobs, providing 57 percent of the world's sockeye salmon, and sustaining Indigenous communities. Protecting this region creates a win for environmental justice, the economy, and the environment.

EPA Response

See EPA's response to comment 3.E.1.

3.E.23 Earthworks Action (Doc. #1748, p. 1)

This phenomenal resource is an economic powerhouse, generating \$2.2 billion in economic activity per year, sustaining 15,000 annual jobs, and producing half of the world's commercial supply of wild sockeye salmon. If protected, this sustainable resource can continue to feed the world and power the economy forever. Of critical importance, the Bristol Bay salmon runs are central to the culture, lives and livelihoods of the people of Bristol Bay, sustaining the indigenous cultures that have lived in the area for millennia.

EPA Response

See EPA's response to comment 3.E.1.

3.E.24 Mass Mailing Campaign (Doc. #2560, p. 1)

Home to the world's largest sockeye salmon run, Bristol Bay is a renowned destination for fishing and outdoor recreation. This world-class fishery supports thousands of American jobs and a \$2 billion economic impact through recreational, commercial and subsistence fishing.

EPA Response

See EPA's response to comment 3.E.1.

3.E.25 Businesses for Bristol Bay et al. (Doc. #0827, p. 1)

Bristol Bay's wild salmon support a renewable economic engine that drives Alaska's economy and feeds into a variety of business sectors around the country. From commercial fishing to tourism to food service to recreation, Bristol Bay's salmon provide income for thousands of businesses, support 15,000 jobs, and generate \$2.2 billion in annual economic activity. In 2021, Bristol Bay contributed 57% of the world's wild salmon harvest. And, as they have for millennia, the wild salmon returning each year to Bristol Bay ensure a way of life for Alaska Native communities, providing food, livelihoods and a vibrant cultural touchstone.

EPA Response

See EPA's response to comment 3.E.1.

3.E.26 Mass Mailing Campaign (Doc. #2553, p. 1)

Bristol Bay's commercial salmon fishery is unlike any other in both its volume of fish and number of renewable jobs. It is a thriving economic engine that supplies over half the world's wild sockeye salmon, provides over 15,000 American jobs, and generates \$2.2 billion in annual economic activity. Bristol Bay is a torchbearer for sustainable fisheries management, boasting record returns over the past decade upwards of 50 million sockeye salmon. It has sustained a fishing tradition for generations of families throughout Alaska and the U.S. with Bristol Bay commercial fishing permit holders and crew hailing from nearly every U.S. state.

EPA Response

See EPA's response to comment 3.E.1.

3.E.27 Mass Mailing Campaign (Doc. #2565, p. 1)

Bristol Bay's wild salmon have been the foundation of Alaska Native culture in the region for thousands of years and continue to support the largest wild salmon commercial fishery on earth, producing half of the world's commercial supply of wild sockeye salmon, sustaining 15,000 annual jobs, and generating roughly \$2.2 billion in annual economic activity.

If you're weighing economic impact, I think wild salmon fishery outdoes operations like Pebble Mine in the long run.

EPA Response

See EPA's response to comment 3.E.1.

3.E.28 Patagonia (Doc. #2061, pp. 1-2)

Bristol Bay's wild salmon support an annual economic engine that drives Alaska's economy and affects a variety of businesses both locally and across the country. From commercial fishing to tourism to food service to recreation, Bristol Bay's salmon provide income for thousands of businesses, support 15,000

jobs, and generate \$2.2 billion in annual economic activity. In 2021, Bristol Bay contributed 57% of the world's wild salmon harvest. And, as they have for millennia, the wild salmon returning each year to Bristol Bay ensure a way of life for Alaskan Native communities, providing food, livelihoods and sacred cultural value.

EPA Response

See EPA's response to comment 3.E.1.

3.E.29 Alana Kansaku-Sarmiento (Doc. #2667-19, pp. 52–53)

I can say that I'm a part of a \$2.2 billion industry here. And it's wildly successful, and it's sustaining for the region. But - and I could tell you about all of the record runs, salmon runs that we've had recently, and that are - we're hoping to have in the future; that we are the Bristol Bay - or that we are the salmon capital of the world; that we do feed the world, in numbers, numbers, numbers.

EPA Response

See EPA's response to comment 3.E.1.

3.E.30 Seattle Aquarium (Doc. #0134, p. 1)

The surrounding marine ecosystem, \$1.5 billion-dollar fishing industry, and over 14,000 jobs—including jobs held by fishermen from Washington state—that depend on these fish would be put in jeopardy. The people and wildlife of Bristol Bay deserve a permanent solution, and we therefore applaud the EPA's proposal to move in that direction.

EPA Response

See EPA's response to comment 3.E.1.

3.E.31 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 1)

Bristol Bay is a national treasure, producing half of the world's commercial supply of wild sockeye salmon, sustaining 15,000 annual jobs, and generating roughly \$2.2 billion in annual economic activity. The robustness of this unparalleled fishery was showcased this year when a record 78 million sockeye salmon returned to Bristol Bay waters.

EPA Response

See EPA's response to comment 3.E.1.

3.E.32 United Fishermen of Alaska (UFA) (Doc. #0828, p. 1)

The Bristol Bay salmon fishery generates approximately \$2 billion in annual economic activity and employs more than 15,000 people. Additionally, there is a public health interest in conserving the

salmon that return to Bristol Bay which account for over 50% of the world supply of sockeye salmon each year and is known to be amongst the most beneficial protein sources.

EPA Response

See EPA's response to comment 3.E.1.

3.E.33 Charles Borbridge (Doc. #2097, p. 1)

Bristol Bay is unique in the world. Its unique in the size of the lake and river systems; the salmon runs it supports; and the benefits realized by all participants in the salmon run. Making all this possible is the unique pristine waters of the Bristol Bay watershed.

Damage to the pristine waters would harm those that annually benefit. The commercial fishing industry supports fishers, processors, plant workers, shippers, value added businesses inside and outside Alaska, support businesses, and indirect jobs created by all the economic activity. The sport fishing industry creates direct and indirect jobs.

(...)

Bristol Bay is also important in branding Alaska Salmon as sustainable wholesome, and healthy. This depends on clean waters. A massive pollution prone mine would harm that branding and reduce the demand for all Alaska salmon. Subsistence fishing is essential to the economic, physical, and cultural health of Bristol Bay residents. Habitat destruction and mining pollution would reduce and taint salmons. Fewer salmon for subsistence users means higher food costs since substitute food is expensive in rural Alaska. Substitute food means less salmon in the diet which is less healthy. Salmon tainted by mine pollution would also be less healthy.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1. EPA recognizes the significance of the Bristol Bay salmon brand.

3.E.34 Loren Karro (Doc. #0847, p. 2)

From an economic viewpoint, in a study by the McKinley Research Group, the Bristol Bay commercial salmon fishery was estimated to be valued at over \$2 million in 2019 and to provide over 15,000 jobs. There are also dozens of commercial sport fishing lodges in the area that are all dependent on the salmon fishery, and that provide significant economic benefit to the region.

EPA Response

See EPA's response to comment 3.E.1.

3.E.35 Johns Hopkins Center for a Livable Future (Doc. #0822, p. 1)

The Bristol Bay watershed is home to the largest wild sockeye salmon fishery in the world and the proposed Pebble Mine would be one of the largest open-pit copper and gold mines in the world (EPA, 2014a). In 2021 alone, the Bristol Bay commercial salmon season had a sockeye salmon run of 66.1 million fish — the largest on record (ADFG, 2021). Sockeye salmon are sustainably harvested and relatively low in embodied energy, making them a climate friendly fishery (Brown et al. 2022). In 2019, the commercial fishery supported some 15,000 jobs and as much as \$2 billion in economic output (McKinley Research Group, 2021). Siting the mine at the headwaters of the sockeye salmon fishery would pose serious threats to this unparalleled fisheries resource.

EPA Response

See EPA's response to comment 3.E.1.

3.E.36 Theodore Roosevelt Conservation Partnership (TRCP) (Doc. #1614, p. 1)

Bristol Bay's fishing and tourism industries account for more than 17,000 full and part-time jobs. The region's clean water is the foundation of the world's most valuable wild-salmon fishery, which generates more than \$2 billion in annual economic output. The subsistence and cultural values of this fishery are also significant. Bristol Bay salmon hold outsized importance to subsistence harvesters across Alaska; fish from this region comprise nearly one-third of the state's subsistence sockeye harvest. It is imperative to maintain the pristine watersheds of Bristol Bay that support local food security, sustainable economic development, and world-class recreation opportunities.

EPA Response

See EPA's response to comment 3.E.1.

3.E.37 Pacific Seafood Processors Association (PSPA) (Doc. #0137, p. 1)

PSPA represents wild Alaska seafood processors, some of which started as Bristol Bay salmon canneries more than 100 years ago. Over the course of decades, our members have invested hundreds of millions of dollars in salmon processing infrastructure in Bristol Bay, enabling salmon sustainably harvested in the world's largest wild sockeye salmon fishery to reach seafood consumers around the world. This and other Bristol Bay commercial fisheries support 15,000 jobs and \$2 billion or more in economic impact annually.

EPA Response

See EPA's response to comment 3.E.1.

3.E.38 Wild For Salmon (Doc. #2506, p. 1)

The Bristol Bay region of Alaska is a world-class hunting, fishing and outdoor recreation destination, a supplier of food and subsistence resources for approximately 7,500 Indigenous Alaskans, and the backbone of a \$2.2 billion fishing industry.

(...)

As fishermen who live and breathe sockeye salmon year round, submitting our comments in support of these long term Clean Water Act protections is more than just a movement to get behind. It is a way of life that we count on each and every day, from the pristine waters of Bristol Bay each summer, to the millions of dinner plates our summer catch now travels to every September through May. From our small home town in Pennsylvania, to rural communities in Montana, to coastal neighborhoods in Texas, to bustling cities like New York and Los Angeles - our catch feeds families and people all across the United States.

We are able to provide access to the clean, natural and wildly nourishing sockeye salmon of Bristol Bay to people everywhere in the Lower 48 ONLY because it has remained untouched and well-managed for decades.

Safeguards for Bristol Bay's headwaters through the Clean Water Act are essential to continue this way of life. Without them, we risk Pebble mine moving forward and causing irrevocable effects on this unparalleled ecosystem, and, in turn, gravely letting down those inspired by the story of Bristol Bay, its salmon and the world-renowned fishery it maintains.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.39 Flint Hills EcoVenture, LLC (Doc. #0321, p. 1)

Bristol Bay is home to the world's largest salmon run. All five Eastern Pacific species spawn in the bay's freshwater tributaries. Along with herring and other fisheries, salmon account for nearly 75% of local jobs.

As an example of economic significance, here's a list of salmon canneries in Bristol Bay:

North Pacific Seafoods, Togiak Seafoods, Bristol Bay Setnet, Friedman Family Fisheries, Peter Pan Seafoods, Ekuk Fisheries, Big Creek Shore plant, Coffee Point Seafood, Icicle Seafoods, Wild Premium Salmon, Seafood Enterprises of Alaska, Alaska General Seafoods, Alaska Salmon Wild, Da Kine Enterprise, Extreme Salmon, Great Ruby Fish, My Girl, Naknek Family Fisheries, North Pacific Seafoods, Ocean Beauty, Silver Bay Seafoods, Trident Seafoods, Tulchina Fisheries, Diamond Lodge Smokehouse, and Nakeen Homepack.

The current commercial fishery is worth \$2.2 billion annually, supports over 15,000 jobs, and supplies the world with over 50% of its sockeye salmon.

(...)

Additionally, Bristol Bay's sport fishing, hunting, and tourism is highly sought by people around the world and is a significant and lucrative part of the culture and economy (including Alaskan Native culture and lifestyle of thousands of years).

EPA Response

See EPA's response to comment 3.E.1.

3.E.40 One Fish Foundation (Doc. #2664-7, pp. 7–8)

As a teacher, I try to get students to think about their relationship to seafood as a resource. In many of these classes, from middle school and to college, I've held up the example of Bristol Bay as a pristine watershed, responsible for such a productive fishery that continues to set records. The example is so striking because the fishery is under threat from over ten billion tons of toxic waste from the Pebble project. I've had several commercial and subsistence fish harvesters within the Slow Fish network that fish Bristol Bay talk to my students about their livelihoods, their connection to the resource, and what's at stake.

(...)

The Slow Food community cares about the story behind the salmon produced in Bristol Bay. Our members care that this incredible resource, which supports more than 15,000 jobs and generates \$2.2 billion dollars annually, remains intact and untouched by toxic mining. Many of our members want to see the watershed that has supported indigenous communities since time immemorial stay healthy and productive to continue feeding those communities. So I ask you on behalf of the thousands of students I've already taught and the thousands more that I will teach, I ask you on behalf of the commercial fish harvesters and fishmongers in the Slow Fish community working in and around Bristol Bay, and I ask you on behalf of the thousands of Slow Food USA members from Alaska and the Lower 48. I ask you to please finish the job, please do your duty and end the thread of the Pebble Mine.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.41 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 13–15)

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.[See ISER Report, Executive Summary at 1. See also Dan, Tyler H., et al., Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Bristol Bay, Alaska, 2009, at 1, ADF&G Fishery Data Series No. 11-21 (July 2011), available at <http://www.adfg.alaska.gov/FedAidpdfs/FDS11-21.pdf>.] Salmon is also by far the most valuable commercial fish managed by the State of Alaska, and Bristol Bay is Alaska's richest commercial

fishery.[See ADF&G, Commercial Fisheries: Information by Fishery, available at <http://www.adfg.alaska.gov/index.cfm?adfg=fishingCommercialByFishery.main>.]

Bristol Bay's commercial salmon fishery provides enormous economic benefits to both the Alaska and national economies.[See ISER Report.] Nearly one-third of all of Alaska's salmon harvest earnings come from the Bristol Bay region[See Woodby, D., et al. Commercial Fisheries of Alaska, ADF&G Special Public. No. 05-09 (June 2005), available at <https://alaskafisheries.noaa.gov/sustainablefisheries/sslmc/may-06/adfg/05-adfg-report.pdf>.] and the seafood industry contributes \$5.8 billion to the Alaska economy and 78,500 jobs.[See Alaska Dept. Fish & Game (ADF&G), Commercial Fisheries, available at <http://www.adfg.alaska.gov/index.cfm?adfg=fishingCommercial.main>. See Alaska Commercial Fisheries Entry Comm'n, 2012 Annual Report, at 1 (2013), available at http://www.cfec.state.ak.us/mnu_Annual_Reports.htm.]

In the past five years, Bristol Bay sockeye salmon returns and commercial catches have set astounding records. The 2017 sockeye salmon catch in Bristol Bay had a direct harvest value of \$216.4 million and—owing to Bristol Bay processing and sustainable management—was almost double the 20-year average of \$108.9 million.[See ADF&G, 2017 Bristol Bay Salmon Season Summary (Sept. 14, 2017), <http://www.adfg.alaska.gov/static-f/applications/dcfnewsrelease/865497019.pdf>.] 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.[See ADF&G, 2018 Bristol Bay Salmon Season Summary (Sept. 18, 2018), <http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/989536277.pdf>. 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 ranked 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.[Id.] That is, until the 2021 sockeye salmon run became the largest total run on record with 66.1 million fish,[Alaska Dept. of Fish and Game, 2021 Bristol Bay Salmon Season Summary (Sept. 29, 2021), <http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/1337414316.pdf>.] only to be surpassed by the 2022 sockeye salmon run of 78.3 million fish.[<https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.harvestsummary>.]

[Bar Graph of Bristol Bay Sockeye Salmon Runs 2012-Present included in submission here]

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.[Enclosed Appx. D at pp. 2063 to 2133 (McKinley Research Group, The Economic Benefit of Bristol Bay Salmon, available at: <https://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf>).] On an average year, Bristol Bay salmon fisheries thus create a total economic output value of roughly \$2.2 billion.[Id. at ES-3.]

EPA Response

See EPA's response to comment 3.E.1. EPA added information about the 2021 and 2022 harvest size to Section 3.3.5 of the FD.

3.E.42 Bristol Bay Heritage Land Trust (BBHLT) (Doc. #0826, pp. 4–5)**Economic Value of the Salmon Watersheds in the Path of the Northern Access Route**

As mentioned above, BBHLT has entered into an agreement with Pedro Bay Village Corporation to purchase a conservation easement over 44,000 acres of critical salmon spawning habitat in the watersheds of Knutson Creek and the Pile and Iliamna Rivers. These same watersheds are in the path of route that was approved by the Army Corps of Engineers for transporting ore from the proposed Pebble Mine to Cook Inlet.

Our desire to protect these watersheds was motivated by the genetic work of the Alaska Department of Fish & Game that shows these watersheds have been the most productive for salmon emerging from during the last decade. The economic value of these salmon to the commercial fishermen of Bristol Bay, on average, is more than \$21,000,000 a year. Submitted with these comments is a summary of the analysis that led to our desire to protect these watersheds in perpetuity. We respectfully suggest this analysis supports the EPA doing the same.

For the foregoing reasons we once again urge the EPA to take the necessary action to protect Bristol Bay from the tragic consequences that will most certainly occur if mining and its attendant infrastructure is not severely curtailed in the Nushagak River and Lake Iliamna watersheds

EPA Response

Although development of a mine at the Pebble deposit would require discharges of dredged or fill material for its various components (e.g., mine site, transportation corridor, port), this FD focuses on the adverse effects on fishery areas resulting from the discharge of dredged or fill material at the mine site associated with the construction and routine operation of a mine at the Pebble deposit because these adverse effects on the aquatic ecosystem would be the most severe.

3.E.43 Alaska Wildlife Alliance (AWA) (Doc. #0836, p. 2)

The Bristol Bay watershed supports the largest Sockeye salmon fishery in the world, with approximately 46% of the average global abundance of wild sockeye salmon (EPA, About Bristol Bay). Between 1990 and 2010, the annual average inshore run of sockeye salmon in Bristol Bay was approximately 37.5 million fish. Annual commercial harvest of sockeye over this same period averaged 27.5 million. In 2022, the total commercial harvest reached 59.5 million fish — 26% more than had ever been caught in a single Bristol Bay season; enough fish to serve a quarter-pound of salmon to every person in America (Berton, 2022). The Bristol Bay commercial salmon fishery generates the largest component of economic activity and was valued at approximately \$300 million in 2009 (first wholesale value) and

provided employment for over 11,500 full- and part-time workers at the peak of the season. Approximately half of the Bristol Bay sockeye salmon production is from the Nushagak River and Kvichak River watersheds.

EPA Response

See EPA's response to comment 3.E.1.

3.E.44 Bristol Bay Regional Seafood Development Association (BBRSDA) (Doc. #2062, pp. 2–3, 3–6)

The scientific research on this is well-established. As remote as the Bristol Bay habitat and fishery have remained, the legacy of a wild, sustainable fishery is fragile. Especially during the early and late stages of their lifecycle, salmon are highly sensitive to their surroundings, such that even slight changes in water chemistry, temperature, or sedimentation can have devastating lethal and sub-lethal effects. This fundamental point has been repeatedly proven by the loss or substantial degradation of virtually every naturally reproducing salmon fishery in the United States outside of Alaska. This is a lesson we do not need to learn yet again. As explained below, there are also substantial risks to the economic vitality of Bristol Bay's commercial salmon fishery, which is the primary source of regional jobs as well as jobs for many thousands of people who reside outside of Bristol Bay.

Bristol Bay is the world's largest source of premium, wild salmon by a wide margin, and the region's sockeye runs are more abundant than ever. In 2022, the Bristol Bay commercial fishery met all escapement goals and turned in a record harvest of roughly 60 million sockeye salmon, smashing the previous record of 44 million fish set in 1995. If lined up nose-to-tail, Bristol Bay's 2022 sockeye run of 78 million fish would stretch around the world. However, this year's mega-record sockeye run is just the latest example of phenomenal abundance, as Bristol Bay harvests have been extremely strong in recent years. This stands in stark contrast to other commercial fisheries in North America which rely on sockeye, coho, and Chinook salmon. Over the past four years with complete data (2018-2021), Bristol Bay has produced more than twice as much premium, wild salmon as all other North American commercial fisheries combined (see Exhibit 1).

[Exhibit 1. Commercial Harvests of Premium Wild Salmon Species by Area, 2018-2021 included in submission here]

Bristol Bay sockeye salmon production, though currently abundant, relies heavily on pristine salmon rearing conditions in the Nushagak and Kvichak River watersheds. The proposed Pebble Mine development would create substantial risk to salmon runs in these areas, as well as create existential market risk for all Bristol Bay salmon discussed in more detail further below.

(...)

In total, the region's commercial salmon fishery created 15,000 U.S. jobs and generated \$2.0 billion of economic output in 2019. Moreover, it is important to understand the context of Bristol Bay's salmon

fishery. In a state famous for its salmon, Bristol Bay has accounted for roughly half the ex-vessel value of all salmon caught in Alaska, and it accounts for nearly half of the world's sockeye salmon production.

While much of the RPD rightly focuses on potential environmental and ecological impacts, there are economic factors which are a critical element in all the jobs and dollars created by Bristol Bay sockeye. This commercial salmon fishery is viable and successful not just due to abundant salmon runs, but because it is valued by consumers as a premium seafood product. The economic feasibility of Bristol Bay's commercial salmon fishery is highly sensitive even to relatively small changes in fish price.

Over the last two years, wild sockeye prices at U.S. retail stores have (conservatively) been approximately \$4.00 higher per fileted pound compared to farmed Atlantic salmon (see Exhibit 2). [<https://tinyurl.com/2p98v44n>] On a round weight basis, this works out to roughly \$2.00 per pound. Given that commercial fishermen in Bristol Bay are typically paid between \$1.00 to \$2.00 per round pound, it would be impossible to profitably sustain a commercial fishery in Bristol Bay should retail prices for sockeye decline to the levels paid for Atlantic salmon, or for that matter, to the retail price levels for wild pink and chum salmon. The retail price premium for sockeye salmon, most of which now comes from Bristol Bay, is roughly equal-to-or- larger than the ex-vessel price paid to fishermen. In general, the costs and margins required to process, ship, and sell Bristol Bay salmon are relatively fixed. These parts of the supply chain cost what they cost. This is important, because if retail prices were to decline due to negative impacts on consumer demand, it is the producers—the fishermen—who ultimately suffer the biggest impact.

The simple fact is that if Bristol Bay sockeye salmon were to lose its market status as a premium seafood product, there would not be enough marginal value to support a commercial fishery. Thousands of jobs, hundreds of businesses, and the foundation of Alaska's salmon industry would be sacrificed.

[Exhibit 2. Sockeye Salmon Retail Price Premium vs Ex-Vessel Price included in submission here]

[Exhibit 3. Consumer Survey Results: Benefits of Wild-Caught Seafood included in this submission]

EPA Response

See EPA's response to comment 3.E.1.

3.E.45 Mass Mailing Campaign (Doc. #2546, p. 1)

The foundation of a successful business in this industry is clean water and access to streams and land that are still remote and wild. Bristol Bay rivers are some of the most sought-after fishing and hunting destinations in the world. Bristol Bay fishing and tourism industries account for more than 14,000 full and part-time jobs and a \$1.5 billion annual economy. In 2021, the Bristol Bay sockeye salmon fishery reached an all-time record at 71 million fish running through the region. The 2022 salmon forecast is projected to exceed last year's record.

EPA Response

See EPA's response to comment 3.E.1. EPA added information about the 2021 and 2022 harvest size to Section 3.3.5 of the FD.

3.E.46 Frances Nelson (Doc. #2667-21, p. 57)

We have - we have a healthy economy in Koliganek. In 2019, the commercial fishing permits that fish brought in about \$1 million into our local economy. And that doesn't include the people that fished with people from other communities. Our tribe employees about 30 people, and our school employs about 20 people. We also have high standards for education, traditional and modern.

EPA Response

See EPA's response to comment 3.E.1.

3.E.47 Trout Unlimited (Doc. #2664-3, p. 5)

I'd like to thank the EPA for your leadership to Advance Clean Water Act 404(c) protections for Bristol Bay, and I encourage and ask that you finalize the strongest and most comprehensive safeguards for the region.

(...)

You've been hearing all morning from local residents, and there's a strong record of millions of people who have commented in support of this action over the last decade, and I simply wish to add my name to that. It's absolutely critical that you act to ensure that thousands of years of indigenous tradition, a fishery worth over \$2.2 billion dollars annually, and one of the most sought after hunting and fishing destinations are protected for future generations. Alaskans have been overwhelmingly opposed to the Pebble Mine, and we don't want to have to keep spending time fighting Pebble or bad mine projects like it. It's time for us to move on, and we are counting on EPA to use its authority to protect the most prolific sockeye salmon fishery on the planet.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.48 Natural Resources Defense Council et al. (Doc. #0617, p. 2)

More than 78 million salmon returned to Bristol Bay this summer,[Alaska Dep't of Fish & Game, Bristol Bay Daily Run Summary (2022),

<https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.harvestsummary.>]

shattering last year's record of 67 million. Integral to this extraordinary run is the environmental sustainability of the region, something the science unequivocally confirms that the proposed Pebble Mine—and indeed all large-scale porphyry ore mining in Bristol Bay—would jeopardize.

Bristol Bay is home to the world's largest wild sockeye salmon fishery, generating \$2.2 billion annually, supporting 15,000 American jobs, supplying 57 percent of the world's wild sockeye salmon, and sustaining Indigenous communities since time immemorial. [McKinley Research Group, The Economic Benefits of Bristol Bay Salmon (Feb. 2021), https://stoppebbleminenow.org/wp-content/uploads/2021/03/Final-Economic-Benefit-of-Bristol-Bay-Salmon-3_17_21.pdf] As they have for millennia, the wild salmon returning each year to Bristol Bay ensure a way of life for Alaska Native communities, providing subsistence food, subsistence-based livelihoods, and the lifeblood of culture.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.49 National Fisheries Institute (NFI) (Doc. #0854, pp. 2–3, 3)

As EPA recognizes, Bristol Bay is home to the largest sockeye salmon run on the planet, and it ranks as one of the most valuable fisheries in the United States. The Bristol Bay salmon fishery, which is subject to stringent management requirements established by the Alaska Department of Fish and Game, in fact incorporates five specific fisheries. It is among the most sustainable major fisheries in the United States. In 2021 alone, 66.1 million sockeye salmon returned to Bristol Bay, with a record commercial harvest of 40.4 million fish. [Alaska Department of Fish and Game. 2021 Bristol Bay Salmon Season Summary. (Juneau: Alaska Department of Fish and Game, 2021)

(<https://www.adfg.alaska.gov/static/applications/dcfnewsrelease/1337414316.pdf>). Other estimates of 2021 salmon returns to Bristol Bay are even higher.] This represents a staggering 57 percent of the world's wild salmon harvest. [McKinley Research Group, LLC, The Economic Benefits of Bristol Bay Salmon (Anchorage: McKinley Research Group (2021) (https://static1.squarespace.com/static/56b0dfb660b5e98b87fc3d52/t/6053de8bc8cb7e2a25d62028/1616109201185/Final+Economic+Benefit+of+Bristol+Bay+Salmon+3_17_21.pdf)).]

The Bristol Bay harvest plays a crucial role in commercial and subsistence salmon fishing alike. According to a recent estimate, the Bristol Bay sockeye fishery alone provides over 15,000 jobs and generates roughly \$2 billion dollars in annual economic activity. [Id.] These jobs help make Alaska a commercial seafood hub and help U.S. producers compete in seafood markets across five continents. Bristol Bay salmon gives these producers a product tailor-made for domestic and overseas consumers seeking a sustainable, premium, center of the plate fish. In addition, the Bristol Bay sockeye fishery is essential to subsistence fishing that takes place throughout the watershed that the Pebble Mine project would threaten and in Bristol Bay itself. Subsistence fishing, including of sockeye salmon, has been a tradition in the region for generations, and it, too, is essential for Alaska communities to continue to thrive. [Id.]

There is also a public health dimension to the proposed Pebble Mine project. Heart disease remains one of the nation's principal causes of death. Under-consumption of seafood by Americans – and the cardiovascular problems that this under-consumption invites – causes an estimated 88,000 premature deaths in the U.S. every year. [Goodarz, Danaei, Ding Eric L., Mozaffarian D., Taylor, Ben, Rehm J, et al.,

“The Preventable Causes of Death in the United States: Comparative Risk Assessment of Dietary, Lifestyle, and Metabolic Risk Factors,” PLOS Medicine, Volume 8, Issue (Jan. 10, 2011) (<https://doi.org/10.1371/journal.pmed.1000058>.)] The Dietary Guidelines for Americans – the government’s principal nutrition policy document – recommends that people eat 2 to 3 servings of seafood each week. [U.S. Department of Agriculture and U.S. Department of Health and Human Services, Dietary Guidelines for Americans, 2020-2025 (Washington D.C.: U.S. Department of Agriculture, 2020) (https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf.)] And salmon is a nutritional powerhouse, high in protein, healthy fats, and nutrients such as calcium and Vitamin D, and low in saturated fats and additives. Salmon abounds in the omega-3 fatty acids that are critical for cardiovascular and cognitive development in adults and children alike. These benefits are especially important for Alaska communities and native populations, who regard the locally caught salmon they feed their families as an indispensable part of their way of life. Any effort to address the seafood consumption shortfall the DGA highlights must include salmon. [Id.]

(...)

Without CWA Section 404(c) protections in place, Bristol Bay’s future is at risk, creating economic insecurity for seafood workers, communities, salmon supply chains, and businesses across the country. In the event that degraded habitat causes the fishery to decline, that will have immediate and long-term economic and social consequences: loss of income for seafood workers, reduced seafood supply, increased prices for a highly popular seafood item, diminished dietary outcomes for consumers, and even destabilized communities in the affected watershed. This is no way to treat one of the crown jewels of the American fisheries empire.

EPA Response

See EPA’s responses to comments 3.A.8 and 3.E.1. EPA recognizes the dietary importance of salmon in Section 3.3.6 of the FD.

3.E.50 Action Network (Doc. #1753, p. 1)

The Bristol Bay watershed is the lifeline for the people of Bristol Bay and all those who depend on it. This means commercial and subsistence fish harvesters, processors and recreational fishing businesses working in the bay, and all of their employees and clients from near and far. This also means seafood businesses, restaurants, and a multitude of seafood eaters from around the world.

Bristol Bay’s wild salmon have been the foundation of Alaska Native culture in the region for millennia. The watershed supports the largest wild salmon commercial fishery on earth, producing half of the world’s commercial supply of wild sockeye salmon, sustaining 15,000 annual jobs and generating roughly \$2.2 billion in annual economic activity.

This watershed is host to one of the best managed fisheries in the world, and the salmon harvested there reflect the Slow Food and Slow Fish values of food that is good, clean, and fair for all. This means the salmon is sustainably harvested from healthy populations, is processed to preserve its excellent taste

and quality, and comes from a supply chain where fishermen and processors are paid a fair price. Bristol Bay salmon and other seafood are important protein sources for Slow Food communities across the country and beyond.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.51 One Fish Foundation (Doc. #1792, p. 1)

In many of these classes, from middle school into college, I've held up the example of Bristol Bay as a pristine watershed responsible for such a productive fishery that continues to set records. The example is so striking because this fishery is under threat from over 10 billion tons of toxic waste from the Pebble project. I've had commercial and subsistence fish harvesters within the Slow Fish network that fish Bristol Bay talk to my students about their connections to the resource, their livelihoods, and what's at stake. You should see the stunned reactions from these students when they've heard these firsthand stories.

Slow Fish North America has several fish harvesters from diverse backgrounds that depend on Bristol Bay's healthy habitat for the world's largest wild sockeye run, and their livelihoods. In fact, I spent a few weeks in Bristol Bay in 2019, interviewing several folks with different backgrounds about what binds them to that place, those waters, and those salmon. I learned to setnet fish from Melanie Brown at the mouth of the Naknek River. Melanie is Yupik, and fishes the same spot where her great-grandfather taught her to fish. I later stood waist-deep upriver in amazement as a parade of thousands of chrome fish flashed by while I was flyfishing.

Just as the Slow Fish community cares about Bristol Bay being one of the best-managed fisheries in the world, due in large part because of its pristine waters, the Slow Food community cares about the story behind the salmon produced in Bristol Bay. Our members care that the incredible resource, which supports more than 15,000 jobs and generates \$2.2 billion annually remains intact and untouched by toxic mining.

Many of our members eschew farmed salmon for wild-caught Pacific salmon, like the sockeye from Bristol Bay. They want to see the watershed that has supported Indigenous communities since time immemorial stay healthy and productive to continue feeding those communities. Many want to see domestically harvested and processed wild Bristol Bay salmon remain a healthy seafood choice in the U.S.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1. EPA recognizes the dietary importance of salmon in Section 3.3.6 of the FD.

3.E.52 Commercial Fishermen for Bristol Bay (CFBB) (Doc. #2064, pp. 1–2, 3)

Bristol Bay's commercial salmon fishery is unlike any other in both its volume of fish, number of jobs, and history of sustainable harvest. Bristol Bay produces the majority of the world's wild sockeye salmon, with record-breaking harvests the past two years and over 78 million sockeye returning this season alone. Key to Bristol Bay's consistently strong salmon runs is its pristine and diverse portfolio of fully intact salmon habitat; this intact habitat is especially critical for Bristol Bay's sockeye salmon as the world's changing climate impacts ocean conditions and marine productivity.

Without finalized Clean Water Act § 404(c) protections in place, our country stands to lose over 15,000 sustainable jobs, \$2.2 billion in annual economic activity, and the largest domestic source of sustainable wild salmon. Most importantly at risk is the irreplaceable, generational way of life of Bristol Bay's indigenous communities. As such, CFBB recommends that EPA respond to the comments of Bristol Bay's Tribes and commercial fishing representatives to adopt the below described changes to the RPD and incorporate them into a Recommended Determination for Bristol Bay.

(...)

The importance of these salmon to the indigenous communities of Bristol Bay who have sustained these salmon runs should be reason enough for EPA to move forward with a Recommended and Final Determination. Without action the cultural resources that Bristol Bay stands to lose are irreplaceable and immeasurable. The losses that can be measured include Bristol Bay's thriving fishing industry, which generates 15,000 renewable jobs, \$2.2 billion in annual economic activity, and an irreplaceable sustainable domestic food source. Our country cannot afford to lose this kind of renewable economic engine and we urge the EPA to finalize CWA § 404(c) protections before the end of 2022.

EPA Response

See EPA's response to comment 3.E.1.

3.E.53 Alaska State Legislature (Doc. #0505, p. 1)

Bristol Bay is a \$2.2 billion dollar annual salmon fishery that provides 15,000 jobs and nearly 50% of the world's sockeye salmon. If this disastrous project is allowed to move forward, the resulting destruction of the Bristol Bay fishery will destroy not only a major loss of one of Alaska's iconic exports – the wild sockeye salmon – it will spell the loss of a way of life and economic devastation for those who depend on this fishery to pay the bills. This impact will also fall disproportionately on the Yup'ik, Dena'ina, and Alutiiq peoples who have been using the bounties of Bristol Bay for subsistence and have been stewarding this region and its wildlife for generations.

It is also important to note that while Bristol Bay's fisheries have been thriving in recent years, other fisheries, namely those on the Yukon River, have struggled immensely during that same period. The state was forced to deliver salmon from other fisheries in Alaska in order to provide these communities

with food for the winter. If Pebble Mine moves forward and yet another fishery is ruined, subsistence and other traditional ways of life will be irrevocably altered or destroyed.

In Alaska, we like to talk about how salmon is life. Salmon is so important to my neighbors for so many reasons, from culture, to subsistence, to food for getting through the winter. We must think of the next generations when we consider a project like this and their right to wild sustainable salmon.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.54 Northwest Indian Fisheries Commission (Doc. #0621, pp. 1–2)

Further, the imperatives for protection include impacts outside of Alaska. The Bristol Bay sockeye salmon fishery is the most valuable wild salmon fishery in the world. Here in Washington, we are struggling to recover and sustain our fisheries of significant cultural and economic importance. With that in our minds, including the knowledge of what has been lost and the expense to recover, it is unacceptable to accept new or more risks that we know will devastate the natural resources on which we all depend. Too often tribes find themselves at the forefront of these battles to defend their rights and cultures. The salmon people have lived in these lands for over 10,000 years. The Bristol Bay and the watersheds that comprise it support one of the most productive, sustainable, and valuable salmon fisheries left and holds unquantifiable ecological, cultural, and economic value across the region. It must be carefully protected.

EPA Response

EPA recognizes the global significance of Bristol Bay's salmon fishery and its cultural and economic importance (see Section 3 of the FD).

3.E.55 Washington State Attorney General Office (Doc. #0183, pp. 3–4)

Commercial fishing has long played an important role in Washington's culture, and the Alaska fishery is a major driver for the Puget Sound economy. Washingtonians have a particularly important relationship with Bristol Bay, holding approximately 760 Bristol Bay fishing permits.[McKinley Research Group, The Economic Benefits of Bristol Bay Salmon 24 (February 2021).] As of 2013, Washington residents also owned approximately 1000 boats participating in the Alaska commercial fishery, of which 526 are homeported in Puget Sound.[McDowell Group, Ties That Bind: The Enduring Economic Impact of Alaska on the Puget Sound Region 19 (Feb. 2015) (prepared for Seattle Metro. Chamber of Commerce).] Most of the larger vessels that bring Alaska salmon to market are homeported in Seattle.[Id.] These vessels use Port of Seattle facilities for maintenance, repair, and loading/offloading. Including economic multiplier effects, Alaska-related commercial fishing generated 10,150 jobs and \$600 million in labor earnings in the Puget Sound region in 2013.[Id. at 2.]

Beyond those directly involved in fishing, seafood processing supports thousands of Washingtonians. In 2013, Alaska-related seafood processing created 13,100 jobs and \$690 million in earnings in the Puget Sound region.[Id.] Overall, the Alaska seafood industry generates almost 24,000 jobs and \$1.3 billion in labor earnings for the Puget Sound region.[Id.] By threatening this unique fishery, mining in the Bristol Bay watershed would put an important part of the Puget Sound economy and Washington's culture of fishing at risk.

Climate change poses a major threat to salmon and to the fishing industry, but Bristol Bay stocks have fared relatively well in recent decades.[Crozier LG, McClure MM, Beechie T, Bograd SJ, Boughton DA, Carr M, et al. (2019) Climate vulnerability assessment for Pacific salmon and steelhead in the California Current Large Marine Ecosystem. PLoS ONE 14(7): e0217711.

<https://doi.org/10.1371/journal.pone.0217711> (last accessed June 21, 2022).], [Prop. Determination at 3-61.] This has been attributed to the complexity of the Bristol Bay ecosystem, which supports hundreds of individual salmon populations adapted to differing local conditions.[Id. at 3-43.], [See Hilborn, R., T. P. Quinn, D. E. Schindler, and D. E. Rogers. 2003. Biocomplexity and fisheries sustainability. Proceedings of the National Academy of Sciences of the United States of America 100:6564–6568.] Because this variability has been preserved, Bristol Bay fish have retained the capacity to adapt to changing environmental conditions, and the region continues to support Washington's commercial fishing economy.[Id. at 6567.] Maintaining the diversity of Bristol Bay salmon by preserving the intact ecosystem will be even more important in the future to ensure that the salmon fishery, along with the economic benefits that it provides in Washington, will be resilient to climate change.

EPA Response

See EPA's responses to comments 3.E.1 and 3.E.54. The FD includes material about the importance of maintaining the region's habitat and salmon diversity given predicted changes in climate.

3.E.56 Port of Seattle (Doc. #0159, p. 1)

The Bristol Bay watershed supports the largest sockeye salmon run in the world, producing approximately half of the world's wild sockeye salmon harvest. While the fishing takes place in the waters off Alaska, Washington state residents occupy 28 percent of all U.S. jobs created by the Alaska seafood industry.

EPA Response

See EPA's response to comment 3.E.1.

3.E.57 Sitka Conservation Society (Doc. #0464, pp. 1–2)

Bristol Bay has enormous economic value to Alaskans. The seafood industry is one of Alaska's largest, contributing \$5.7 billion annually to Alaska's economy and employing over 60,000 people. Bristol Bay comprises a large fraction of the industry, valued at over \$1.5 billion and representing nearly 16,000 of

the Alaskans employed by the seafood industry. In 2019, the salmon harvest in the fishery was 48% of the total Alaska salmon harvest in terms of ex-vessel value. In the Bristol Bay region, the seafood industry employs 75% of the population and has been a major component of the local economy for nearly 140 years. Here in Sitka, many of our seafood processors, including Northline Seafoods and Sitka Salmon Shares, rely on fish from Bristol Bay to supply their customers and sustain their businesses. Mining in the region and the associated damage it would do to the fish in the bay would wreak havoc upon the seafood industry, severely affecting the local economy of the region as well as Alaska's overall economy. Restricting mining in the region would preserve this valuable industry for Alaskans across the state.

EPA Response

See EPA's response to comment 3.E.1.

3.E.58 Bristol Bay Regional Seafood Development Association (BBRSDA) (Doc. #2062, p. 1)

In total, the region's commercial salmon fishery created 15,000 U.S. jobs and generated \$2.0 billion of economic output in 2019. Bristol Bay is the world's most valuable wild salmon fishery and in recent years has exhibited record-setting abundance.

EPA Response

See EPA's response to comment 3.E.1.

3.E.59 Conservation Committee; and National and Legislative Affairs Committee, Garden Club of America (Doc. #0188, p. 1)

The rivers, streams and wetlands of the Alaskan Bristol Bay support the world's largest sockeye salmon fishery (a \$2.2 billion industry), and supply food, water and subsistence resources for approximately 7,500 indigenous people. The region is a world-class hunting, fishing and outdoor recreation destination. Mining the Pebble Deposit without restriction on dredging, discharging, and filling wetlands of the area would irreparably harm the region's water resources, natural habitats, its population, economy and culture.

EPA Response

See EPA's response to comment 3.E.1.

3.E.60 Sensiba San Filippo LLP (SSF) (Doc. #0482, p. 1)

The Bristol Bay watershed is critical to the wild salmon stock, which is crucial for the economic prosperity of the community and the globe and for its cultural value to the local people. Bristol Bay is one of the largest salmon runs in the world and has been largely untouched by development.

EPA Response

See EPA's response to comment 3.E.1.

3.E.61 H2T Mine Engineering Services, LLP (Doc. #0270, p. 2)

The PLP has long stressed the criticality of the project co-existing with the fishery and supporting additional economic opportunities for the region.

EPA Response

Section 4 of the FD provides the basis for EPA's determination that discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

3.E.62 Bristol Bay Native Association (BBNA) (Doc. #0802, p. 2)

While the residents of our region have integrated into the market economy through commercial fisheries, the livelihood of our residents are inextricably tied to our subsistence economy. As a region with a range of cultural identities, each of our Tribes retain the right to choose how to engage with these economies, which influence our Way of Life. In decision-making for our future, we will not compromise our sustainable natural resources for non-renewable resource extraction, lest we exchange a sustainable economy for a short-lived one.

The tourism sector of the local market economy is still developing. The remote and pristine nature of the Pebble deposit area allows for an uninterrupted natural experience that recreational users seek. The Kaktuli river is a premier destination for river floating and fly fishing. The Upper Talarik Creek is a world-class Rainbow Trout fishery which is an iconic destination, touted in magazines and articles by outdoor enthusiasts. The preservation of these recreational fisheries in their natural state is a benefit to all of Alaska's sport fishing industry.

EPA Response

See EPA's response to comment 3.E.1.

3.E.63 Theodore Roosevelt Conservation Partnership (Doc. #2664-8, p. 8)

I appreciate the opportunity to join so many other Alaskans this evening in urging the EPA to finalize the strongest, most comprehensive and enduring protections possible for Bristol Bay through section 404(c) of the Clean Water Act.

(...)

The TRCP is a nonpartisan conservation organization that represents more than 130,000 individual members across the country and more than 60 partner organizations. Our mission is to ensure that all Americans have quality places to hunt and fish, and I think Bristol Bay represents the very best of what

America has to offer in terms of hunting and fishing opportunities. Like many other commenters this evening, the TRCP's been advocating for these long term protections for Bristol Bay's world class hunting and fishing habitat for over a decade. Subsistence harvesters, recreational sports women and sportsmen, and hunting and fishing guides deserve to know that they can continue to count on the vital watersheds that are so critical for local food security, sustainable economic development, and world class recreation. The TRCP encourages the EPA to move quickly to finalize 404(c) protections while also encouraging the agency to strengthen the proposed restrictions on mining waste. Pebble Mine and other risky industrial projects should never be allowed to threaten Bristol Bay's fish and wildlife habitat, jobs, and hunting and fishing traditions.

EPA Response

See EPA's response to comment 3.A.8.

3.E.64 Mass Mailing Campaign (Doc. #2549, p. 1)

It is clear to anglers, hunters, and conservationists that this mine would threaten a sporting paradise. Bristol Bay is recognized as one of the finest fishing destinations on Earth. Tucked away in an isolated corner of southwest Alaska, it produces about half the world's sockeye salmon.

EPA Response

See EPA's response to comment 3.A.1.

3.E.65 Izaak Walton League of America Public Lands Committee and League Alaskan (Doc. #0131, p. 1)

I am writing on behalf of the Izaak Walton League Public Lands Committee and League Alaskan members to express our concerns regarding the potential 404 permit for the proposed Pebble Mine in Southwest Alaska's Bristol Bay region. We ask EPA to adopt the proposed protections that would keep this pristine region off-limits to risky large-scale mining development. It is clear to anglers, hunters, and conservationists that this mine would threaten a sporting paradise. Bristol Bay is one of the finest fishing destinations on Earth. In southwest Alaska, it produces about half the world's sockeye salmon. The proposed Pebble Mine open pit mine will threaten the headwaters of the Bay's two largest rivers, negatively impacting water quality and pristine fish habitat there and for 208 miles downstream. This puts our recreational fishing, as well as the area's robust commercial fishing economy, at risk.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.66 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 13)

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. [See Save Bristol Bay, Trout Unlimited Website, <http://www.tu.org/tu-projects/save-bristol-bay>.]

EPA Response

See EPA's response to comment 3.A.8.

3.E.67 Backcountry Hunters & Anglers (BHA) (Doc. #1749, p. 1)

As a supporter of Backcountry Hunters & Anglers, I believe an intact ecosystem in the Bristol Bay watersheds of Alaska is imperative to ensuring the future of hunting and angling traditions in the region. The science is clear. If built, Pebble Mine would permanently poison Bristol Bay's waters and imperil the greatest wild salmon fishery left on earth and all that it supports.

EPA Response

See EPA's response to comment 3.A.8.

3.E.68 National Association of Wetland Managers (NAWM) (Doc. #0606, pp. 4–5)

(2) Tribal Traditional Values & Culture

NAWM firmly believes in protecting the tribal traditional values, culture, health, and social connections centered on salmon fishing and other subsistence and cultural resources in the Nushagak and Kvichak River watersheds. Large-scale mining such as the 2020 Mine Plan puts both the salmon and Native peoples at extreme risk. Habitat destruction or modification associated with mining discharge will inevitably and directly affect all subsistence and cultural resources—including fish and other sources (e.g., wildlife, waterfowl, and plants). The impact will be incurred most severely and unfavorably by Alaska Native communities who live in the affected areas and depend on subsistence foods for their basic nutrition as well as cultural and social connections. [Ibid. p. 6-25]

Fourteen Alaska Native villages are within the Nushagak and Kvichak River watersheds, and essentially every household uses subsistence resources. [USEPA. 2014. Bristol Bay Assessment. p. 9] The Yup'ik and Dena'ina Indigenous peoples who live in these watersheds have a 12,000-year history of collecting wild subsistence resources (at least 4,000 years harvesting salmon) [USEPA. 2022 Proposed Determination. p. 6-20] and are “two of the last intact, sustainable, salmon-based cultures in the world.” [USEPA. 2014. Bristol Bay Assessment. p. 8] Subsistence foods comprise a substantial part of their diet, and their language and culture are inseparably connected to wild salmon and subsistence. [USEPA. 2022 Proposed Determination. pp. 6-20, 6-24] The proposed determination helps safeguard tribal traditional values and culture from damages by mining discharge.

(3) Economic Value

Beyond the irreplaceable ecological and cultural roles that salmon play, the salmon fishery provides a significant economic value to the region and beyond. Salmon resources are Bristol Bay's largest source

of economic activity, with an estimated annual value of \$2.2 billion. [Ibid. p. ES-3] Fisheries provide about half of all jobs, with commercial salmon fishing generating an estimated 15,000 jobs. Bristol Bay residents earn almost 28% of the income linked to the Bristol Bay salmon fisheries, [Ibid. p. 6-23. (Note: this income figure excludes subsistence activities.)) and over half of Bristol Bay salmon permit holders are residents of Alaska. [Ibid. p. 3-51 (2019 data)] Losing this economic resource would be a tremendous loss to the people and state of Alaska.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.69 Sitka Conservation Society (Doc. #0464, p. 1)

Bristol Bay is one of the most productive fisheries in the world. The fishery supports the world's largest Sockeye Salmon runs and one of the largest King Salmon runs remaining. This region alone is regularly responsible for over half of the world's total Sockeye Salmon harvest and roughly half of its total wild salmon harvest. This incredible productivity can largely be attributed to Bristol Bay's status as one of the last remaining 100% wild fisheries in the world, which serves today as a major marketing point for the sale of Alaskan salmon. Because the natural salmon habitat has been widely preserved, Bristol Bay doesn't have to rely on hatcheries to repopulate its waters like so many other fisheries across the country. The enormous quantities of salmon harvested in Bristol Bay feed people across Alaska, the nation, and the globe. Developing Pebble Mine would destroy the natural salmon habitat of Bristol Bay, threatening both the future productivity of the fishery and the reputation of wild Alaskan salmon.

EPA Response

See EPA's response to comment 3.A.8.

3.E.70 Sitka Conservation Society (Doc. #0464, p. 2)

Bristol Bay is crucial for sustaining Indigenous Alaskans' subsistence and cultural values. The vast majority of the 7,500 people living in the Bristol Bay region are Yup'ik, Alutiiq, and Athabascan tribal members. These Alaska Natives consume nearly 2.4 million pounds of salmon annually, which makes up 52% of the average Indigenous diet in the region. For generations, the Indigenous people of Bristol Bay have been able to sustain their families with wild caught salmon and the dozens of other plants and animals that depend on both the productive salmon runs and clean, unsullied waters. The abundance of Bristol Bay has traditionally provided food security to Western Alaska, but without this source of subsistence, many of these Indigenous people would no longer be able to afford life in rural Alaska and would be forced to leave their traditional homes. Mining development in the region would cause untold damage to Indigenous subsistence and irrevocably alter thousands of years of native culture. Protecting Bristol Bay from mining preserves a way of life for thousands of Alaskans today and all future generations of indigenous Alaskans who will follow.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.71 Sensiba San Filippo LLP (SSF) (Doc. #0482, p. 1)

Additionally, the mine threatens Alaska Native Tribes, who depend on the salmon for subsistence farming; without this salmon, thousands of people will be at risk.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.72 Bristol Bay Native Association (BBNA) (Doc. #0802, pp. 1, 2)

This is the last place on the planet with the world's largest wild sockeye salmon return, with a record year of 78 million returning for the 2022 fishing season.

(...)

The Kaktuli river provides up to 24% of the Chinook Salmon populations in the Nushagak drainage [Schwanke, C. J. 2007. Kaktuli River fish distribution assessment. Alaska Department of Fish and Game, Fishery Data Series No. 07-78, Anchorage]. Placing mine waste capable of acid mine drainage leaching into the Kaktuli River is an unacceptable adverse change to these waters. These are critical Chinook salmon habitat that provide a staple subsistence resource, which have been used in cultural and ceremonial practices by our region for millennia.

EPA Response

See EPA's response to comment 3.A.8.

3.E.73 Johns Hopkins Center for a Livable Future (Doc. #0822, p. 2)

Salmon is also a key part of Bristol Bay Alaska Native communities' cultures — their relationship to salmon has been maintained for the past 4,000 years (EPA, 2014a; EPA, 2022). These communities practice a subsistence-based way of life and rely heavily on Bristol Bay salmon as a source of important nutrients like protein and omega-3 fatty acids (Johnson et al. 2009; EPA, 2014a; EPA, 2014b; EPA, 2022). Moreover, virtually every household in the Bristol Bay watershed uses subsistence resources and salmon constitutes at least 52 percent of the subsistence harvest in this region (EPA, 2014a). Yet, this highly sustainable relationship would be threatened by the proposed Pebble Mine, which would operate for only 20 years but could leave behind a toxic legacy in perpetuity (USACE, 2019; EPA, 2022).

Food security and the global seafood supply are threatened by the impending crises of a changing climate, growing population and myriad other global stressors. Wild Bristol Bay sockeye salmon represents a vital resource to the health of future generations, both locally and around the world as part of the global seafood supply. We urge the U.S. EPA to consider this comment, enforce the determination under consideration, and ultimately uphold its responsibilities under the Clean Water Act to protect the

survival of the Bristol Bay sockeye salmon fishery and the larger public, environmental and economic health of the region.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.74 United Tribes of Bristol Bay (UTBB) (Doc. #0823, pp. 3–4, 5)

A. The unique nature of the salmon-based subsistence culture practiced by the Yup'ik, Dena'ina, and Alutiiq peoples of Bristol Bay necessitates section 404(c) action.

The Yup'ik, Dena'ina, and Alutiiq peoples of Bristol Bay represent three of the last remaining “salmon cultures” in the world.[U.S ENVTL. PROT. AGENCY, AN ASSESSMENT OF POTENTIAL MINING IMPACTS ON SALMON ECOSYSTEMS OF BRISTOL BAY, ALASKA App. D, at 164 (2014) (EPA 910-R-14-001C).] This salmon culture has gone unbroken for at least 4,000 years.[Id. at 173.] This unbroken link is reflected today in the fact that Bristol Bay salmon consist of nearly 82% of the subsistence diet in the region.[Id. at 240.]

Key to this culture is the connection between subsistence and employment. Neither state nor federal labor statistics identify subsistence practices as “employment,” thus traditional employment reports show a high level of unemployed residents in the region.[Id. at 247-248.] However, the subsistence way of life is already year-round, full-time work.[Id. at 248.] Those individuals practicing a subsistence way of life devote innumerable hours per year preparing nets, boats, smokehouses, and other equipment just in preparation for the summer salmon runs.[Id. at 250.] The Report's interviews of residents show that subsistence is viewed as a full-time job, while wage employment is viewed more as a method to facilitate subsistence practices.[Id.] This view of subsistence as full-time employment also translates into prevailing views of material wealth. When asked by the authors how they define “wealth” or “riches,” fifty out of fifty-three respondents defined it in terms of a full freezer or a good stockpile of subsistence foods.[Id. at 278.] Bristol Bay's Native residents consider themselves the richest people in the world.[Id. at 279.]

Beyond just subsistence harvests, salmon also serve an important cultural role. The Yup'ik, Dena'ina, and Alutiiq residents of Bristol Bay are “salmon people.” As one resident put it, “[s]almon more or less defines this area. . . . It is who we are; it defines us.”[Id. at 163 (emphasis added).] This identification as “salmon people” permeates into nearly all aspects of Native culture. It is incorporated into their language, visual art, songs, and dance.[Id. at 219.] This salmon-centric universe is also incorporated into Christian religious teachings. The Russian Orthodox Church—the predominate religion in the region—integrates several salmon ceremonies into church doctrine and instruction.[Id. at 291.] Annual salmon-based Orthodox practices include the “First Salmon Ceremony” and the “Blessing of the Waters Ceremony.”[Id.] These examples are only a small sampling of the salmon-centric culture that exists in Bristol Bay, but they demonstrate the unique value that the five species of Pacific salmon have to the region's Native people. Salmon are more than just a food source. They are the foundation of an entire culture which has existed with little interruption for nearly 4,000 years. If the local interviews

demonstrate anything, it is that the salmon-based culture described above is one that the Native people of Bristol Bay desire to keep.

B. Bristol Bay's salmon culture will be threatened by the Pebble Mine.

Of the BBWA's fifteen chapters, four directly address the potential mining impacts to Bristol Bay's salmon-based subsistence culture. As with the above discussion on the Report, it is beyond the scope of this comment to reiterate or summarize the findings in all the chapters, but there is a central theme evident throughout—the development of large-scale hard rock mineral deposits in the Nushagak and Kvichak watersheds will have a devastating impact on salmon—the foundational subsistence species in the region.

(...)

Changes are not just limited to terrestrial animals. Members of UTBB's own leadership have noticed declines in sockeye salmon in the upper-Mulchatna and Kaktuli rivers. This decline places a difficult burden on subsistence users because the spawned-out sockeye salmon in those rivers (referred to as "red fish") play a vital role in filling out the subsistence harvest. [One village elder described versatility of red fish in the subsistence cycle: "[t]hat spring water [at Kijik]. It does not freeze. That is why you can go over there and get a sockeye salmon in March; it might have a green head, and it's red, but it's still a sockeye salmon. You can go over there on New Year's Day and get a fresh sockeye salmon." Id. at 199. See also Id. at 267 (discussing the harvest of late-season sockeye salmon).] It is no secret to those who live in the area, and who have traditional knowledge of the land, that mineral exploration and development is already having negative impacts on subsistence.

EPA Response

See EPA's response to comment 3.E.1.

3.E.75 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 12–13)

The Alaska Native people of Bristol Bay come from three different cultural traditions— Aleut, Yup'ik, and Dena'ina 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 values, such as generosity, respect for elders, self-esteem, and cultural respect. [See Fall, James A., et al., An Overview of the Subsistence Fisheries of the Bristol Bay Management Area, at 2-3, ADF&G Special Public. No. BOF 2009-07 (Nov. 2009), available at www.adfg.alaska.gov/specialpubs/SP2_SP2009-007.pdf.]

Bristol Bay communities are also geographically isolated from the rest of Alaska and, in most cases, from one another. [See id.; Duffield et al., Revised Final Report, Economics of Wild Salmon Watersheds: Bristol Bay, Alaska, at 23 (Feb. 2007) (prepared by University of Montana and Bioeconomics, Inc. for Trout Unlimited-Alaska), available at

<http://www.bber.umt.edu/pubs/survey/Economics%20of%20Wild%20Salmon%20Ecosystems%20in%20Bristol%20Bay%202007.pdf>.] 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.[See Fall, supra note 25, at 2.] 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.[Between 1975 and 2007, subsistence salmon harvests have averaged about 152,000 fish per year. See id., at 5. See also, enclosed Appx. D at pp. 2669 to 2719 (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)).] 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.[See enclosed Appx. D at pp. 2696 to 2697 (Callaway, at pp. 27-28).] Commercial fishing is also the major economic engine for Bristol Bay and other Alaskan coastal communities.[See Alaska Commercial Fisheries Entry Comm'n, 2012 Annual Report, at 1 (2013), available at http://www.cfec.state.ak.us/mnu_Annual_Reports.htm.] Any damage to salmon resources in Bristol Bay would lead to poorer nutrition, as well as economic, social, and cultural hardship.[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 [hereinafter "ISER Report"].]

EPA Response

See EPA's response to comment 3.E.1.

3.E.76 Environmental Protection Network (EPN) (Doc. #0857, p. 3)

These watersheds are also home to two Alaskan Native cultures who rely on the salmon fishery for 52% of their subsistence harvest and have been an integral part of their culture for 4,000 years. There are 14 Alaskan Native villages within these watersheds.

EPA Response

See EPA's response to comment 3.E.1.

3.E.77 American Fisheries Society (AFS) and Alaska Chapter of AFS (Doc. #0813, p. 2)

These salmon support major commercial, subsistence, and sport fisheries, providing jobs and food security to rural communities and thousands of people, and are a vital cultural element for Alaska Native peoples (Halas and Neufeld 2018; Tiernan et al. 2021).

EPA Response

See EPA's response to comment 3.E.1.

3.E.78 United Fishermen of Alaska (UFA) (Doc. #0828, pp. 1–2)

The EPA has an opportunity to finalize action under Section 404(c) that would go a long way in the effort to secure comprehensive and permanent protections for Bristol Bay and end the uncertainty that, for far too long, has clouded the future of Alaska's fishing industry, the citizens of Bristol Bay, and of all Americans who seek to conserve and benefit from the Bristol Bay salmon fishery. Please join with us to ensure that salmon can continue to thrive and provide our fellow Americans and the world with renewable, nutritious, wild seafood and support our commercial fishing families for generations to come.

EPA Response

See EPA's response to comment 3.A.8.

3.E.79 Oceana (Doc. #1738, p. 1)

Bristol Bay in western Alaska is home to the largest runs of wild sockeye salmon in the world and is one of the world's last great salmon strongholds. As salmon decline throughout the Pacific it is critical that we protect the pristine habitats where they are still thriving. All five species of salmon run into Bristol Bay, including more than half of all the world's sockeye salmon. Thousands of people rely on Bristol Bay for jobs, economic stability and a subsistence way of life that has existed for generations. Bristol Bay's importance is clear, as is the science—if built, the Pebble Mine would permanently poison Bristol Bay's waters and imperil the greatest wild salmon fishery left on Earth.

EPA Response

See EPA's response to comment 3.A.8.

3.E.80 National Wildlife Federation Action Fund (Doc. #1740, p. 1)

Pebble Mine would cause far-reaching, catastrophic harm to thriving habitat that supports hundreds of fish and wildlife species and the most valuable wild salmon fishery in the world, threatening thousands of jobs, the salmon-based cultures of Alaska Natives, and unparalleled recreational opportunities.

EPA Response

See EPA's response to comment 3.A.8.

3.E.81 Mass Mailing Campaign (Doc. #2562, p. 1)

The science is clear that allowing a gold and copper mine to be built in the heart of the Bristol Bay watershed would cause irreversible harm to this unique and special ecosystem and to the communities and wildlife that rely on it. The Bristol Bay watershed hosts the world's largest sockeye salmon fishery,

and its rivers, streams, and wetlands have supported a subsistence-based way of life for thousands of years.

EPA Response

See EPA's response to comment 3.A.8.

3.E.82 Trout Unlimited (Doc. #2664-5, p. 6)

Including our general members and supporters, we also have many business members who would be directly negatively impacted by the proposed Pebble Mine, and would also benefit directly from conserving and preventing mine ways from being disposed in this really critical salmon spawning area, and that is upstream from many important recreational fisheries. A couple of points, I've been talking with Alaskans and paying attention to this issue for over a decade, and the time is now to move forward with these protections. This was originally requested by tribes and commercial fishermen and sportsmen and women. There's been a litany of science that has come into play, and this is supported by Alaskans.

EPA Response

See EPA's response to comment 3.A.8.

3.E.83 Cook Inletkeeper (Doc. #2664-18, p. 15)

Fishermen and tribes in Bristol Bay have had to live with the uncertainty around this proposed mine for over a decade as have the rest of Alaskans who are paying attention to the valuable resource that is our salmon run. We're lucky enough that the salmon keeps showing up, and we don't need to do anything else to damage those chances. Once again, further delays are unnecessary, I support a strong 404(c) veto that protects Alaska's sustainable local economies and communities, and make sure that our salmon runs are here for my children and everyone else's.

EPA Response

See EPA's response to comment 3.A.8.

3.E.84 Businesses for Conservation and Climate Action (Doc. #2664-17, p. 15)

I'm speaking to you tonight in strong support of EPA's proposed action, the record clearly supports this action, and EPA's process has been above board. Indeed, this proposed action epitomizes the purpose of the 404(c) process. BCCA's members include fishermen, tribal members, seafood harvesters, and wholesalers throughout Alaska, and they depend on the wellbeing of the salmon runs throughout the Bristol Bay watershed. These businesses are clearly threatened by the existence of any hard rock mining within the Bristol Bay watershed, and the EPA's proposed action will protect their ability to continue prosecuting these fisheries and supporting their way of life. And again, in conclusion, we support this proposed action and urge your expeditious completion of this 404(c) process.

EPA Response

See EPA's response to comment 3.A.8.

3.E.85 Anne Kahn (Doc. #2664-28, p. 22)

And there's no question that this would happen with Pebble, were it to be developed. And the risk of this, as most people have stated, this incredible salmon fishery is unconscionable. I live on Lake Clark, I'm a subsistence user, but I fully support the commercial salmon industry, and the tourism industry, which benefits hugely from this incredible resource.

EPA Response

See EPA's response to comment 3.A.8.

3.E.86 Les Gara (Doc. #0132, p. 1)

The Pebble Mine is a Toxic Danger to the World's Greatest Wild Salmon Waters and Runs, and to World Class Wild Rainbow Trout and Grayling and Other Fish

In a normal case I'd look to state law to protect Alaska's people and the fish we rely on. A vast majority of Alaskans oppose this project, as it poses a great risk to livelihoods, food, fish, and to a way of life for people in the Bristol Bay Region, and even outside the region. Alaskans care about fish, and are unified on the protection of our fish runs.

But in this case Alaska has a Governor who has explicitly spent state money to side with the Canadian Pebble Mine project owners, and stood against Alaskans in favor of the unacceptable risk this mine poses to people, and the fish and water Alaskans rely on. Therefore, Alaskans need to look to every available law that would protect them from a toxic mine at the headwaters of the world's greatest remaining wild salmon runs.

EPA Response

See EPA's response to comment 3.A.8.

3.E.87 Les Gara (Doc. #0132, p. 2)

Last year 66 million sockeye salmon returned to Bristol Bay.

The Nushagak River, which would be put at risk by a catastrophic spill, is home to Alaska's largest wild King Salmon returns. In evaluating this mine proposal, the law requires an evaluation of potential fisheries impact from mine pollution. The highest quality wild salmon run in the world requires that the risks posed by this mine be smaller than risks posed in parts of the nation where a toxic leech would cause far less damage to people, a way of life, or wild fish.

Endless comparisons can be made to other mines, some that have had catastrophic failures after false promises of foolproof safeguards, and some that have not. But none of those are located by communities

where the way of life is tied to the world's greatest wild salmon runs. Even if you didn't think this was the wrong mine in another area, it is in the wrong place. The risks are too great given the reality of the damage that is threatened by this project.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.88 Blue Ribbon Task Force Culinaricians, et al. (Doc. #0829, p. 1, 2)

The value of Alaska's Bristol Bay ecosystem and the wild salmon fishery it sustains is immeasurable. Protecting the fishery, the communities it supports, and the quality seafood it supplies is a top priority for our culinary community.

Providing sustainable seafood to our customers is fundamental to our businesses. As the demand from U.S. consumers for safe, sustainable seafood continues to grow, we are working hard to source responsible products. We depend on access to healthy fisheries every day and we rely on having Alaska's Bristol Bay wild-caught, sustainable salmon on our menus.

The science has shown that the proposed Pebble Mine, a giant mining operation at the culturally and biologically vital headwaters of Bristol Bay, threatens Alaska Native subsistence fishermen and commercial fishermen. It likewise threatens businesses and industries nationwide, including ours, that depend on the productivity and health of Bristol Bay's wild salmon.

(...)

Bristol Bay salmon is one of our country's most valuable renewable and sustainable resources, and it is the envy of the culinary world. People across this country want to support healthy oceans, thriving wild fisheries, and coastal communities and cultures. Every day, we work with, buy from, and serve food to people who know that protecting delicious, sustainable seafood is imperative to a healthy food system that feeds us, our children, and the generations to come.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.89 Thomas Pebler (Doc. #0189, p. 1)

If The Pebble Project were to be permitted, it would inevitably destroy the Bristol Bay fishery and the economy as a whole. This would be an irreparable disaster for Alaska and for the world. For the sake of the livelihood and indigenous tradition of the citizens of Bristol Bay and Alaskan and United States taxpayers, and for the sake of local renewable prosperity, please use any and all facility of the EPA to completely deny the development of the proposed Pebble Mine.

EPA Response

See EPA's response to comment 3.A.8.

3.E.90 City of Dillingham (Doc. #2667-1, p. 16)

Not only do our local residents depend on the fishery and the numerous other natural resources, but many parts of the world depend on our salmon. We're, we're basically feeding the world with the salmon fishery in our region. The City feels we cannot put that salmon fishery at risk.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.91 Hazel Nelson (Doc. #2667-15, p. 43)

But I support the 404C action. It's very high in support among all of our tribes, our communities, our commercial and sport fishing businesses, and all the other stakeholders who rely on our salmon runs. Between 70 and 80% of our shareholder base oppose the Pebble Mine, and greater than 80% are concerned about the impacts that Pebble would have on the fishery.

We want effective, durable, and timely action to protect the North and South Fork Kookotuli, and Upper Talarik Creek watersheds, as you have proposed, from the risks of large-scale, hard rock, pore-free mining, such as Pebble.

EPA Response

See EPA's response to comment 3.A.8.

3.E.92 Alana Kansaku-Sarmiento (Doc. #2667-19, p. 52)

Not advancing forth those, for enforcing protections, and allowing Pebble Mine would have a grossly negative impact on my life, on this region, on countless lives, alive now and in the future. I have a partner who is a sports fishing guide up on Iliamna, and he's actually why I'm here today. And sports fishermen and commercial fishermen have a lot not in common, but this is definitely something that we - that brings us together, that allows to commune with tribal - for the tribal Elders and indigenous folks in the region.

EPA Response

See EPA's response to comment 3.A.8.

3.E.93 Norman Van Vactor (Doc. #2667-39, p. 91)

I have an obligation and a duty to my fellow workers and the fisherman, to try to keep us all safe, because only by keeping ourselves safe in the next week or two are we going to be in a position to process what we're all hoping is a record breaking run in Bristol Bay.

I was thinking just as I was sitting in the, in the audience this morning, the analogy of the threats that we've been living with. The last two and a half years, we've been living with the threat of COVID. For the last 21 years, this region has been living with the threat of - of the Pebble Mine. And you folks at EPA are

literally our mask. You are our hope. You are our vaccination - that this generation, and the generations that follow us don't live under that very same threat.

EPA Response

See EPA's response to comment 3.A.8.

3.E.94 Margie Hastings (Doc. #2667-10, pp. 32–33)

And I wanted to let you guys know, because Pebble is not at its stage of digging and ruining the land, our people are able to look forward to the annual salmon that comes. Annual salmon before it comes, we watch the river break. Everybody in the community goes down to the river, and watch the river go, because that's a promise that the salmon's coming.

(...)

And so, I want to say that's what happens in small communities. We look forward to fish. Fish is our gold. Right now, my gold, a little bit of it is hanging.

EPA Response

See EPA's response to comment 3.E.1.

3.E.95 Bristol Bay Native Corporation (Doc. #2667-12, pp. 36–37)

I'm a member of the Bristol Bay Native Corporation, Board of Directors. I've been a 30 year Tribal Chief of Curyung Tribal Council. I've been a fisherman for 57 years. My great-great grandfather, 146 years ago, arrived in Bristol Bay. Before any cannery was built, he had three (unintelligible). He was very active in the fishery, before any canneries. He had money in the first, first cannery built across here at Carmel (phonetic). My great-grandfather, John W. Nicholson (phonetic), put 60 years in the sailboat. He said sailboats should never be getting rid of in Bristol Bay, because we're going to end up with nothing but damned doctors and lawyers. It's too easy to fish on a powered boat.

My father put damned near 60 years in, in Bristol Bay. This year, if my grandsons let me, I hope to retire after 57 years. I have four grandsons on my boat. They're taking on the tradition. My family had subsistence in Bristol Bay for thousands of years. Subsistence is the most important fish you can put in front of an individual in Bristol Bay. We live and die by our fish.

EPA Response

See EPA's response to comment 3.E.1.

3.E.96 Dan Nanalook (Doc. #2667-13, pp. 38–39)

Thank you for coming to listening to us. Pebble Mine is detrimental to our livelihood, our way of life. We have said this - said that again, and again for the last 18 to 20 years. We are asking you again - no.

I'm here, testifying - not for me, but for my children, and my grandchildren. The dollar will never give them the taste of salmon, dried, smoked. The dollar will never give them the taste of salmon. I am asking, pleading with you - no to Pebble Mine. Our waters are sacred to us. Salmon is our life. My grandfather, my mom and dad are both gone. They taught us to respect the salmon. They taught us how to put it up. They taught us how to cure it and, and to give it to our family. The first catch is always given to our Elders. The same thing is being taught to my children, and my grandchildren. Please, listen to what our voices are telling you.

EPA Response

See EPA's response to comment 3.E.1.

3.E.97 Bertha Pavian-Lockuk (Doc. #2667-14, pp. 40-41)

But to give you a little background, I was raised - I, I'm the youngest of seven. Both my parents are all from - my grandparents and my parents are from Alaska. And we were raised on subsistence, subsisting off from our land, our waters, even the air - the birds that come in, in each season. And with that being said, our subsistence lifestyle, which each and every one in here is carrying on - my children and my grandchildren are still subsisting to date, and we are - we do our - we are teaching our children. We are continuing to teach our lifestyle to our kids, of what we have learned from our parents and grandparents.

With that being said, our, our subsistence lifestyle provides healthy food. It, it keeps our community members healthy; may they be hospitalized, or just total stay-home residents at home. And we have gone through this COVID - we just - we are still going over it - subsistence was our only ways - only source of food that we were able to survive by.

And, and with that being said, with this mine - Pebble Mine development, and the dam being set, the most recent - I mean, not the most recent - each, each tundra has a beaver dam that's being built by a beaver. And it overflows every season, every summer, whatever dam, wherever that dam is, it's always overflowing. I am sure this dam that will be built for this mine will be no different. And it will be very toxic, and it will do a permanent damage to our environment, and the food source that we have on our land, from our land, our - that we use year around.

EPA Response

See EPA's response to comment 3.E.1.

3.E.98 Bertha Pavian-Lockuk (Doc. #2667-14, p. 41)

And it's not just salmon that we rely on. For economic purposes, salmon is very versatile product for us - so we can dry it, we can boil it, and whatnot. And we always share, share this product - we share it everywhere. And the last information that I have learned so far is, the Bristol Bay region is our last healthy salmon producing bay in the world. So it's very vital that it stays protected, along with us

Natives. And as Natives, Alaska Natives, I'm sure we do have every right to live a healthy life, too, as we are.

EPA Response

See EPA's response to comment 3.E.1.

3.E.99 Hazel Nelson (Doc. #2667-15, pp. 42-43)

And all of us in my family have been a fishing family. You, you know, everybody here from Bristol Bay grows up fishing. And every aspect of our lives is based around harvesting.

Just like the Midwest is the breadbasket of the - I don't know if it's the US or the world - we are the salmon basket. And protecting the salmon in Bristol Bay is, I think one of the most important things that this Administration is going to do. So I really want to express appreciation for all of you coming out here today to hear us, to hear our stories, and to know that we are real people, and that our lives are at stake. The future of all the future generations is at stake, because this mining company has been determined for about 20 years now, you know, to progress with their plan, which will kill off our salmon population. And it will leave nothing but destruction. And we recognize that this Administration knows that. We respect the backbone that you are carrying, and that you have made a clear decision to help us in this fight.

EPA Response

See EPA's response to comment 3.E.1.

3.E.100 Portage Creek Village Council (Doc. #2667-16, p. 46)

The 404C process has given us little people our voice, for our concerns to be heard. I'd like to reiterate all the words of those that spoke before me, on the importance of clean water. As kids, when we complained about rain - God, we need it now - my dad reminded us that water gives us life. Only now, I am realizing that truth to that statement.

I grew up - you heard Natalie Wassilliey speaking. I grew up with the same grandparents. I claimed them last. The - science has proven what our elders and our indigenous people already know. The Arctic Variant Study is proof that our people need our traditional diet to survive. Science - and, and that's why we need to protect our region, to revive that, and incorporate the 2014 PD. We urge permits protections for Bristol Bay.

EPA Response

As explained in Appendix A of the 2020 PD, the 2020 Mine Plan is based on new assumptions, higher-resolution aquatic resource mapping, additional environmental baseline data (PLP 2018a) and water resource impact information (i.e., analyses included in the FEIS), and more sophisticated modeling than the analysis in the 2014 PD. Given the evolution of the scientific and technical record since 2014, EPA determined that it was

appropriate to develop the 2022 PD using the most current information available to EPA, including the 2020 Mine Plan and the FEIS. Also see EPA's response to comment 7.0.1.

3.E.101 Kim Williams (Doc. #2667-17, pp. 47–48)

As a subsistence fisherman, my smokehouse is full of reds. This morning, I got three reds, and one king. I have given those away to my, my brother, who needs them for his fishing company's picnic, of all things, because they don't have fish yet. That's what we do - we share. And that is something that you can't - it's something that we do. It's ingrained in us. And Robin Yugerd (phonetic), he's flying out of here because he needs to go check his net. We are tied to our tides. We live by our tides here in Bristol Bay, because the salmon are coming, and we need to be ready.

My dad, as a commercial fisherman, will put in a hundred thousand pounds every year, and he'll say, generally, 'Enough. It's good enough. It'll feed our family. We'll live through the winter. And we are okay.' And that, as Yupik people, we do. We don't take, and take, and take. We take what is good enough for us.

EPA Response

See EPA's response to comment 3.E.1.

3.E.102 Wassiliisia Bennis (Doc. #2667-18, p. 50)

We grew up in a fishing community. My family commercial drift, and set net. We all subsist for fish. We hunt for large and small game. And we gather plants and berries - we did that all our lives. Just the thought of not being able to pass my knowledge and experience to my grandchildren and their children brings me to tears. When this first started several years ago - geez, it's been 20 years - I was at the fishing table with my daughter, and my grandchildren, teaching them how to respect and process what we catch. This is our way of life.

EPA Response

See EPA's response to comment 3.E.1.

3.E.103 Thomas Tilden (Doc. #2667-28, pp. 66–67)

And as, well, you know by many folks, I mean, we, the people of Bristol Bay, the Aleuts, the Athabaskans, and the Yupik Eskimos, we have survived on this, this for years, centuries - thousands of years - it has sustained us. And I believe that it will sustain us in the future.

The other day, I was able to hold my granddaughter, who was crying, and I - a friend had brought me a piece of king salmon. And I put, fixed a little piece, and I put it in her mouth, and she quit crying. It was wonderful, absolutely wonderful. My grandson right now is fishing across the river, for subsistence kings. And I think it's really important that you know the importance of this salmon product to us as a Alaska Native people. It is who we are. It is our economy. It is our subsistence lifestyle, and is very important to all of us. And we share this. We share this, not only with the State of Alaska, but the United States of America. We share, share it internationally. It is a product that is important to all of us.

EPA Response

See EPA's response to comment 3.E.1.

3.E.104 Todd Fritze (Doc. #2667-30, pp. 70–71)

Oh - this weekend, the first of my 10 grandchildren arrive. And they come from all over Alaska. And they come for the fish, and for the - I mean, that's, that's the big reason. Grandpa takes 'em fishing. We go subsistence fishing. There's commercial fishing involved. My son has a, a permit. So there's all of that.

And to kind of bring this first - full circle for you - the rivers will survive anything Mother Nature throws at 'em. But they can't survive the man made mines. I ask you to please give this area full, permanent protection immediately, or as quickly as possible, so that my great-grandchildren can continue to come and fish, as well.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.105 Andrea Hurley (Doc. #2667-37, p. 88)

I have a grandson, too. He's going to be my next generation. They're going to be fishing when they get older. And I don't want them - when they get older, I hope they don't see this happen, because we're going to teach our young ones how to fish, how to live off our land, and how to hunt, and how to pick berries, split fish, and everything. And Pebble Mine can go to hell.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.106 Darlene Wyagon (Doc. #2667-42, pp. 98–99)

My grandparents lived off the land. They fished, and migrated with the fish. And then when they opened the commercial fisheries, they went to Nushagak, and the Ekuk's superintendent talked my grandma and grandpa to move to Ekuk, so that's where I fish now, commercially fish. And we've been - I'm the third generation from my grandparents. So fishing is very important. And we live off the fish.

As a matter of fact, when we went down there, moved from - a friend came up, and he gave us the freshest, best Ekuk fish dinner, and of course, fish cooked.

So we really appreciate that if you could make it happen not to have Pebble Mine operate, because their dams, and their holding things will really contaminate the fish.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.107 Maria Dosal (Doc. #2667-46, pp. 104–105)

Our family, like many families here in this region, depend on a strong ecosystem such as ours, for our survival. Our values include harvesting subsistence, as you know, in order to survive here and thrive here in this beautiful, untouched lands of our ancestors.

EPA Response

See EPA's response to comment 3.E.1.

3.E.108 Dagen Nelson (Doc. #2667-47, p. 106)

I have fished commercially and for subsistence use all my life. I am self-supporting and will never be bought by others who seek to change my lifestyle, and the land on which I call home.

EPA Response

See EPA's response to comment 3.E.1.

3.E.109 Curyung Tribal Council (Doc. #2667-51, p. 115)

The Bristol Bay watershed is more than just a home to the largest world's sockeye salmon. It is our home, and our way of life. It is a home away from home from a lot of our friends and family who come here for commercial fishing, sports fishing, and for other family members that had to move away. They still return home to subsist and be with their families, to continue following their traditional way of life.

EPA Response

See EPA's response to comment 3.E.1.

3.E.110 Marian Giannulis (Doc. #2664-4, p. 5)

I want to thank the EPA for taking public comment today for the opportunity to weigh in to protect one of the most incredible places on the planet. Clean Water Act protections were originally created to protect places like Bristol Bay, and I want to thank you for upholding them and moving forward in creating lasting protections for this place. I'm speaking today as a lifelong Alaskan and avid recreational angler and a subsistence user, and I recognize the true value in the Bristol Bay region being for the incredible salmon runs that it hosts and the life that brings to the whole region through its wildlife, through its people, and through its economy.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.111 Deirdre Hill (Doc. #2664-6, p. 7)

Salmon and the supporting environment of the rich Bristol Bay area are what brought my ancestors to the area, and has sustained my extended family and myself ever since. Growing up, I enjoyed commercial

fishing on a set site, then on drift gillnetters, and spending late summers up the Kvichak River and on Lliamna Lake with my family, collecting our fish and berries for the winter. Commercial fishing put me through college, helped me fund the construction of my sport fishing lodge on the Naknek that I ran for 11 years. Fish and the supporting environment has supported me and my family for generations. My son's now also commercial fish in Bristol Bay, and we all consider ourselves rich when we peer into our freezers and find the wild Bristol Bay salmon we so we rely on.

EPA Response

See EPA's response to comment 3.E.1.

3.E.112 Greta Goto (Doc. #2664-14, p. 12)

My family, and I have relied on subsistence fishing, including salmon and other fish that our waters provide such as herring and pike and trout, as well as berries and game. I worked as a processor in the commercial salmon fishery when I was younger, and both my husband and my younger daughter currently work in the commercial salmon fishery. The salmon fishery provides for our livelihood, both in terms of cash livelihood, as well as food and sustenance. I'd like to thank the EPA for re initiating its Clean Water Act review of the proposed Pebble Mine, and revising the proposed determination.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.113 Heidi Kritz (Doc. #2664-23, p. 20)

I have participated in all the EPA hearings, since I was 14 years old. Through this time, we've gained a tremendous, regional, statewide, national and international support in protecting the world's last salmon run. Thank you EPA for this opportunity to make a comment, which mine has always been to please finalize taking action on the 404C process for those who depend on it for food sovereignty, traditional use, commercial use, and the health of those who live in the region, and directly depend on the land and waters. This process has always happened at the height of subsistence times, and we don't want to keep having this on the back of our mind while out in the land. Please listen to the people of the region, and those who depend directly on our resources.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.114 Warren Kasayulie (Doc. #2664-29, p. 23)

I commercial fish since I was 13 years old. And this Pebble Mine, it wouldn't benefit nothing, even though it has a 27 year lifespan. That's nothing compared to the salmon fish, swimming up [inaudible 01:20:29] River for over a millennium. And up to Wood River. It's nothing. It's 27 year lifespan that mine has, that they planned in disrupting 45 miles of the Lliamna Lake area ecosystem, not only to the Lliamna Lake area ecosystem, also on the [inaudible 01:20:49] side, where the river branches off, the

Matanuska River. These rivers been supporting salmon for, like I said, for over a millennium. And I commercial fished from when I was 13 years old, up until 1993. So that's from the mid seventies, up until 1993, is at least 27 years of my life. I'm 55 years old now, and I have four grandchildren.

(...)

I'd like to encourage the people that have grandchildren and family member that subsist off the [inaudible 01:21:25] and Lliamna Lake... The [inaudible 01:21:28] River, and the Wood River, and the [inaudible 01:21:32]. We have at least five rivers of that branch onto the [inaudible 01:21:38] River, all the way up to the king, Chakachatna River. And this mine wouldn't benefit nothing. When they're done one, when the Pebble partnership who are involved with Pebble partnership, when they're done, long after when they're done, my grandson will be []

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.115 Michael Wyagon (Doc. #2667-52, p. 116)

Commercial fishing is all I know how to do, ever since I was a little boy, even subsistence, rely heavily, heavily on that. I feel like my Elders would want me to say this - save our people, save our land, save our, save our way of life.

EPA Response

See EPA's response to comment 3.E.1.

3.E.116 Fritz Johnson (Doc. #2664-38, p. 28)

I've built my life around commercial fishing here and not much has changed since the first environmental impact studies were worked on. If anything, the fishing or the fisheries salmon resource in our area has gotten better. Something that some biologists attribute to in fact a warming climate here.

(...)

Beyond that, it's frustrating for those of us who live here and for those of us who depend on this industry, not just the industry, but the subsistence resources of people that have lived here forever.

(...)

Please, listen to the people who live here. The many people that depend on this fisheries resource, the jobs that it provides, it's huge.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.E.117 David Park (Doc. #2666-4, pp. 14–15)

And what I'd like to talk about is the Safe Water Act. You know, EPA and Pebble have done their homework over, and over, and over again, and see how things like this won't happen, 'cause they know how touchy a situation this place is. And it's just not about salmon. You know, Alaska doesn't control salmon. Bristol Bay Native Corporation doesn't control salmon. They have no processors in Naknek, Dillingham - they don't buy and sell fish.

All the fish that's provided that people buy are from out of state - Portland, Washington, and Oregon. And people in Dillingham and Bristol Bay just hit their little recorders, and listen to all the out of state people that run Alaska. And you guys, the people in Bristol Bay don't say nothing about that. That hurts.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.F Importance of the Region's Ecological Resources

3.F.1 National Association of Wetland Managers (NAWM) (Doc. #0606, p. 2)

(1) Ecological Protection

The pristine wetlands and waters in the Bristol Bay watershed support and sustain a uniquely diverse and productive wild salmon population unlike any other in North America (and likely the entire world), largely due to the intact and connected aquatic habitat from headwaters to the ocean. [USEPA. 2022. Proposed Determination of the U.S Environmental Protection Agency Region 10 Pursuant to Section 404(C) of the Clean Water Act, Pebble Deposit Area. Region 10, Seattle, WA. [hereafter "USEPA. 2022 Proposed Determination."] p. ES-1] Bristol Bay boasts the world's largest Sockeye salmon runs (making up about half of the world's total Sockeye), one of the world's largest runs of Chinook salmon, and significant populations of Coho, Chum, and Pink salmon. This highly productive ecosystem includes at least 29 species of fish, over 190 species of birds, and more than 40 terrestrial mammals. [USEPA. 2014. An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska. Executive Summary. Region 10, Seattle, WA. [hereafter "USEPA. 2014. Bristol Bay Assessment."] p. 6]

EPA Response

See EPA's response to comment 3.A.1.

3.F.2 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, pp. 2–4)

The many rivers, streams, lakes and wetlands that feed into Southwest Alaska's Bristol Bay produce some of our most abundant, diverse and valuable wild salmon populations in the world. All five species of North American Pacific salmon return to the Bristol Bay region, including the largest and most

valuable sockeye salmon runs in the United States and a Chinook salmon run rivalling any other on the planet. The fish and wildlife of the Bristol Bay region, and salmon in particular, are the centerpiece of the region's economy, culture and communities. More than 78 million sockeye salmon returned to the Bristol Bay region this year, which was the largest run on record. [Alaska Dept. of Fish & Game, Bristol Bay Daily Salmon Run Summary (July 7, 2022) available at <https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.harvestsummary>] These huge annual salmon returns contribute to the entire region's productivity and biodiversity, and are the result of the region's high-quality and diverse aquatic habitats, the hydrologic and chemical connectivity between surface and subsurface waters, and the relatively low levels of human development. [See EPA, An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay Alaska EPA 910-R-14-001ES at ES-8 and ES-25 (Jan. 2014) hereinafter EPA Watershed Assessment.]

Bristol Bay is the world's most valuable wild-salmon fishery, generating more than \$2 billion in annual economic output, more than 30% of all Alaska salmon harvests, and more than half of all private-sector jobs in the region. [Id. at ES-8; McKinley Research Group, The Economic Benefits of Bristol Bay Salmon (Feb. 2021) available at <https://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf>.] Anglers, hunters and wildlife enthusiasts travel from across the globe to visit the region's wild and untamed rivers and streams, catch its trophy rainbow trout, view brown bears feeding on salmon at iconic Katmai falls, and take in its beautiful scenery. Salmon also support a rich cultural history and subsistence way of life that is the foundation for more than 30 Alaska Native Tribes. Native Alaskans have lived in the Bristol Bay region for thousands of years, relying on the bounty of the land and waters to sustain their traditional and customary way of life. Generations of families have fished commercially in the region. Numerous businesses, both large and small, have carved out niches capitalizing on Bristol Bay's flourishing salmon populations.

For more than a decade, scientists, Alaska Natives, sportsmen, commercial fishermen, local business owners, and Alaskans from all walks of life have consistently and strongly opposed the proposed Pebble mine because of the threats it poses to the unique and unparalleled natural resources in the region. As the EPA observed in its Bristol Bay Watershed Assessment:

[Bristol Bay] sockeye salmon represent the most abundant and diverse populations of this species remaining in the United States. Bristol Bay's Chinook salmon runs are frequently at or near the world's largest, and the region also supports significant coho, chum, and pink salmon populations. Because no hatchery fish are raised or released in the watershed, Bristol Bay's salmon populations are entirely wild. Bristol Bay is remarkable as one of the last places on Earth with such bountiful and sustainable harvests of wild salmon. One of the main factors leading to the success of this fishery is the fact that its aquatic habitats are untouched and pristine, unlike the waters that support many other fisheries. [EPA Watershed Assessment at ES-1.]

Beneath the headwaters of Bristol Bay lies the Pebble deposit, which is a large and valuable copper, gold, and molybdenum deposit owned by the State of Alaska. Despite the region's incredible and irreplaceable water and fisheries resources, and the strong public interest in favor of protecting the Bristol Bay

watershed, various proposals to develop large mines have threatened unacceptable adverse effects to the region's incredible fisheries, waters, and people. Most recently, the U.S. Army Corps of Engineers (Corps) considered and rejected a permit application from the Pebble Limited Partnership (PLP), a subsidiary of the Canadian-owned Northern Dynasty Minerals, that proposed developing a 20-year project to mine 1/8th of the Pebble deposit. If built, the proposed Pebble mine would destroy many miles of important salmon streams, thousands of acres of wetlands, and irreversibly alter the hydrology and water chemistry of the region. It would have untold negative impacts on the region's fisheries and the surrounding ecosystem, create new industrial infrastructure allowing access to adjacent mining leases, and irreversibly alter the wild and remote character of the region. After environmental review, public input and consultation, the Corps reached the unavoidable conclusion that the proposal could not meet the Clean Water Act 404(b)(1) guidelines, would cause unavoidable adverse impacts causing significant degradation of aquatic resources, and was contrary to the public interest. [See U.S. Army Corps of Engineers, Record of Decision for Application Submitted by Pebble Limited Partnership (POA-2017-00271).]

Because of the incredible and globally significant resources at stake, and the fact that numerous scientific studies and assessment consistently have shown that large mining-related activities cannot occur in Bristol Bay's headwaters without causing unacceptable adverse effects to the fish, waters and people of the region, the EPA should quickly issue a final determination that establishes strong protections for the region and that prevents large mines, including but not limited to the proposed Pebble mine. This request has been echoed by a chorus of stakeholders both in and outside the region, including numerous Alaska Native tribes, elected officials, cultural and economic leaders, anglers and hunters, and commercial fishing interests, among many others. Public interest and the overwhelming weight of science demands swift and strong action from the EPA.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.F.3 Anchorage Audubon Society (Doc. #0864, p. 1)

We wish to comment in particular about the wildfire that burned through Pebble's proposed mine site in early July (Feuerstein and Partlow, 2022). We are concerned that the burn could be claimed by Pebble's proponents as a reason to permit the mine's operation— but that would be a fallacy. Research on tundra wildfires shows that tundra plants recover rapidly after a fire, usually within 3 to 5 years (Barnes, 2015; BLM, 2021; Mann, D.H. et al., 2021). The quick recovery is partly due to the release of nutrients from burned soils and the survival of some plants during the fire (BLM, 2021; Mann, D.H. et al., 2021). The exact sequence of recovery from any fire varies with the intensity of the fire, the time of year, the pattern of previous fires, and other factors (Barnes, 2015). A mosaic of burned and non-burned areas might also favor a lower impact and quick recovery; an aerial photo of the Pebble area shows burned patches interspersed with unburned ones, including green banks along a small creek (DeMarban, 2022). Even if the ecosystem takes a few years to recover from the fire, this will certainly happen many decades sooner than if Pebble Mine is operated in the area.

Have salmon been harmed in the fire? — and will they return to streams in the area? Heated stream water could injure or kill fish in the immediate area, but field research is needed to determine the extent of harm in a particular case. As for returning salmon, the cohorts that are currently at sea will try to return to their natal streams during the next several years, starting in 2023. Research is needed to learn how quickly salmon will repopulate the upper streams. But it has been shown that following some fires, a flush of nutrients has entered local streams and enhanced the production of invertebrates— i.e., the food of salmon fry (Silins, U. et al., 2014).

It should be noted that forest ecosystems, which are more familiar to many people, recover quite differently from fire than does tundra. Forest recovery may take decades, and forest streams may even be degraded by fire (Materne and Davis, 2014).

EPA Response

EPA recognizes the impact that wildfires can have on aquatic resources, but an evaluation of potential wildfire impacts on these resources is outside the scope of the FD.

3.F.4 Californians for Western Wilderness (Doc. #1903, p. 1)

Bristol Bay and its watershed are home to the largest sockeye salmon fishery in the world. From a biodiversity standpoint alone, that is reason for it to be preserved intact. The risk to it from mining activities is simply not worth taking. In addition, the watershed's fishery has provided the means of livelihood for Indigenous people and more recently has provided recreational opportunities for sport fishers. Taken together, these reasons require its protection from mining.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.F.5 City of Dillingham (Doc. #2667-33, pp. 76–77)

And I'm opposed to the Pebble Mine development, for a different reason. I come from Globe-Miami, Arizona, probably one of the copper mining capitals of the world. Our families have been mining copper there underground, and in open pit since the late 1800s. I'm very proud of the people that worked there to create a product that is valuable to everybody across the world. And I understand the importance of copper, and mining.

I grew up in an era where there were not a lot of protections on how mining was conducted, some of the things and processes that they went through. We've had waters spoiled. We've had areas of the country where we live that have pretty much become unlivable because of these kinds of activities.

Things are better now than they were 50 years ago, 60 years ago when I was growing up. But here, you have a different environment. In Arizona, I will protect copper mining, and I have testified on its behalf, many times. But that's what we have learned to do there - that is our historic occupation. Hard rock mining is hard. It's difficult. The people are good. They work diligently. Some of them worked hundreds

of feet underground to get a product that we all benefit from - to have our lights on, and our computers work, and everything else. We have a very rich heritage in our area for that.

You have a very rich heritage here, in fishing. Copper mining is important, but it's not compatible with what goes on here. Not only is mining kind of a foreign activity up here, but we have difficulty there finding people that can mine safely. Mine plans are great, but people are the ones that execute it. And you go up against Mother Nature, just as you do out there on the waters when you fish. You can be as experienced as you can ever be, but you'll never know what's going to happen. Accidents happen. Mistakes happen. Problems occur. And I urge you to do what you can to put an end to that, up in this area. Thank you.

EPA Response

See EPA's response to comment 3.A.8.

3.F.6 SalmonState (Doc. #0858, p. 2)

SalmonState supports the recommendations and requests set forward by Alaska Native Tribal representatives, including United Tribes of Bristol Bay and Bristol Bay Native Association, Bristol Bay Native Corporation, and the Bristol Bay economic and fishing community representatives, including Commercial Fishermen for Bristol Bay and Bristol Bay Economic Development Corporation.

SalmonState supports and echoes the voices of Alaska Native representation through United Tribes for Bristol Bay and the Bristol Bay salmon fishing community in their requests to EPA to issue a Final Determination under CWA § 404(c) for the headwaters of Bristol Bay that both clearly lays out the intentions of EPA and protects the headwaters and downstream from toxic hardrock mining waste and pollutants. The communities of Bristol Bay, including the Alaska Native Tribes have called on EPA to protect its waters and fisheries from mining of the Pebble Deposit since 2010, when the Tribes first requested EPA action. In the decade since that time, the Tribes and communities have consistently renewed and supported that request. As the late Senator Ted Stevens said in 2008, mining of the Pebble Deposit is "the wrong mine in the wrong place" [https://www.huffpost.com/entry/begich-jumps-ship-pebble-mine_b_4660692] and former Alaska state senator Rick Halford said that same year, "this particular prospect, in this particular location, is a disaster for all time." [<https://www.outsideonline.com/outdoor-adventure/water-activities/gold-fish/>] The people of the Bristol Bay region are united in the call on EPA to protect Bristol Bay waterbodies from contamination due to mining of the Pebble Deposit, and SalmonState, in support of the region's peoples, echoes that request for clear protections.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.F.7 Charles Borbridge (Doc. #2097, p. 2)

There is a difference between what constitutes successful damage prevention precautions from the viewpoint of building a mine and the viewpoint of maintaining a healthy fishery. A successful mine is one that is built and is profitable. A mine that successfully meets permit requirements is one that gains approval to allow its construction and continued operation. A successful fishery such Bristol Bay is one with pristine waters that allow its continuation. The acceptable mining precautions are perfect and last forever. Mining precautions currently cannot meet the standards of a fishery as valuable and as vulnerable as Bristol Bay.

EPA Response

See EPA's response to comment 3.A.8.

3.F.8 Copper River Fish Market LLC (Doc. #1902, p. 1)

We're talking about one of the planet's most spectacular and abundant annual salmon migrations, and it needs your help to continue to exist as it has for thousands of years.

I deeply value the pristine watershed of Bristol Bay and the salmon and other wildlife that inhabit the region, as well as the small-boat fishing families that participate in a carefully managed sustainable fishery. I ask the EPA to recognize the importance of these things over the quick profit-making of a foreign-owned mining company. Pebble Mine's application shows one of the largest toxic waste fields of any mine project on the planet, right in the midst of the salmon spawning streams that provide an annual catch of over 60 million fish. That's about 300 million servings of wild seafood at risk of being lost just in a single year. This astounding catch volume is a carefully managed, sustainable fishery and only a fraction of the annual migration of salmon that return each year to Bristol Bay streams where they spawn and produce the next generation of wild salmon, as they have for eons. Alaska's Bristol Bay fishery is comprised of nearly 2000 family-owned, independent small-boat fishing businesses. In addition, thousands of more workers onshore turn that catch into plate-ready seafood.

(...)

At stake is an irreplaceable 3,500 acres of pristine wetlands and 80 miles of streams that are the fertile breeding grounds of one of the most prolific, wild, and healthy salmon populations on the planet. This untouched and natural landscape is at the core of a timeless food web that supports humans and wildlife on a scale rarely still witnessed. The Bristol Bay salmon run is the aquatic equivalent of the wild buffalo migrations that took place for eons before short-sighted greed destroyed them in just a few year time. That important traditional food source was lost, suffering followed and the landscape of North America was changed forever. We can learn from this heart-wrenching past and choose to preserve wildlife and nature's offering of food security in perpetuity, over-extraction mines that will eventually poison and decimate the waters that feed so much life. The Bristol Bay region is a natural wonder like the Grand Canyon or Great Barrier Reef, it deserves safeguarding just for the mere fact that we need to keep living on this planet for the foreseeable future, sorry Mars optimists. For those that like an economic incentive

to preserve wild spaces, oh have we got some numbers for you! Upwards of \$2.5 billion dollars of revenue is generated every single year. Over 90 million dollars in taxes are paid to the State of Alaska from this fishery. Combine that with the 300 million servings of pure and healthful wild salmon and it's impossible to deny the importance of this watershed. It's the right thing to do for hippy earth-loving reasons and also for fiscally responsible, long-term economic decision-making.

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.F.9 AFTA Fisheries Fund (Doc. #0412, p. 1)

We ask that EPA finalize its proposed determination prohibiting and restricting the use of certain waters in the South Fork Koktuli River, North Fork Koktuli River, and Upper Talarik Creek watersheds as disposal sites for the discharge of dredged or fill material associated with mining the Pebble deposit. The EPA's Executive Summary says well: "Alaska's Bristol Bay watershed is an area of unparalleled ecological value, boasting salmon diversity and productivity unrivaled anywhere in North America. As a result, the region is a globally significant resource... [that supports] a more than 4,000- year-old subsistence-based way of life for Alaska Natives... [T]hese salmon resources have significant nutritional, cultural, economic, and recreational value, both within and beyond the Bristol Bay region. The total economic value of the Bristol Bay watershed's salmon resources, including subsistence uses, was estimated at more than \$2.2 billion in 2019."

EPA Response

See EPA's responses to comments 3.A.8 and 3.E.1.

3.F.10 Silver Bay Seafoods (Doc. #1910, p. 1)

This plant directly employs eight hundred processing workers and provides a critical market to over three hundred fishermen owners and thirty independent tender operators. The Silver Bay partner fishing and tender vessel operations directly employ over 1200 crew members. We represent a small, but important part of this complex coastal Alaska salmon network that would not be possible without a healthy, sustainable salmon run.

EPA Response

See EPA's response to comment 3.E.1.

TOPIC 4. BASIS FOR PROPOSED DETERMINATION

4.A Section 404(c) Standards

4.A.1 Alaska Department of Environmental Conservation (Doc. #0814, p. 21-24)

LEGAL IMPEDIMENTS TO FINALIZATION OF THE PROPOSED DETERMINATION

“Administrative agencies are creatures of statute” and “accordingly possess only the authority” that Congress has lawfully provided. [*N.F.I.B. v. Dep’t of Lab., Occ’l Safety & Health Admin.*, 142 S. Ct. 661, 665 (2022).] Agencies must follow the law as written, hewing closely to the law and meticulously justifying their actions. They are never at liberty to expand their own power. [See *NRDC v. EPA*, 822 F.2d 104, 131 (D.C. Cir. 1987) (“[EPA]’s rulemaking power is limited to adopting regulations to carry into effect the will of Congress as expressed in the statute.”).]

The proposed veto would do just that. Its voluminosity belies its shortfalls: it fails to define key terms and fails to tether its findings to the statutory and regulatory language. Its consideration of costs is heavily one-sided. Its findings are padded with information that, inexplicably, are disclaimed as a basis for its decision. It never made a Waters of the United States (“WOTUS”) delineation justifying its assertion of CWA jurisdiction. And the regulations it relies on—scarcely tested in the courts—are riddled with flaws.

Perhaps most egregiously, Region 10 threatens to confer upon itself precisely the type of “roving commission to achieve . . . [a] laudable goal” that EPA has previously been chastised for [*Michigan v. E.P.A.*, 268 F.3d 1075, 1084 (D.C. Cir. 2001).]— twice. [*West Virginia v. EPA*, No. 20-1530, 2022 WL 2347278 (June 30, 2022).] “Commendable though [such] goals may be,” [*Michigan v. E.P.A.*, 268 F.3d 1075, 1084 (D.C. Cir. 2001).] they cannot justify unlawful action.

1. Region 10’s proposed veto is indefensible.

To produce a defensible decision, an agency “must examine the relevant data and articulate a satisfactory explanation for its action” which includes articulating “a ‘rational connection between the facts found and the choice made.’” [*Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quoting *Burlington Truck Lines v. United States*, 371 U.S. 156, 168 (1962)).]

For the following reasons, Region 10’s proposed veto is indefensible.

a. Region 10 fails to define key terms.

“Because ‘administrative agencies may act only pursuant to authority delegated to them by Congress,’ an agency must ‘point to something’ that ‘gives it the authority’ to take the specific action at issue.” [Clean Air Council v. Pruitt, 862 F.3d 1, 9 (D.C. Cir. 2017) (internal quotation marks omitted).] “[C]onjecture” does not suffice. [Graphic Commc’ns Int’l Union, Loc. 554 v. Salem-Gravure Div. of World Color Press, Inc., 843 F.2d 1490, 1494 (D.C. Cir. 1988) (“[C]onjecture cannot substitute for a reasoned explanation[.]”).]

To exercise a § 404(c) veto, the CWA requires EPA to establish that proposed “discharge[s]” “will have an unacceptable adverse effect on” one of four resources, including “shellfish beds and fishery areas (including spawning and breeding areas).” [33 U.S.C. § 1344(c). The parentheticals used in this definition, combined with the term “including,” indicate that the phrase “spawning and breeding areas” is a subset of “fishery areas.” In other words, only after defining “fishery areas” can Region 10 proceed to identify spawning and breeding sites within those areas.] The CWA does not define “unacceptable adverse effect” or “fishery areas.” [The Ninth Circuit in Trout Unlimited v Pirzadeh considered only the question of “whether the EPA’s withdrawal of its [2014] proposed determination is reviewable” by the courts. 1 F.4th 738, 750 (9th Cir. 2021). None of the arguments advanced by this Letter were brought to, or addressed by, that court. Id.] EPA’s regulations define an “unacceptable adverse effect” as an

[i]mpact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas. [40 C.F.R. § 231.2(e).]

EPA’s regulations do not further define “fisheries” or “significant” for purposes of 231.2(e). Nor do EPA’s regulations separately define “fishery areas” as used in § 404(c).

Region 10’s proposed veto is expressly based “solely” on adverse effects to “fishery areas.” [See PD at 4-12 (“[T]his proposed determination is based solely on adverse effects on anadromous fishery areas[.]”).] Stringing the statutory and regulatory text together, Region 10 must establish that a “discharge” of dredged or fill material into WOTUS “will have an unacceptable adverse impact on . . . fishery areas,” which means the discharge must have an “[i]mpact . . . which is likely to result in . . . significant loss of or damage to fisheries[.]”

Region 10’s proposed veto never defines “fisheries” (or “fishery areas”) or “significant.” Without first defining these key terms, Region 10 cannot make the requisite showing of significant loss of or damage to fisheries.

i. “Fisheries” (or “fishery area”)

Region 10 fails to define “fisheries” as used in EPA’s regulation. [Region 10/EPA have also provided no definition of “fishery area” as used in § 404(c). The most reasonable reading of EPA’s regulation is that “fishery areas” means “fisheries.”] Each of Region 10’s four unacceptability findings are traced to effects on anadromous streams, streams supporting anadromous streams, and wetlands—not “fisheries.”

The closest Region 10 comes to defining this term is in a footnote, in which Region 10 states in full:

For the purpose of this proposed determination, anadromous fishery areas include anadromous fish streams. [PD at 4-3.]

This statement provides no explanation of what a fishery is, justification for why fish streams are includable, or indication as to what extent fish streams (or other water bodies) are includable. Left entirely unaddressed is whether, how, and why supporting streams and wetlands or other water bodies are includable as “fisheries.”

Underscoring the inadequacy of Region 10’s definition is a comparison to that used in the Corps’ Final Environmental Impact Statement (“FEIS”), [“The Final Environmental Impact Statement is a thorough and painstaking piece of work which deals adequately indeed, comprehensively with all environmental consequences required by law to be considered.” *Env’t Def. Fund, Inc. v. Stamm*, 430 F. Supp. 664, 667 (N.D. Cal. 1977). The FEIS here was developed over several years, with input from multiple agencies and stakeholders.] the § 404(b)(1) Guidelines, and a dictionary. The FEIS defines “commercial and recreational fisheries” as

[t]he Alaska Department of Fish and Game (ADF&G) Commercial Salmon Fishery Area T and Area H; ADF&G Commercial Shellfish Area H; Cook Inlet Management Area (for groundfish); and ADF&G Statewide Harvest Survey (SWHS) areas S, T, N, and P comprise the Environmental Impact Statement (EIS) analysis area for this resource. [FEIS at 3.6-1.]

The § 404(b)(1) Guidelines state that “[r]ecreational and commercial fisheries consist of harvestable fish, crustaceans, shellfish, and other aquatic organisms used by man.” [40 C.F.R. § 230.51(a).] The Cambridge Dictionary defines fishery as “an area of water where fish are caught so they can be sold.” [Fishery, Cambridge Online Dictionary, retrieved from <https://dictionary.cambridge.org/us/dictionary/english/fishery>.] Region 10 could, but inexplicably [Perhaps Region 10’s failure to rely on these definitions isn’t so inexplicable: were any of these definitions used, the veto would be unsupportable.] has not, referenced or otherwise relied on these definitions.

Only after first clearly delineating an area may an agency study that area. Only after studying that area may an agency identify adverse effects that the area is susceptible to. Only after cataloguing these adverse effects may an agency assess their degree of severity, to determine whether they are significant enough to be unacceptable. Without first identifying fisheries, Region 10 cannot invoke a power predicated on unacceptable adverse effects to fisheries.

The remainder of the analysis changes based on which “fisheries” stand to be affected. If Region 10 considers all of Bristol Bay a “fishery,” then it must—per EPA’s own regulation—prove a “significant loss of damage to” Bristol Bay resulting from the proposed discharges. This will require a greater showing of loss than were “fisheries” defined more narrowly—as, for example, the seven shaded areas identified on the figure entitled Approximate extents of popular Chinook and Sockeye salmon recreational fisheries in the Nushagak and Kvichak River watersheds on page 3-59. [PD at 3-59.] If these seven shaded areas are the “fisheries,” Region 10 must prove a “significant loss of or damage to” one or more of those specified

areas. [Region 10 asserts that the removal of the anadromous streams as well as the input provided by other “streams and wetlands that support anadromous fish streams” would likely be attenuated by inputs from other streams and wetland complexes above the “fishery areas” identified in the shaded areas on page 3-59 of the Proposed Determination. If Region 10 intended this map to define the relevant “fishery areas,” Region 10 should have conducted an analysis to determine what the actual potential impacts might be to the shaded areas shown in that map.]

ii. “Significant”

Region 10 also fails to define “significant.” Absent a definition incorporating objective standards, the term “significant” is a term of “subjective . . . judgment” which invites “unguided discretion.” [Ohio River Valley Env’t Coal, Inc. v. Norton, No. CIV.A. 3:04-0084, 2005 WL 2428159, at *3 (S.D.W. Va. Sept. 30, 2005), amended, No. CIV.A. 3:04-0084, 2005 WL 5188120 (S.D.W. Va. Nov. 22, 2005), aff’d sub nom. Ohio River Valley Env’t Coal., Inc. v. Kempthorne, 473 F.3d 94 (4th Cir. 2006).] Unguided and unchecked discretion by agencies is “dangerous”—particularly when it allows agencies to do “whatever they wish” [L.V.M. v. Lloyd, 318 F. Supp. 3d 601, 612–13 (S.D.N.Y. 2018).] in the guise of science.

Without an objective definition of the term, EPA’s discretion has no apparent constraints. And the public has no yardstick to evaluate whether a project’s effects are adverse enough to rise to the level of “significant” and so are, for that reason, “unacceptable.”

EPA Response

EPA agrees with the commenter that to exercise CWA Section 404(c) the Agency must determine that the discharge of dredged or fill material will have unacceptable adverse effects on enumerated resources. 33 USC 1344(c). EPA also agrees that one such resource enumerated by Congress is “fishery areas.” *Id.*

CWA Section 404(c) includes a broad reference to “fishery areas.” Congress’ inclusion of “spawning and breeding areas” in the statutory phrase referring to “fishery areas” acknowledges that fish are mobile and may use different habitat areas throughout their life histories and that EPA should consider all of these areas when evaluating whether discharges of dredged or fill material will have unacceptable adverse effects. EPA has defined “unacceptable adverse effects” in its regulations at 40 CFR 231.2(e). In describing what constitutes an unacceptable adverse effect, 40 CFR 231.2(e) refers to “fisheries, shellfishing, or wildlife habitat or recreation areas.”

To the extent the commenter argues that “fisheries,” as referred to in EPA’s definition of “unacceptable adverse effect,” is intended to have any different meaning from the statutory phrase of “fishery areas (including spawning and breeding areas),” EPA disagrees. The regulatory definition of “unacceptable adverse effect” at 40 CFR 231.3(e) describes the type and degree of impacts to the resources enumerated in the statute that would meet the statutory “unacceptable adverse effect” standard. It is not intended to serve as a definition of the statutory resources themselves. This is evident from the

regulatory history of the provision. EPA's 1979 proposed rule to implement CWA Section 404(c) stated that "unacceptable adverse effect' means 'unacceptable adverse effect' on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas." 44 FR 14578, 14580 (March 13, 1979). Commenters on the 1979 proposed rule asked for a more specific definition of "unacceptable adverse effects" and in response EPA finalized the language in 40 CFR 231.2(e) to clarify that "[u]nacceptable adverse effect means impact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies (including surface or ground water) or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas." 44 Fed. Reg. 58076, 58087 (October 9, 1979). See also 40 CFR 231.1(a), 231.7 for references throughout the regulations to "fishery areas (including spawning and breeding areas)" as listed in the statute. It follows that the reference to "shellfishing" in 231.2(e) is synonymous with the statutory term of "shellfish beds" and the reference to "fisheries" in 231.2(e) is synonymous with "fishery areas (including spawning and breeding areas)." The commenter points to no evidence to suggest otherwise.

The commenter's references to descriptions of "commercial and recreational fisheries" from the USACE FEIS¹³ and the cited dictionary definition of "fishery" are not relevant. Congress' references to "fishery areas" is not limited to only areas "where fish are caught so they can be sold" but to broad habitat areas that can support fish throughout their life histories, including spawning and breeding areas. EPA acknowledges that the Section 404(b)(1) Guidelines include consideration of "recreational and commercial fisheries" as "harvestable fish, crustaceans, shellfish, and other aquatic organisms used by man." 40 CFR 230.51(a). Consistent with 40 CFR 230.51(b), Section 4.3.1.1 of the FD discusses how the discharges of dredged or fill material evaluated would, for example, "interfere with the reproductive success of recreational and commercially important aquatic species through disruption of migration and spawning areas." While EPA considers the "relevant" portions of the Section 404(b)(1) Guidelines in evaluating the unacceptability of impacts (see 40 CFR 231.3(e)), consideration of "recreational and commercial fisheries" under the Section 404(b)(1) Guidelines is not the only relevant consideration nor does consideration of "recreational and commercial fisheries" constrain EPA's consideration of other relevant factors or effects. Indeed, the Section 404(b)(1) Guidelines themselves include numerous other references to effects on fish and the aquatic environments that support fish that are also relevant to EPA's consideration of effects on "fishery areas" under CWA Section 404(c) (see Section 4.3.1.1 of the FD).

¹³ EPA notes that the FEIS does not, as the commenter contends, define "commercial and recreational fisheries." USACE merely identifies the "analysis area" for the FEIS analysis of the resources, which includes "river systems hydrologically connected to the project that contribute to the Bristol Bay salmon fishery, to recreational fisheries in connected river and lake systems, and to the Cook Inlet saltwater environment" (USACE 2020a: Page 3.6-1).

In addition, the commenter's focus on the term "fisheries" ignores that EPA has defined "unacceptable adverse effect" to mean "impact on an aquatic or wetland *ecosystem*" that is "likely to result in significant loss of or damage" to the enumerated statutory resources. 40 CFR 231.2(e). Courts have upheld EPA's consideration of the impact of the aquatic ecosystem, including habitat alone. *See Mingo Logan Coal Co. Inc., v. U.S. EPA*, 70 F. Supp. 3d 151, 172 (D.D.C. 2014) (finding that "there is no support for the argument that EPA cannot rest the Final Determination on a loss of habitat" and upholding EPA's unacceptable adverse effects determination that involved "consideration of the larger picture: the relationship between the destruction of habitat and the wildlife that depends on that habitat.") In Section 4.1 of the PD, EPA explained that "[a]s a scientific matter, evaluating adverse effects to fishery areas involves consideration of numerous factors, including adverse effects that discharges of dredged or fill material can have on aquatic areas where fish are present and that provide ecosystem functions and values that support fishery areas."

EPA disagrees with the commenter that EPA failed to define the "fishery areas" that it evaluated for the purposes of making its unacceptable adverse effects determinations. EPA did not make its unacceptable adverse effects determinations based on all fishery areas in the SFK, NFK, and UTC watersheds and it need not. Instead, EPA exercised its discretion to focus on anadromous fishery areas. The PD expressly stated that "anadromous fishery areas include anadromous fish streams" and that EPA evaluated the "unacceptable adverse effects" on "documented anadromous fish streams," which included evaluating impacts to waters that "support anadromous fish streams." The PD expressly defined each of these terms (see Box 4-1 of the PD). The PD also identified the specific documented anadromous fish streams at issue both at the location of the discharges of dredged or fill material associated with the mine site described in the 2020 Mine Plan, *see e.g.*, Figure 4-1, as well as the specific documented anadromous fish streams at issue within the SFK, NFK, and UTC watersheds, *see e.g.*, Figure 4-3. Similarly, the FD identifies the specific documented anadromous fish streams at issue both at the mine site area within the NFK and SFK watersheds, *see e.g.*, Figure 4-1, as well as the specific documented anadromous fish streams at issue within the SFK, NFK, and UTC watersheds *see e.g.*, Figure 4-3. The FD was revised to clarify the specific anadromous fishery areas that would be subject to unacceptable adverse effects (as a result of discharges of dredged or fill material associated with developing the Pebble deposit), which can be specific to one or all of the SFK, NFK, and UTC watersheds.

EPA also disagrees that EPA failed to address the "unacceptable adverse effects" standard and that EPA must provide an "objective definition" of "significant." The definition of "unacceptable adverse effect" includes a reference to "significant loss or damage to

fisheries.” 40 CFR 231.2(e).¹⁴ EPA further explained in the preamble to its 1979 CWA Section 404(c) regulations that “[t]he term ‘unacceptable’ in EPA’s view refers to the significance of the adverse effect – e.g., is it a large impact and is it one that the aquatic and wetland ecosystem cannot afford” (44 FR 58078; Section 4 of the FD). EPA’s record supports the Agency’s determination that the discharge of dredged or fill material will result in significant loss of and damage to fishery areas at the location of the discharge and therefore will have unacceptable adverse effects on anadromous fishery areas at the location of the discharge. EPA’s record also supports the Agency’s determination that the discharge of dredged or fill material will result in significant damage to fishery areas downstream of the discharge location and will have an unacceptable adverse effect on fishery areas. For example, Section 4.2.1 of the PD and the FD explain in detail that the permanent loss of 8.5 miles of anadromous fish streams represents a significant loss of anadromous fishery areas and how those losses also represent significant damage to additional downstream anadromous fishery areas (see also Sections 4.2.2 through 4.2.4). EPA’s evaluation of “adverse effects” where the discharge of dredged or fill material occurs, as well as downstream of the location of the discharge of dredged or fill material is well supported by the science and the law. The statute’s reference to “unacceptable adverse effect[s]” includes consideration of such effects. *Mingo Logan Coal Company Inc., v. U.S. EPA*, 70 F. Supp. 3d 151, 177-180 (D.D.C. 2014) (finding that “EPA may consider downstream effects when conducting its CWA Section 404(c) unacceptable adverse effects analysis); *aff’d Mingo Logan Coal Co., v. EPA*, 829 F.3d 710, 724-29 (D.C. Cir. 2016) (upholding EPA’s “consideration of downstream water quality as a means of evaluating the . . . adverse effects on wildlife”).

To the extent the commenter cites to the unreported case *Ohio River Valley Env’t Coal, Inc. v. Norton* to support its contention that EPA must explicitly define the term “significant,” the commenter’s reliance is misplaced. In *Ohio River Valley Env’t Coal, Inc. v. Norton*, Ohio River Valley Environmental Coalition Inc. (OVEC), challenged the Secretary of the Interior’s approval of changes in West Virginia’s surface mining regulations proposed by the state’s Department of Environmental Protection (WVDEP). *Ohio River Valley Env’t Coal, Inc. v. Norton*, No. CIV.A. 3:04-0084, 2005 WL 2428159, at *1 (S.D.W. Va. Sept. 30, 2005), *amended*, No. CIV.A. 3:04-0084, 2005 WL 5188120 (S.D.W. Va. Nov. 22, 2005), *aff’d sub nom. Ohio River Valley Env’t Coal, Inc. v. Kempthorne*, 473 F.3d 94 (4th Cir. 2006). Surface Mining Control and Reclamation Act of 1977 (SMCRA) authorizes the Secretary of Interior to review and approve or disapprove state regulatory programs for controlling surface mining operations. *Id.* In 1988 the state proposed, and the Secretary approved, certain regulatory definitions as part of the regulations dealing with the hydrologic aspects of surface mining. The state later sought, and received, the Secretary’s approval of

¹⁴ As previously explained, “fisheries” as referred to in 40 CFR 231.2(e) is synonymous with the statutory term “fishery areas (including spawning and breeding areas).”

changes in these regulations that moved away from specific, numeric standards of predetermined thresholds and ranges to define and measure material damage by substituting a “narrative’ standard which defines material damage as ‘long-term or permanent change’ which has ‘significant adverse impact’ on ‘existing conditions and uses.’” *Id.*; *id.* at *3. SMCRA requires state rules and regulations to be consistent with federal regulations, a requirement defined by the Secretary’s regulations to mean that state laws and regulations can be no less effective than federal regulations and OVEC contended that the changes resulted in a regulatory program that was less effective than federal regulations in meeting the requirements of SMCRA. *Id.* at *2. The quote cited by the commenter is taken entirely out of context. The Court did not engage in a general discussion about the subjectivity of certain terms. Rather, the Court answered the specific question of whether the Secretary’s approval of the changes failed to provide a reasoned analysis to explain how the subjective standard could ensure that the state program amendments were not less effective than federal regulations. *Id.* at *3. The Court noted that the Secretary could not “rubber-stamp amendments; she must analyze and explain how she determined that proposed amendments will meet federal standards.” *Id.* at *4.

Unlike the Secretary’s task at issue in *Ohio River Valley Env’t Coal, Inc. v. Norton*, where, as here, EPA exercises its discretionary CWA Section 404(c) authority there is no objective standard against which EPA’s determinations can be measured. Congress entrusted to EPA the authority to exercise its expert judgement to prevent unacceptable adverse effects to enumerated resources. 33 USC 1344. The commenter’s reliance on *L.V.M. v. Lloyd*, is similarly inapposite. 318 F. Supp. 3d 601 (S.D.N.Y. 2018). EPA acknowledges that government agencies “cannot do whatever they wish.” *Id.* at 612. EPA has provided a rational explanation for its unacceptable adverse effects determinations, including a reasoned and well-supported analysis of the significance of the loss of and damage to fishery areas, that is consistent with its long-standing interpretation of CWA Section 404(c) and its implementing regulations. See Section 4 of the FD.

To the extent the commenter raised concerns regarding the caption for Figure 3-17 of the PD (PD Page 3-59) because of its references to fisheries, EPA has clarified the caption of the figure. As previously noted, the PD and FD identify the fishery areas at issue in this determination. The shaded areas on PD Figure 3-17 are popular areas for recreational fishing in the Nushagak and Kvichak River watersheds and have been identified as such in the FD.

With respect to the commenter’s contention related to the major questions doctrine, see EPA’s response to comment 2.C.24.

With respect to the commenter’s contention related to EPA’s consideration of costs, see EPA’s response to comment 6.F.7.

With respect to the commenter's contention related to EPA's CWA jurisdiction, see EPA's response to comment 2.C.22.

To the extent the commenter generally contends that EPA's CWA Section 404(c) regulations are flawed, see EPA's response to comment 4.A.2.

4.A.2 Alaska Department of Environmental Conservation (Doc. #0814, p. 52)

As applied, EPA's § 404(c) regulations are invalid.

Because opportunities have been scarce for challenging EPA's § 404(c) regulations, their infirmities have yet to face judicial scrutiny.

When Congress enacts a law, courts and agencies "are obliged to give effect, if possible, to every word Congress used." [*Carcieri v. Salazar*, 555 U.S. 379, 391 (2009) (quoting *Reiter v. Sonotone Corp.*, 442 U.S. 330, 339 (1979)).] In enacting § 404(c), Congress required proof that an unacceptable adverse effect "will" result. Section 404(c) reads:

The Administrator is authorized to prohibit the specification . . . whenever he determines . . . that the discharge of such materials into such area will have an unacceptable adverse effect" on certain resources. [33 U.S.C. § 1344(c).]

EPA's regulations, by contrast, require that proposed determinations establish only that there is "reason to believe" an unacceptable adverse effect "could" result:

If the Regional Administrator has reason to believe after evaluating the information available to him, including any record developed under the section 404 referral process specified in 33 CFR 323.5(b), that an "unacceptable adverse effect" could result from the specification or use for specification of a defined area for the disposal of dredged or fill material, he may . . . publish notice of a proposed determination[.]" [40 C.F.R. § 231.3(a).]

EPA's regulations allow Region 10's proposed veto to make the lower finding that an unacceptable adverse effect "could" result from discharges into fishery areas—not that such effects "will" result, as required by the statutory text. "Could" findings are what the public comments on. In other words, where Congress required a high degree of certainty that unacceptable adverse effects "will" occur, EPA believes "could" finding are all the public needs to evaluate its proposed action. Raising the standard to "would be likely to have an unacceptable adverse effect," as the regulations anticipate for the recommended determination, [40 C.F.R. § 231.5(a).] does not compensate for this failure. It must be "will." As the Supreme Court has emphasized, "an agency may not rewrite clear statutory terms to suit its own sense of how the statute should operate." [*Util. Air Regul. Grp. v. E.P.A.*, 573 U.S. 302, 328 (2014).]

EPA response:

EPA disagrees with the commenter's assertion that EPA's implementing regulations are invalid. As an initial matter, although the commenter claims that EPA's 1979 CWA Section

404(c) regulations are invalid “as applied,” it appears clear the commenter contends EPA’s regulations are invalid on their face and the statute of limitations has long since passed. Moreover, EPA’s CWA Section 404(c) implementing regulations, which describe a multi-step process that governs the Agency’s exercise of its CWA Section 404(c) authority, provide procedure above and beyond what the statute requires. The statute authorizes EPA to limit the specification of any defined area as a disposal site for discharges of dredged or fill material whenever it determines, “after ‘notice and opportunity for public hearings,’” that the discharges will have an unacceptable adverse effect on certain statutorily enumerated resources.¹⁵ The statute does not require EPA, as the commenter suggests, to take public comment on its finding that an unacceptable adverse effect “will” occur. Indeed, the statute does not require EPA to take public comment at all and explicitly requires EPA to offer opportunity for public hearings before it makes its final determination.

Further, the CWA Section 404(c) regulations establish procedures for each step of the process including the preliminary step to notify USACE and the owner(s) of record of the site that EPA has reason to believe after evaluating the information available, that an unacceptable adverse effect could result from the specification or use for specification of a defined area for the disposal of dredged or fill material. 40 CFR 231.3(a). The purpose of this initial notification is to provide the relevant parties the opportunity to demonstrate that no unacceptable adverse effect(s) will occur. 40 CFR 231.3(a)(1). If, within a time period prescribed by the regulations, it has not been demonstrated to the satisfaction of EPA that no unacceptable adverse effect(s) will occur, EPA must publish notice of a proposed determination in accordance with the procedures set forth in the regulations for that step, which include, at a minimum, public notice in the federal register and a public comment period on the proposed determination.

The procedures established at these early stages of the regulatory process are aimed at developing the record through preliminary consultation with USACE and the owner(s) of record of the site, as well as through notice and comment of the proposed determination. The words “reason to believe” and “could result” are therefore appropriately used “because the preliminary determination merely represent a judgment that the matter is worth looking into.” 44 FR 58078, 58028. By soliciting public comment on its findings that an “unacceptable adverse effect” could result from the specification or use for specification of a defined area for the disposal of dredged or fill material, EPA goes above and beyond the minimum procedures required by the statute to gather information relevant to its decision-making. EPA’s regulations make clear that one purpose of taking public comment on a proposed determination is to solicit comments on “whether the proposed determination should become the final determination and corrective action

¹⁵ CWA Section 404(c) also requires the Administrator to consult with the Secretary of the Army before making a final determination. 33 USC 1344.

that could be taken to reduce the adverse impact of the discharge.” 40 CFR Section 231.4 (a). See Section 7 of the PD. If, through the public comment period and any public hearing(s), EPA received information that demonstrated to its satisfaction that “corrective action that could be taken to reduce the adverse impact of the discharge,” EPA could withdraw a proposed determination.

4.A.3 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 10)

Some general shortcomings of PD as written include:

* EPA indicates throughout the PD that the discharge of dredged or fill material for mine operation “could” have unacceptable adverse effects. This is contradicted by their extensive ecological review of the region and its fishery which clearly indicate that mine operation would certainly have adverse effects.

EPA Response

The terminology used in the PD (i.e., “could result”) is consistent with EPA’s CWA Section 404(c) regulations at CFR 231.3, which provide that “if the Regional Administrator has reason to believe after evaluating the information available to him, . . . that an ‘unacceptable adverse effect’ could result from the specification or use for specification of a defined area for the disposal of dredged or fill material, he may initiate” a CWA Section 404(c) review process.

4.A.4 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 30-31)

When undertaking a Section 404(c) action, EPA need only find a “reasonable likelihood” that unacceptable adverse effects will occur. [Denial or Restriction of Disposal Sites; Section 404(c) Procedures, 44 Fed. Reg. 58076, 58078 (Oct. 9, 1979) (“absolute certainty is not required. Because 404(c) determinations are by their nature based on predictions of future impacts, what is required is a reasonable likelihood that unacceptable adverse effects will occur — not absolute certainty but more than mere guesswork.”).] “Unacceptable adverse effect(s)” means any “impact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas.” [Id § 231.2(e).] In making its determination of unacceptable adverse effects, EPA’s regulations provide that “consideration should be given to the relevant portions of the Section 404(b)(1) Guidelines (40 CFR part 230).” [Id.] The Section 404(b)(1) 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.” [Id § 230.1(c).]

The Section 404(b)(1) Guidelines are expansive, with detailed standards relating to direct, secondary, and cumulative impacts to the environment, human health, wetlands, fish and wildlife, cultural and

recreational values, water quality, and economics. In considering whether to issue a 404 permit, the Army Corps considers the Section 404(b)(1) Guidelines in their entirety. While EPA, in exercising its authority under Section 404(c), considers the portions of the 404(b)(1) Guidelines relevant to evaluating adverse effects, such as the requirements relating to significant degradation to waters of the United States (40 CFR § 230.10(c)), secondary effects (40 CFR § 230.11(h)), cumulative effects (40 CFR § 230.11(g)), and minimization of adverse impacts on aquatic ecosystems (40 CFR § 230.10(d)).

The Section 404(b)(1) Guidelines direct that no discharge or dredged or fill material shall be permitted if the discharge will cause or contribute to significant degradation of waters of the United States. [40 C.F.R. § 230.10(c).] Likewise the Section 404(c) regulations direct that “unacceptable adverse effect(s)” means any “impact on an aquatic or wetland ecosystem which is likely to result in significant degradation ...” [Id. § 231.2(e).] For purposes of the Guidelines and 404(c) regulations, the effects contributing to significant degradation, considered individually or collectively, include:

* “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.” [Id § 230.10(c)(1).]

* “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.” [Id § 230.10(c)(2).]

* “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.” [Id § 230.10(c)(3).]

* “Significantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.” [Id § 230.10(c)(4).]

EPA Response

The commenter has cited provisions from EPA’s regulations; the FD cites these regulations.

4.A.5 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 32-33)

B. EPA 404(c) Procedures and Past Agency Precedent

While the statute does not articulate the process by which the EPA is to undertake such designations, the implementing regulations at 40 C.F.R. Part 231 do. [Id Part 231.] When an EPA Regional Administrator has “reason to believe after evaluating the information available to him ... that an ‘unacceptable adverse effect’ could result from the specification or use for specification of a defined area for disposal of dredged or fill material,” the Regional Administrator may initiate a 404(c) action. [Id. § 231.3(a).]

To initiate a 404(c) action, the Regional Administrator must notify in writing the Army Corps, the property owner, and 404 permit applicant, if any, of the agency's intention to issue a public notice of a Proposed Determination to prohibit or withdraw the specification of any defined area as a disposal site. [Id § 231.3(a)(1).] After initiating a 404(c) action, the EPA provides an opportunity to demonstrate "to the satisfaction of the Regional Administrator that no unacceptable adverse effect(s) will occur," and to "take corrective action to prevent an unacceptable adverse effect" to the satisfaction of the Regional Administration. [Id § 231.3(a)(2).] If, within 15 days of its intent to issue a Proposed Determination, it has not been demonstrated to EPA that no unacceptable adverse effects will occur, then the Regional Administrator shall publish notice of a Proposed Determination. [Id § 231.3(a)(2).]

Following public notice of a Proposed Determination, the EPA must provide for a comment period of 30 to 60 days [Id § 231.4(a).] and hold public hearings on the record. [Id § 231.4(b)-(g).] The Regional Administrator must consider all comments in preparing a Recommended Determination. [Id.] The Regional Administrator then has 30 days from the close of the public hearing to either withdraw the Proposed Determination or prepare a Recommended Determination. [Id § 231.5(a). "The Administrator or the Regional Administrator may, upon a showing of good cause, extend the time requirements in these regulations." Id. § 231.8.]

Per the 404(c) regulations, any Recommended Determination must include: (1) a summary of the unacceptable adverse effects that could occur from use of the disposal site for the proposed discharge and (2) recommendations regarding a Final Determination to prohibit, deny, restrict, or withdraw, specifically confirming or modifying the Proposed Determination with a statement of reasons. [Id § 231.5(d)(1)-(2).] The regulations thus provide that the Regional Administrator must specifically "confirm or modify the proposed determination, with a statement of reasons" [Id.] and that such modification to a Proposed Determination will occur without the agency requiring an additional public comment period. In past 404(c) actions, EPA commonly modified its proposed 404(c) action between the Proposed Determination and Recommended Determination stages, without offering a renewed public comment period. Based on a review of the 13 final 404(c) actions completed by the EPA to date, 11 of those actions saw changes to the proposed 404(c) determination between the Proposed Determination and the Recommended Determination stages. [Changes between Proposed Determination and Recommended Determination in past 404(c) actions included changes to both geographic scope and type of 404(c) action (i.e., prohibition, restriction, or withdraw specification). Oftentimes, a Recommended Determination would merely prohibit the specification where a Proposed Determination had previously prohibited and restricted the specification. Changes in geographic scope between Proposed Determination and Recommended Determination occurred in 7 of the 13 final 404(c) actions and included additions and subtractions of waters and tributaries based on revised project details and analysis of impacts. The only final 404(c) actions without changes between the Proposed Determination and Recommended Determination were found in the Big River Water Supply Impoundment and Russo Development Corporation Site.] Notably, although the 404(c) regulations do not provide an additional public comment opportunity after the Proposed Determination stage, the

regulations do require that EPA Headquarters notify and initiate consultation with the Army Corps, permit applicant, and State prior to issuing a Final Determination. [40 C.F.R. § 231.6.]

EPA Response

With respect to the commenter’s assertion that the Agency may make changes between the PD and RD stages of the CWA Section 404(c) regulatory process, including without the need for additional public comment, EPA agrees. EPA’s CWA Section 404(c) regulations expressly contemplate changes between the PD and RD stages of the review process (40 CFR 231.5(d)(2) (providing that “[a]ny recommended determination under paragraph (b) of this section shall include . . . [r]ecommendations regarding a final determination to prohibit, deny, restrict, or withdraw, which shall confirm or modify the proposed determination, with a statement of reasons.). Indeed, a primary driver of seeking public comment on the PD, which is not required under CWA Section 404(c), is to identify aspects of a PD that need revision or clarification in an RD. EPA past practice, as noted by the commenter, is consistent with EPA’s interpretation of its CWA Section 404(c) regulations.

4.A.6 Resource Development Council for Alaska, Inc. (RDC) (Doc. #0840, p. 2-3)

The PD fails to sufficiently justify the “unacceptable adverse effects” necessary to support this proposed action. Rather, the document is full of conclusions and hypotheticals. Statements of mere belief should not be able to justify the magnitude of prohibitions and restrictions the PD would permanently impose on these state-owned lands. As shown by the above-cited examples, the PD inexplicably ignores science-based findings in the 2020 EIS that alternatives presented in that document would not measurably affect the health or value of the Bristol Bay fisheries.

EPA Response

Section 4 of the FD has been revised since the PD to clarify EPA’s basis for this CWA Section 404(c) action. Information and analysis in the FEIS and ROD support EPA’s findings in the FD and both documents are cited extensively by the FD. Appendix B (Attachment 1) of the FD addresses FEIS conclusions that appear to be inconsistent with the FD. See also EPA’s response to comment 4.B.41.

4.A.7 The Pebble Limited Partnership (Doc. #2664-1, Public Hearing Transcript p. 3)

We believe the EPA's regulations are too vague and broad to be constitutional standards. The document is very speculative using words such as could, may, or EPA believes. EPA has not demonstrated actual significant impact, and the action we believe violates both the Alaska Statehood Act and the Alaska National Conservation Lands Act.

EPA Response

With respect to the commenter’s contentions related to EPA’s CWA Section 404(c) implementing regulations, see EPA’s response to comment 4.A.2. With respect to the commenter’s contention that EPA “has not demonstrated actual significant impact,” see EPA’s responses to comments 4.A.1, 4.B.41, and 4.B.42. With respect to the commenter’s contention that EPA’s action violates the Alaska Statehood Act and the Alaska National Conservation Lands Act, see EPA’s responses to comments 2.C.17 and 2.C.26.

4.A.8 Ekwoq Village Council and Bristol Bay Fisherman's Association (Doc. #2664-22, p. 19)

Proposed determination is far too weak. All you needed to do, but what you failed to do in comparing the 2022 proposed determination to 2014, was to identify what the standards were in 2014, that you proposed. And in 2022, you proposed allowing a loss of 8.5 miles of anadromous stream as your limit. In 2014, it was less, it was five miles. For tributaries to anadromous streams, you now propose allowing 91 miles of loss. In 2014, you proposed only 19 miles. In for loss of wetlands, ponds, and lakes, that support anadromous streams. You're now proposing 2100 acres being allowed of loss. And in 2014, 1100 acres. For adverse effects on stream flow, it was 29 miles, is now allowable. In 2014, it was only nine miles. You have no justification for proposing weaker standards than you did in 2014.

EPA Response

See EPA’s response to comment 7.0.1.

4.A.9 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 20)

Pg. 4-2: “EPA Region 10 has prepared this PD because it has reason to believe that unacceptable adverse effects on fishery areas could result from the discharge of dredged or fill material into waters of the United States for the construction and routine operation of the 2020 Mine Plan.”

Comment: Given best available salmon science thoroughly and accurately described in the PD in sections prior to this statement, EPA has more than sufficient reason to conclude that adverse effects to fisheries “could result” from mine operation. Rather, adverse effects of mine operation are inevitable.

EPA Response

EPA’s findings in the PD are consistent with its regulations for this stage of the CWA Section 404(c) review process (see 40 CFR 231.3). See also EPA’s response to comment 4.A.3.

4.A.10 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 12)

Comments on the likely adverse effects on fishery areas and other ecological resources that would be directly or indirectly affected by discharges of dredged or fill material associated with mining the Pebble deposit.

As previously stated, the PD constitutes the most thorough and technically sound governmental summary of adverse effects to fishery areas related specifically to permitting of Pebble Mine. It serves as an excellent update to and summary of the 2014 BBWA and incorporates an impressive number of technical comments provided during various comment periods related to the project. In addition to comments I provided during previous public comment periods (for the BBWA, the 2014 PD, and the FEIS), I provide some specific technical comments regarding the current PD below. It is clear from these documents and dozens of other technical comments I've reviewed that the science regarding adverse effects on fishery areas and other ecological resources are undeniable and likely substantially underestimated in the current PD.

EPA Response

Section 4 of the FD describes EPA's basis for its findings of unacceptable adverse effects on anadromous fishery areas. Also see EPA's response to comment 7.0.1.

4.A.11 Alaska Wildlife Alliance (AWA) (Doc. #0836, p. 4)

According to the Proposed Determination, the EPA is exercising its authority under section 404(c) of the Clean Water Act and implementing regulations at 40 Code of Federal Regulation (CFR) Part 231 due to unacceptable adverse effects on anadromous fishery areas in the Bristol Bay watershed that could result from discharges of dredged or fill material associated with mining the Pebble deposit. We agree with the agency's conclusion, that the proposed Pebble Mine would have unacceptable adverse effects on anadromous fishery areas in the Bristol Bay watershed.

EPA Response

See EPA's response to comment 1.A.1.

4.B Effects on Fishery Areas from Construction and Routine Operation of the 2020 Mine Plan

4.B.1 Les Gara (Doc. #0132, p. 3)

The main commercial ores the mine is intended to produce are copper and gold. Leaching copper has been scientifically proven to damage salmon by impairing their ability to find their rearing streams.

EPA Response

EPA agrees that the potential for copper to interfere with the homing behavior of Pacific salmon has been documented in the scientific literature. Construction and operation of the 2020 Mine Plan would impact water quality; these effects are discussed in Appendix B of the FD. Section 4 of the FD describes the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas. See also EPA’s response to comment 8.0.1.

4.B.2 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 23)

Pg. 6-2: “Direct copper toxicity to wildlife resulting from mine operations is less of a concern than indirect effects from copper-related reductions in aquatic communities (EPA 2014: Chapter 12).”

Comment: Given EPA’s stated concern about copper toxicity to aquatic communities in their consideration for wildlife, that concern warrants far more attention in their consideration of adverse effects to fishery areas from mining construction and operation described in sections 3 and 4.

EPA Response

See EPA’s responses to comments 4.B.1, 4.B.50, and 8.0.1.

4.B.3 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 22)

Pg. 4-60: “Under the Expanded Mine Scenario, aquatic resources could experience multiple secondary impacts, resulting in overlap in the area or miles affected when accounting for the effects of dewatering, habitat fragmentation, and fugitive dust deposition individually.”

Comment: It is unclear why EPA considers fugitive dust resulting from the Expanded Mine Scenario in its cumulative impacts analysis, but fails to do so for the 2020 Mine Plan. If it is considered a secondary rather than direct effect, then copper contamination and other factors should also be included in this analysis.

EPA Response

See EPA’s response to comment 4.B.50. Section 4.2 of the FD is not designed to be a full accounting of all impacts associated with the 2020 Mine Plan. Rather it is focused on a subset of the project’s impacts from certain discharges of dredged or fill material that EPA believes the record demonstrates will result in unacceptable adverse effects on anadromous fishery areas. In contrast, the discussion of the Expanded Mine Scenario is in the section of the FD that focuses on the evaluation of the relevant portions of the CWA Section 404(b)(1) Guidelines. Specifically, the discussion of the Expanded Mine Scenario occurs in the FD discussion regarding cumulative effects, where a more complete discussion of all anticipated impacts is appropriate.

4.B.4 Environmental Protection Network (EPN) (Doc. #0857, p. 2)

The Pebble deposit is a large, low-grade porphyry mineral deposit that contains copper-, gold-, and molybdenum-bearing minerals. Since the materials are low grade (lower concentration), the quantity of ore that needs to be mined to be economical is much larger than if the material was more concentrated. As a result, the impacts to the system are significant. Because the mine is in the headwaters of the systems where the anadromous fish return to spawn each year, the impacts directly affect the entire fishery resource[.]

EPA Response

See EPA's responses to comments 1.B.1. and 1.B.2.

4.B.5 Mass Mailing Campaign (Doc. #2560, p. 1)

As years of studies have demonstrated that large-scale gold and copper mining would irrevocably harm this essential fishery, I believe the EPA must move forward with its proposed rule and prohibit the development of large scale mines in the Bristol Bay region.

EPA Response

See EPA's response to comment 1.B.1. Note, EPA's CWA Section 404(c) action is not a rulemaking, nor does it regulate mining or mineral development.

4.B.6 Johns Hopkins Center for a Livable Future (Doc. #0822, p. 1-2)

In 2014, the EPA and its former Administrator, Gina McCarthy, determined that "...Pebble Mine would likely have significant and irreversible negative impacts on the Bristol Bay watershed and its abundant salmon fisheries" (EPA, 2014c). In 2020, the U.S. Army Corps of Engineers (USACE) denied the Pebble Limited Partnership's (PLP) CWA Section 404 permit application on the grounds that their 2020 Mine Plan was not in the public interest and that "the proposed project would cause unavoidable adverse impacts to aquatic resources which would result in Significant Degradation to aquatic resources" (EPA, 2022). Mining the Pebble deposit would result in extensive loss of waterways, risk toxic contamination of the watershed in the event of a mine tailings dam failure (EPA, 2014d; EPA, 2022) and risk contaminating waterways with copper particles that impair salmonid's sense of smell and subsequent ability to return to spawning grounds (Welch, 2019; McIntyre et al. 2012). Along with many others, we contend that the Bristol Bay watershed is an abundant, thriving, and sustainable ecosystem that should not be sacrificed.

EPA Response

See EPA's responses to comments 1.B.1. and 1.B.2. Section 6 of the FD provides EPA's discussion of spills and failures. Water quality effects are discussed in Appendix B of the FD.

4.B.7 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 49)

EPA's Determination of Impacts to Fish is Well Supported

PLP alleges that EPA's determination of impacts to fish is unsupported because, as PLP claims, "[t]he EIS found no measurable impact to fish and concluded that salmon harvests would not be compromised as a result of the proposed Pebble Project." [PLP 15-day Response at p. 3.] PLP goes on to say that "EPA has cited no new information that contradicts the EIS's findings on fish or the fisheries." [Id at p. 4.] Both assertions are false. As demonstrated at length in Section V above, the Final EIS contained findings of extensive, irreversible damage to anadromous breeding and spawning grounds, including the destruction of more than 8 miles of documented anadromous fish habitat and more than 2,100 acres of contiguous wetlands. These direct impact levels of impact are unprecedented in the history of the 404 program in Alaska and, as the Final EIS disclosed, are multitudes greater when considering indirect and cumulative impacts from mining the Pebble deposit. In addition, by stating that EPA fails to cite new information post-dating the Final EIS, PLP ignores the Army Corps' entire permitting decision, including its 404(b)(1) Guidelines analysis, Record of Decision, and permit denial.

PLP misleadingly says "there can be no justification for relying on the 2014 BBWA." [Id.] The 2014 Watershed Assessment contains the best available science and information regarding the biological, ecological, and chemical factors underlying the effects from mining a porphyry-copper deposit at the headwaters of Bristol Bay and provides a cornerstone to the 2022 PD. It is also not the only foundation on which the 2022 PD rests. In this 2022 PD EPA has supplemented that best available science and information with 8 years of technical information related to PLP's proposed 2020 Mine Plan. EPA was an important participant in the development of the Army Corps' Final EIS and 404(b)(1) Guidelines analysis, meeting weekly with the Army Corps in the lead-up to publication of the Final EIS to discuss the project's impacts. [See 2022 PD at p. 2-13.] Outside of the permitting process, the 2022 PD also incorporates new science that post-dates the Final EIS regarding the portfolio effect and genetic diversity of Bristol Bay's headwaters. [See 2022 PD at p. 3-41.]

PLP has long-touted the NEPA process "as the Magna Carta of environmental protection." [Testimony of Mr. Tom Collier, CEO, Pebble Limited Partnership, Hearing before the Committee on Science, Space, and Technology, Examining EPA's Predetermined Efforts to Block the Pebble Mine (Nov. 5, 2015), at p. 54, available at: <https://www.govinfo.gov/content/pkg/CHRG-114hhrg97767/pdf/CHRG-114hhrg97767.pdf>.] But now that the company has gone through the process and dislikes the result, they seem intent on ignoring the outcomes and findings of that process, namely that the proposed Pebble Mine Project cannot be permitted under the CWA.

EPA Response

EPA agrees with the commenter that information in the FEIS supports EPA's determination of unacceptable adverse effects on fishery areas. The basis for EPA's determination is provided in Section 4, which cites an extensive record of scientific and technical information including the FEIS and the ROD.

4.B.8 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 5-9)

Comments on the likely adverse effects on fishery areas and other ecological resources that would be directly or indirectly affected by discharges of dredged or fill material associated with mining the Pebble deposit (including the SFK, NFK, and UTC and downstream reaches of the Nushagak and Kvichak Rivers).

The Bristol Bay watershed provides habitat for numerous fish, terrestrial mammals, and bird species, many of which are critical to the structure and function of the ecosystem and economies. [Watershed Assessment at ES-6.] Of these ecological resources, the world-class commercial and sport fisheries for Pacific salmon and other salmonid species are the most significant to the economy and Alaska Native communities. The Bristol Bay watershed is exceptional in its unique ability to support all five Pacific salmon species found in North America as well as other sport and subsistence fish species. [Id. at ES-7.] The extraordinary character of this watershed can be attributed to the diverse high-quality, unaltered aquatic habitats and flow regimes of the numerous water bodies, as well as pristine water quality. Additionally, the maintenance of connected surface and subsurface hydrology enables both hydrologic and biogeochemical connectivity between streams, wetlands, ponds, lakes, and rivers providing the needed habitat diversity to support the abundance of species and their life cycles. [Id. at ES-11.]

Mining the Pebble deposit would threaten all of this. The proposed Pebble Mine would fundamentally alter the water quality, hydrology, and habitat of the Bristol Bay watershed, jeopardizing its ability to support this world-class fishery. Additionally, the project poses future threats including tailing dam failures and cumulative effects from reduced genetic diversity, which would threaten the long-term viability of the fishery.

Mining the Pebble deposit would adversely affect water quality and threaten fishery areas

The acid rock drainage, metal leaching, and chemical spills from the mine and associated mining activities would significantly degrade water quality, threaten stream habitat, and endanger the viability of the fishery. These impacts to water quality present some of “the most costly and potentially environmentally damaging issues facing the mining industry.” [William A. Price, List of Potential Info. Requirements in Metal Leaching & Acid Rock Drainage Assessment and Mitigation Work 4-23 (2005), at 4, http://www.pebblescience.org/pdfs/MEND_5_10E_Price_%20Final_Report.pdf. [\[https://perma.cc/UM3X-PV3K\]](https://perma.cc/UM3X-PV3K).]

Acid rock drainage is a threat that exists throughout the lifecycle of a mine—from construction to management and remediation after the mine is decommissioned. Iron and other metal sulfides contained within the rock present at the Pebble deposit can mix with surface or groundwater creating sulfuric acid. [Wild Salmon Center and Trout Unlimited, Bristol Bay’s Wild Salmon Ecosystems and the Pebble Mine: Key Considerations for a Large-Scale Mine Proposal (January 2012) at 27-32, <https://www.wildsalmoncenter.org/wp-content/uploads/2016/02/PM-Report.pdf> [\[https://perma.cc/XTG3-FPDZ\]](https://perma.cc/XTG3-FPDZ); see also Geoffrey Y. Parker et al., Pebble Mine: Fish, Minerals, and Testing the Limits of Alaska’s “Large Mine Permitting Process” 25 AK Law Rev. 1 (2008), at 15-16,

<https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1058&context=alr> [<https://perma.cc/54X4-MKFT>].] This acid presents a significant threat to ecosystems by decreasing the pH of the water to as low as 2.0-4.5. Fish perish in ninety percent of streams with waters with a pH of 4.5, with the effects only becoming more severe as the pH declines. [S.R. Jennings et al., Acid Mine Drainage and Effects on Fish Health and Ecology: A Review, Reclamation Research Group Publ'n 1-26 (2008) <https://earthworks.org/assets/uploads/2018/12/55-S.R.-Jenning-et-al.-2008.-Acid-Mine-Drainage-and-Effects-on-Fish-Health-and-Ecology-A-Review.pdf> [<https://perma.cc/JBX7-CYQM>]. (pg 5)] Higher pH values of around 5.5-6.5 still severely affect the reproductive capacity of adults, the viability of their eggs, alevins, and fry.

These impacts from acid rock drainage are both geographically and temporally large and have a high likelihood of occurring. Due to the highly interconnected hydrology of the Bristol Bay region, the risk of acid-generating mine waste escaping into the aquatic ecosystem during all stages of mine operations—from construction to perpetuity—is amplified. [EPA Region 10, EPA Comments on U.S. Army Corps Draft Clean Water Act Section 404 Permit to Pebble Limited Partnership (2019), https://www.epa.gov/sites/production/files/2019-07/documents/epa-comments-draft-404-permit-pebble-project-07-01-2019_0.pdf. [<https://perma.cc/QW5M-LPTC>].] Additionally, other studies have found that impacts from acid rock drainage “would be possible up to 30 miles downstream” of the proposed mine site, indicating a likelihood of widespread effects. [Ecology and Env't, Inc., An Assessment of Ecological Risk to Wild Salmon Systems from Large-scale Mining in the Nushagak and Kvichak Watersheds of the Bristol Bay Basin 1-133 (2010) at 112-113, <https://www.nature.org/content/dam/tnc/nature/en/documents/ecological-risk-assessment-bristol-bay-alaska.pdf>.] Lastly, EPA's three-year, twice peer reviewed 2014 Watershed Assessment confirms that the Pebble Mine exhibits a significant potential of acid mine drainage, indicating that these long and far-reaching effects are highly likely. [Watershed Assessment at 4-2.]

Leaching of metals, including copper and other heavy metals, is another concern for water quality that can harm both salmon directly and the food resources that they depend upon. [Parker et al., *supra*, at 16.] Copper, even at small quantities (a few parts per billion) can still be toxic to salmonids, damaging olfaction and inhibiting their ability to find food and avoid predation. [Ecology and Env't, Inc., 2010, *supra*, at 114.] Elevated levels of copper can reduce overall salmon viability by increasing their susceptibility to infections, impairing brain function, and altering blood chemistry and metabolism. [Id. at 62.] Other metals both present at the Pebble deposit and on EPA's list of priority pollutants include antimony, arsenic, chromium, lead, nickel, selenium, and zinc, [Id. at 58-59.] which can clog fish gills, [Kendra Zamzow, Acid Rock Drainage and Metal Leaching at the Pebble Prospect, Pebble Science, http://pebblescience.org/Pebble-Mine/acid_drainage.html [<https://perma.cc/Y6SH-ZT3P>].] deplete stream-dissolved oxygen, and acidify water. [Ecology and Env't, Inc., 2010, at 105-106.]

Like acid rock drainage, metal leaching is likely to occur. EPA's 2014 Watershed Assessment notes that even under routine operations “some leachate would escape collection, supernatant water may be spilled from tailings storage facilities . . . and some treatment failures would be expected to occur.” [Watershed Assessment at 8-1.] This leachate would result in elevated instream copper levels and

“cause direct effects on salmonids ranging from aversion to avoidance of the contaminated habitat to rapidly induced death of many or all fish.” [Id. at ES-15.]

Furthermore, the Watershed Assessment examines potential effects even taking into account wastewater treatment “assumed to meet all state standards and national criteria.” [Id.] The assessment predicts that increased levels of copper could ultimately result in “avoidance of streams by salmonids . . . in 24 and 34 to 57 km . . . of streams” in the 2.0 and 6.5 scenarios respectively. [Id. at ES-15-16.] Under the mine expansion scenario, the Watershed Assessment found that “greater than 99% capture efficiency would be required to prevent exceedance of the copper criteria for the South Fork Kuktuli River,” [Id. at ES-15.] which would require advanced technology that is not identified in the Final Environmental Impact Statement (“FEIS”) prepared by the Army Corps. [U.S. Army Corps of Eng’rs, POA-2017-271, Final Environmental Impact Statement for Pebble Mine (July 2020) [hereinafter Pebble FEIS].]

Leachate, as well as the potential impacts of metal leaching on salmonid populations, would also impact water quality. EPA comments on the Draft Environmental Impact Statement (“DEIS”) stressed that not all of the seepage would be captured. [EPA Comments on the National Environmental Policy Act Draft Environmental Impact Statement for Pebble Mine (POA-2017-00271), at 3, 9 (July 1, 2019)

https://www.epa.gov/sites/production/files/2019-07/documents/epa-comments-draft-404-permit-pebble-project-07-01-2019_0.pdf.] That assessment is supported by evidence from other mines: a report found that “water collection and treatment systems have failed to control contaminated mine seepage, resulting in significant water quality impacts” at thirteen of fourteen copper mines “representing 89 percent of U.S. copper production in 2010.” [Earthworks, Copper Mines: Track Record of Accidental Spills, Tailings Dam Failures and Failure to Capture Mine Seepage 1–2, at 1, <https://earthworks.org/cms/assets/uploads/2019/02/Pebble-spills-tailings-seepage-fact-sheet-2.pdf> [<https://perma.cc/5WEX-K5VQ>].] The potential impacts of leaching on salmonid populations would also cause adverse impacts to invertebrates and fish species. [Pebble FEIS at 4.27-75.] Therefore, the collection and treatment of leachate would pose a major threat to the watershed.

Chemical spills from the Pebble Mine operations are another significant water quality threat. To carry out all parts of mining operations, mines must use a variety of ecologically harmful substances including explosives, fuels, oils, antifreeze, water treatment chemicals, herbicides, pesticides, and road de-icing compounds, which have the potential to leak into surface and groundwater. [Robert Moran, Water-Related Impacts at the Pebble Mine, Pebble Science, <http://pebblescience.org/Pebble-Mine/water-impact.html> [<https://perma.cc/GE99-MY8F>].] Due to the unprecedented size of the mine and indefinite time frame of treatment and storage of waste, risk assessment is difficult. Following a report created by a PLP contractor in 2018, Pebble was estimated to generate “an average of 6.8 billion gallons per year of wastewater during operations and 11.8 billion gallons per year during closure, requiring capture and treatment” in perpetuity. [Earthworks, Pebble Mine: Unprecedented Waste Water Treatment Requirements (2019), <https://earthworks.org/cms/assets/uploads/2019/02/Pebble-WTP-fact-sheet.pdf> [<https://perma.cc/5MQT-WYCD>].] These volumes of waste “far surpass the capture and

treatment volumes for any other U.S. mining operation, including the nation’s largest Superfund mining sites,” and the unprecedented scale of this operation likely raises the probability of some accident. [NRDC, Comments to the U.S. Army Corps of Engineers on the Draft Environmental Impact Statement and Application for Clean Water Act Permit (POA-2017-00271) for the proposed Pebble Project (July 1, 2019) at 47-48.] Additionally, the need to manage the waste in perpetuity increases the likelihood of eventual contamination, and EPA’s Watershed Assessment found that “it is impossible to evaluate the success of such long-term collection and treatment systems for mines. No examples exist, because [Pebble’s] timeframes exceed both existing systems and most human institutions.” [Watershed Assessment at 6-27.]

In addition to treatment and storage of waste, pipeline failures and spills pose potentially catastrophic threats. These pipelines, which would be constructed along the transportation corridor, carry copper-gold slurry, [Pebble FEIS at 2-8.] water, [Id. at 4.27-169.] diesel, [Id. at 4.27-169.] and natural gas. [Id. at K2-35.] The pipelines are also known to frequently break or spill during mining operations. A break or spill could result in thousands of gallons of slurry containing metals and other harmful compounds entering into sensitive anadromous streams. [Ecology and Env’t, Inc., 2010, supra, at 86.] Chemical spills could imperil salmon habitat and spawning areas [Id. at 89.] and could “impact thousands to hundreds of thousands of adult salmon and high-value resident fish, and hundreds of thousands to millions of juvenile fish.” [Id. at 85.]

Each water quality impact on its own, including acid rock drainage, metal leaching and chemical spills, would result in unacceptable adverse effects to the health and functioning of the fishery and Bristol Bay watershed. Occurring simultaneously, these water quality impacts undoubtedly justify final action under Section 404(c).

EPA Response

See EPA’s responses to comments 4.B.1 and 4.B.50.

4.B.9 Seattle Aquarium (Doc. #0134, p. 1)

We stand with Alaska Natives, fishing communities and others who have been opposing the proposed Bristol Bay Pebble Mine for years. The science clearly shows the dangers posed by developing the mine are too great to allow the project to proceed. The EPA’s earlier scientific assessment found that the mining activities would destroy more than 80 miles of streams and 3,500 acres of wetlands and generate billions of gallons of mine pollution.

EPA Response

See EPA’s responses to comments 1.A.1 and 1.B.1. The impacts the commenter described are associated with the 2.0 billion ton mine scenario evaluated in the BBA (EPA 2014a). The FD evaluates the effects of the 2020 Mine Plan, a 1.3 billion ton mine at the Pebble deposit. See Section 4 of the FD for the levels of loss and streamflow changes associated with the 2020 Mine Plan.

4.B.10 Bee Long (Doc. #0165, p. 1)

This Area includes over 100 miles of permanently lost river waters including headwater streams, approximately 2113 acres of natural wetlands and 29 miles of unacceptable adverse effects due to stream flow alteration of 20%.

EPA Response

EPA agrees with the commenter that these are some of the impacts associated with the 2020 Mine Plan and were described in the PD.

4.B.11 Bristol Bay Native Corporation (BBNC) (Doc. #0191, p. 1)

More than a decade of scientific study and review and a robust administrative record all support EPA protecting the critical watersheds around the Pebble deposit. As proposed in the Pebble 2020 mine plan, the 20-year mine would destroy approximately 100 miles of streams and 2,100 acres of wetlands, completely decimating headwaters critical to sustaining Bristol Bay's salmon fishery. As EPA's robust scientific record shows, even destroying 5 miles of salmon streams and 1,100 acres of wetlands would pose an unacceptable adverse impact to Bristol Bay's salmon fishery. Because of its location, size, and type, if built Pebble Mine would destroy our pristine waters, salmon fishery, and way of life.

EPA Response

See EPA's responses to comments 1.B.1 and 7.0.1.

4.B.12 Cole Graham (Doc. #0212, p. 1)

The impact from mining waste on watersheds is well documented. According to the EPA's Proposed Determination of the US EPA Region 10 Pursuant to Section 404(c) of the Clean Water Act, "the mine site proposed in the 2020 [Pebble] Mine Plan would result in the total loss of approximately 99.7 miles (160.5 km) of stream habitat, representing approximately 8.5 miles (13.7 km) of anadromous fish streams and 91.2 miles (146.8 km) of additional streams that support anadromous fish streams. Such discharges of dredged or fill material also would result in the total loss of approximately 2,113 acres (8.6 km²) of wetlands and other waters that support anadromous fish streams." This barely scratches the surface of the report, but it gives you an idea of the impact this mine would have.

EPA Response

EPA agrees with the commenter that these are some of the impacts associated with the 2020 Mine Plan, which were described in the PD.

4.B.13 Sensiba San Filippo LLP (SSF) (Doc. #0482, p. 1)

Pebble's proposed plans would destroy 3,000 acres of wetlands and more than 21 miles of salmon runs. These vital resources are essential to Alaska's biodiversity and provide many environmental resources,

such as water filtration and flood protection. Due to Pebble's location and geochemistry, there is a significant risk of water pollution in the rivers that feed Bristol Bay.

EPA Response

See EPA's responses to comments 1.B.2 and 4.B.9. See also Appendix B of the FD for EPA's discussion regarding water quality effects.

4.B.14 Diane Sallee (Doc. #0515, p. 1)

I am writing to urge the EPA to protect Bristol Bay fisheries from the proposed Pebble Mine project. The Pebble Mine project would destroy 3,500 acres of wetlands and 81 miles of salmon streams.

EPA Response

See EPA's responses to comments 1.A.1 and 4.B.9.

4.B.15 National Association of Wetland Managers (NAWM) (Doc. #0606, p. 3)

The proposed determination's three "restricted" watersheds—South Fork Kaktuli River (SFK), North Fork Kaktuli River (NFK), and Upper Talarik Creek (UTC)—include at least 42,111 acres of wetlands covering 18% of the watershed area. [USEPA. 2022 Proposed Determination. p. 3-8 (Data source: USFWS 2021 NWI Wetlands data)] These are conservative estimates, and actual wetland acreage may be as high as 40% greater. [Ibid. p. 3-8] The proposed mine is projected to permanently remove 99.7 miles of high value stream habitat, 2,052 acres of mostly pristine wetlands, and 61 additional acres of other waters (totaling 2,113 acres of wetlands, lakes, and ponds). [Ibid. pp. ES-10, 4-49] Secondary effects of the discharge would additionally alter flow of at least 29 miles of anadromous fish streams downstream with over 20% change to average monthly streamflow. [Ibid. p. ES-10]

EPA Response

EPA agrees with the commenter that these are some of the impacts associated with the 2020 Mine Plan, which were described in the PD.

4.B.16 Midgard Environmental Services LLC (Doc. #0616, p. 1)

Given the unavoidable environmental impacts and risks that would be associated with mining in this extremely challenging setting, large-scale ore body development would certainly result in unacceptable adverse effects to a globally significant fishery and high biodiversity aquatic habitat. The planned permanent disturbance of roughly 100 miles of streams and 2000 acres of wetlands by itself would directly lead to substantial adverse effects.

EPA Response

See EPA's responses to comments 1.A.1. and 1.B.2.

4.B.17 Seafood Harvesters of America (Doc. #0811, p. 2)

Extensive scientific study and research efforts, and a robust administrative record, all support protections for the watersheds around the Pebble deposit. As proposed in the Pebble 2020 mine plan, the 20-year mine would destroy approximately 100 miles of streams and 2,100 acres of wetlands, decimating the headwaters that are so important to sustaining Bristol Bay's salmon fisheries. EPA's own scientific research shows that destroying just 5 miles of salmon streams and 1,100 acres of wetlands would cause unacceptable adverse impacts to the Bristol Bay salmon fishery.

EPA Response

See EPA's responses to comments 1.B.1. and 7.0.1.

4.B.18 Businesses for Bristol Bay et al. (Doc. #0827, p. 1)

Yet the Pebble Mine threatens all of that. If fully developed, the Pebble Mine would generate up to 10 billion tons of toxic mining waste. As proposed in the Pebble Limited Partnership's (PLP) 2020 mine plan, the 20-year mine would destroy more than 105 miles of streams and 2,200 acres of wetlands, permanently degrading critical salmon habitat in Bristol Bay's pristine headwaters. Based on the EPA's peer-reviewed Bristol Bay Watershed Assessment, the Pebble Mine would result in "unacceptable adverse effects" to areas important to fishing, recreation and wildlife, satisfying the statutory trigger to invoke Section 404(c) of the Clean Water Act.

EPA Response

See EPA's response to comment 1.A.1.

4.B.19 Alaska Wildlife Alliance (AWA) (Doc. #0836, p. 4-5)

{According to the Proposed Determination, the EPA is exercising its authority under section 404(c) of the Clean Water Act and implementing regulations at 40 Code of Federal Regulation (CFR) Part 231 due to unacceptable adverse effects on anadromous fishery areas in the Bristol Bay watershed that could result from discharges of dredged or fill material associated with mining the Pebble deposit. We agree with the agency's conclusion, that the proposed Pebble Mine would have unacceptable adverse effects on anadromous fishery areas in the Bristol Bay watershed.}

We cite, first and foremost, the EPA Region 10 Regional Administrator's finding in the 2022 Proposed Determination that discharges of dredged or fill material for the construction and routine operation of the mine at the Pebble deposit identified in the 2020 Mine Plan (PLP 2020) could result in unacceptable adverse effects on anadromous fishery areas in the SFK and NFK watersheds. Based on information in Pebble Limited Partnership's (PLP) Clean Water Act (CWA) Section 404 permit application, the Final Environmental Impact Statement (FEIS), and the Record of Decision (ROD), such discharges would have the following impacts on aquatic resources:

* The loss of approximately 8.5 miles (13.7 km) of documented anadromous fish streams (Section 4.2.1).

* The loss of approximately 91.2 miles (146.8 km) of additional streams that support anadromous fish streams (Section 4.2.2).

* The loss of approximately 2,113 acres (8.6 km²) of wetlands and other waters that support anadromous fish streams (Section 4.2.3).

* Adverse impacts to at least 29 additional miles (46.7 km) of anadromous fish streams resulting from greater than 20 percent changes in average monthly streamflow (Section 4.2.4).

Sections 4.2.1 through 4.2.4 describe the basis for EPA Region 10's determination that each of the above impacts could, independently, result in unacceptable adverse effects on anadromous fishery areas (including spawning and breeding areas). This is the foundation for the agency's subsequent conclusions and Alaska Wildlife Alliance's support for the Proposed Determination.

EPA Response

See EPA's response to comment 1.A.1.

4.B.20 Alaska Wildlife Alliance (AWA) (Doc. #0836, p. 4, 5-6)

{According to the Proposed Determination, the EPA is exercising its authority under section 404(c) of the Clean Water Act and implementing regulations at 40 Code of Federal Regulation (CFR) Part 231 due to unacceptable adverse effects on anadromous fishery areas in the Bristol Bay watershed that could result from discharges of dredged or fill material associated with mining the Pebble deposit. We agree with the agency's conclusion, that the proposed Pebble Mine would have unacceptable adverse effects on anadromous fishery areas in the Bristol Bay watershed.}

(...)

We also cite EPA's four independent unacceptability findings in the draft EIS, each of which is based on one or more factors, including:

1. The pristine condition and productivity of anadromous habitat throughout the SFK, NFK, and UTC watersheds.
2. The large amount of permanent loss of anadromous fish habitat. As demonstrated in the FEIS and ROD, construction and routine operation of the mine proposed in the 2020 Mine Plan would result in the discharge of dredged or fill material into waters of the United States, including streams, wetlands, lakes, and ponds overlying the Pebble deposit and within adjacent watersheds. The direct effects (i.e., resulting from placement of fill in aquatic habitats) and certain secondary effects of such discharges (i.e., associated with a discharge of dredged or fill material, but not resulting from the actual placement of such material) would result in the "total loss" of aquatic habitats important to anadromous fishes. These losses are the result of the construction and routine operation of the various components of the mine site, including the open pit, bulk tailings storage facility (TSF), pyritic TSF, power plant, water management plans, water treatment plans, milling/processing facilities, and supporting infrastructure. According to the FEIS and ROD, discharges of dredged or fill material to construct and operate the mine

site proposed in the 2020 Mine Plan would result in the total loss of approximately 99.7 miles (160.5 km) of stream habitat, representing approximately 8.5 miles (13.7 km) of anadromous fish streams and 91.2 miles (146.8 km) of additional streams that support anadromous fish streams. Such discharges of dredged or fill material also would result in the “total loss” of approximately 2,113 acres (8.6 km²) of wetlands and other waters that support anadromous fish streams. Additional secondary effects of the proposed discharges of dredged or fill material at the mine site would degrade anadromous fishery areas downstream of the mine site. Further, streamflow alterations from water capture, withdrawal, storage, treatment, or release at the mine site are another secondary effect of the discharge of dredged or fill material associated with the construction and routine operation of the 2020 Mine Plan. Such streamflow alterations would adversely affect at least 29 miles (46.7 km) of anadromous fish streams downstream of the mine site due to greater than 20 percent changes in average monthly streamflow. These streamflow alterations would result in major changes in ecosystem structure and function and would reduce both the extent and quality of anadromous fish habitat downstream of the mine.

3. The degradation of additional downstream spawning and rearing habitat for salmon due to the loss of ecological subsidies provided by the eliminated streams, wetlands, and other waters. According to the FEIS and ROD, the stream, wetland, and other aquatic resource losses from the footprint of the 2020 Mine Plan would reverberate downstream, depriving downstream anadromous fish habitats of nutrients, groundwater inputs, and other ecological subsidies from lost upstream aquatic resources.

4. The resulting erosion of both habitat complexity and biocomplexity within the SFK, NFK, and UTC watersheds, which are key to the abundance and stability of salmon populations within these watersheds.

EPA Response

See EPA’s responses to comments 1.A.1 and 1.B.2.

4.B.21 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 2)

The mine footprint alone covers approximately 9,000 acres of the landscape and the Project would result in the direct and permanent loss of more than 2,232 acres of wetlands, ponds, and marine waters and 105.4 miles of streams, including 8.5 miles of salmon streams and 21.2 miles of fish-bearing streams. The proposed 20-year mine would completely decimate headwaters critical to sustaining Bristol Bay’s salmon fishery. Such impacts -proposed to occur in the state’s most valuable and robust salmon ecosystem-are unprecedented in the history of resource development projects in Alaska.

EPA Response

EPA agrees with the commenter that these are some of the impacts associated with the 2020 Mine Plan, which were described in the FEIS and PD.

4.B.22 National Fisheries Institute (NFI) (Doc. #0854, p. 3)

According to the scientific review conducted by EPA, the mine as proposed by PLP would destroy more than 100 miles of streams and 2,113 acres of wetlands around Bristol Bay, permanently degrading salmon habitat in Bristol Bay's headwaters. [United States Environmental Protection Agency, Proposed Determination of the U.S. Environmental Protection Agency Region 10 Pursuant to the Section 404(c) of the Clean Water Act Pebble Deposit Area, Southwest Alaska (May 2022) (<https://www.epa.gov/system/files/documents/2022-05/Pebble-Deposit-Area-404c-Proposed-Determination-May2022.pdf>)] Industrial development that adheres to appropriate environmental safeguards can be acceptable. But in this case, it is clear that PLP's proposed Pebble Mine would undermine the entire Bristol Bay salmon fishery.

EPA Response

See EPA's response to comment 1.A.1.

4.B.23 Mass Mailing Campaign (Doc. #2540, p. 1)

Yet the Pebble Mine would risk it all. If fully developed, the Pebble Mine would generate up to 10 billion tons of toxic mining waste. Even the first 20 years of mining proposed in the Pebble Limited Partnership's 2020 plan would destroy approximately 100 miles of streams and 2,100 acres of wetlands, completely decimating areas critical to Bristol Bay's salmon fishery.

EPA Response

See EPA's response to comment 1.A.1.

4.B.24 Patagonia (Doc. #2061, p. 1)

In sum, the EPA report estimates the Pebble Project would create over 10 billion metric tons of waste rock, and destroy up to 94 miles of streams, 4,900 acres of wetlands, and 450 acres of ponds and lakes.[Id. at ES-9 and ES-14.]

EPA Response

The commenter is describing the impacts estimated for the largest mine scenario evaluated in the BBA (EPA 2014a), a 6.5 billion ton mine at the Pebble deposit. The FD evaluates the effects of the 2020 Mine Plan, a 1.3 billion ton mine at the Pebble deposit. See Section 4 of the FD for the levels of loss and streamflow changes associated with the 2020 Mine Plan that EPA determined will result in unacceptable adverse effects on anadromous fishery areas.

4.B.25 Loren Karro (Doc. #0847, p. 1-2)

As the Executive Summary says "Alaska's Bristol Bay watershed...is an area of unparalleled ecological value, boasting salmon diversity and productivity unrivaled anywhere in North America. As a result, the

region is a globally significant resource.” [ES-1] The Proposed Decision recognizes that “The direct and secondary effects of the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan would result in both the permanent loss of certain aquatic resources and the degradation of additional aquatic resources. The loss and additional degradation of aquatic resources would adversely affect anadromous fishery areas.”[sec 4.1 1.] “[The] Mine Plane would also result in the permanent loss of approximately 2,113 acres (8.6 km) of wetlands and other waters at the mine site”. [sec 4.2.3] “There are no examples of other projects resulting in this level of permanent loss of anadromous fish streams in the CWA Section 404 regulatory program in Alaska.” [sec 4.3.1.2.4]

EPA Response

See EPA’s responses to comments 1.A.1 and 1.B.2. Note, some of the text that the commenter has quoted from the PD has been revised in the FD.

4.B.26 Mass Mailing Campaign (Doc. #2550, p. 1)

The Pebble Mine project, if developed, would be over a mile long, a mile wide and 200 meters deep. It would destroy wetlands, lakes, ponds and 81 miles of salmon streams.

EPA Response

EPA agrees that discharges of dredged or fill material associated with developing the Pebble deposit will result in the loss and degradation of wetlands, lakes, ponds, and salmon streams (see Section 4.2 of the FD).

4.B.27 Environmental Protection Network (EPN) (Doc. #0857, p. 6)

Based on our review of the 2022 Proposed Determination and the associated record, EPN concurs with the conclusions made that the proposed mine operation would have unacceptable adverse effects on the anadromous fisheries and other natural resources in the watershed. We support the Region 10 issuance of the Section 404(c) Determination prohibiting the specification of the site identified in the 2020 Mining Plan. We also support the restriction on the specification of any other mining activities in the Pebble deposit in the identified Bristol Bay watershed that would have the same, similar, or more extensive impacts. We encourage the Regional Administrator to submit a Recommended Determination to the Assistant Administrator for Water for consideration. [Under the regulations, the Regional Administrator is authorized to sign and issue the proposed determination and the recommended determination. Although there had been a one-time delegation from the Administrator to the EPA General Counsel for the earlier 404 (c) actions related to Pebble, on May 17, 2022, that delegation was withdrawn and the existing delegation from the Administrator to the Assistant Administrator for water remains effective. See fn11, Proposed Determination at Pp 1-2.]

EPA Response

EPA has determined that discharges of dredged or fill material to construct and operate the 2020 Mine Plan will have unacceptable adverse effects on anadromous fishery areas

in the SFK and NFK watersheds. EPA has also determined that discharges of dredged or fill material associated with future proposals to develop the Pebble deposit that result in the same, similar, or greater levels of loss or streamflow changes as those associated with the 2020 Mine Plan, anywhere in the SFK, NFK, and UTC watersheds, will also have unacceptable adverse effects on anadromous fishery areas.

The FD does not regulate mining or mineral development. EPA’s CWA Section 404(c) action limits USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material. In response to comments on the 2022 PD, EPA Region 10 and EPA Office of Water considered the scope of discharges of dredged or fill material that should be subject to its CWA Section 404(c) action. EPA determined that its FD should focus on discharges of dredged or fill material associated with developing the Pebble deposit because the potential for mining development in the Nushagak and Kvichak River watersheds appears to be greatest for the Pebble deposit. Significant exploration activity has occurred at this deposit for many years and a significant amount of information about this deposit is available (see Section 2 of the FD). Development of the Pebble deposit is the only activity currently proposed in the SFK, NFK, and UTC watersheds that would involve such extensive discharges of dredged or fill material and for which a significant amount of information regarding such discharges is available. The administrative record supports EPA’s FD. See also EPA’s response to comment 1.B.1.

EPA’s PD included references to “associated with mining the Pebble deposit.” EPA’s FD instead includes references to “associated with developing the Pebble deposit.” EPA changed its wording in the FD to more accurately describe its intent throughout its 404(c) process to evaluate activities that result in discharges of dredged or fill material associated with developing of the Pebble deposit, which include construction and operation of a mine.

4.B.28 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 34-36)

1. Unacceptable adverse effects on fishery areas (including spawning and breeding areas)

Development of the 2020 Mine Plan would require the discharge of dredged or fill material into waters of the United States at the mine site, including massive direct and secondary effects of such discharges on fishery areas. Region 10’s analysis utilizes the best available data and science developed during the NEPA process and PLP’s permit application to document clearly unacceptable adverse effects on fishery areas including spawning and breeding areas.

The Pebble Final EIS notes a variety of impacts to salmon, the commercial fishery, and subsistence lifestyles directly from the destruction of anadromous habitat and Bristol Bay’s headwaters and through reductions in water quality from spills and during normal operations:

* Direct Impacts to Fish and Fish Habitat at the Mine Site: “Potential impacts to fish values at the mine site include: direct loss of aquatic habitat in the NFK and SFK drainages; fish displacement, injury and mortality; changes in surface water and groundwater flows that could impact fish spawning, rearing, and off-channel habitat; increased sedimentation and turbidity in streams; impacts to fish migration; changes in surface water temperatures; and changes to surface water chemistry. In summary, development of the mine site would permanently remove approximately 99 miles of streambed habitat in the NFK and SFK drainages. Direct effects on fish, including displacement, injury, and mortality, would occur with the permanent removal of stream habitat in the NFK and SFK drainages due to mine site construction. Stream productivity in the NFK and SFK drainages would be reduced to some degree with the loss of physical and biological inputs. These impacts would be permanent, and certain to occur. The magnitude and extent of impacts from the change in streamflows would be to directly change the quantity and quality of instream spawning and rearing habitat for resident and anadromous fish. Changes in flows could also directly alter available habitat for benthic macroinvertebrate production, which is important for fish growth and survival.” [Pebble Final EIS, Executive Summary, at page 81.]

* Direct Impacts to Fish and Fish Habitat from Transportation Corridor: “The magnitude and extent of habitat loss from development of the transportation corridor and onshore portions of the natural gas pipeline under Alternative 3 would eliminate 5.7 miles of streambed habitat and 7.7 acres of riverine wetland habitat.” [Pebble Final EIS, Executive Summary, at page 84.]

* Impacts to Commercial and Recreational Fisheries: “Project construction and operations could have an impact on the commercial fishing community (e.g., crew members or processing), on the recreational sector via recreational fishing, and on revenue generated to state and local government. Potential impacts are influenced by project-related effects on fish population, habitat, and runs, as well as real and perceived effects on the quality of the fish, environment, and fishing experience.” [Pebble Final EIS, Executive Summary, at page 86.]

* Impacts to Special Aquatic Sites: “Special aquatic sites that would be directly and permanently impacted under Alternative 3 include mudflats, riffle and pool complexes, vegetated shallows, and wetlands. [...] The greatest magnitude of impact to special aquatic sites would be to wetlands (2,090 acres), including regionally important riparian wetlands (132 acres), fens (72 acres), forested wetlands (5 acres), estuarine wetlands (less than 1 acre), followed by riffle and pool habitat (92 acres, including 88.5 miles of upper perennial stream), mudflats (57 acres), and vegetated shallows (4 acres).” [Pebble Final EIS, Executive Summary, at page 98.]

* Cumulative Impacts to Wetlands and Other Waters: “Cumulative impacts to wetlands and other waters associated with the proposed Alternatives and the Pebble Project expansion scenario would transect 13 watersheds. [...] a maximum cumulative impact of 15,331 acres of wetlands and other waters (Alternative 1a), [...] would be lost or degraded with expansion of the mine.” [Pebble Final EIS, Executive Summary, at page 99.]

Confirming these Final EIS findings, cooperating agencies, including the State of Alaska noted the following about the proposed Pebble Mine Project during the EIS process:

* Environmental Protection Agency: “this project as described [...] may have substantial and unacceptable adverse impacts on fisheries resources in the project area watersheds, which are aquatic resources of national importance.” [EPA, Comments on the U.S. Army Corps Draft Clean Water Action 404 Permit to Pebble Limited Partnership (July 1, 2019), at page 3, available at enclosed Appx. C, pp. 1012 to 1069.]

* Department of Interior: “The DOI is concerned that developing an open pit mine and associated infrastructure at the headwaters of critical salmon habitat could cause permanent, adverse impacts to the ecologically and economically important Bristol Bay watershed, its world-class fisheries, and the commercial, recreational, and subsistence users who depend on them.” [DOI, Comments on the Pebble Draft Environmental Impact Statement (July 1, 2019), at page 5, available at: enclosed Appx. C, pp. 1087 to 1095.]

* U.S. Fish & Wildlife Service: “the proposed permanent placement of dredged or fill material [...] for the purpose of developing a surface mine and associated infrastructure in the Bristol Bay watershed, will have an unacceptable and substantial impact on aquatic resources of national importance.” [USFWS letter to Col. Borders, USACE (July 25, 2019), available at: enclosed Appx. C, pp. 1235 to 1237.]

* State of Alaska: “The proposed Pebble Project, specifically the mine pit, and associated ore processing and tailings storage areas straddle the headwaters of two drainages that support highly productive and valuable fishery resources. [...] the project has the potential to impact a biologically productive and sensitive part of Alaska” [State of Alaska letter to USACE (June 29, 2018), available at enclosed Appx. C, pp. 1243 to 1265.]

Subsequent to publication of the Final EIS, the Army Corps initially determined that—based on the direct impacts of the proposed Pebble Mine Project on wetlands and streams in the Bristol Bay region—the project as proposed “would cause unavoidable adverse impacts to aquatic resources and, preliminarily, that those adverse impacts would result in significant degradation to those aquatic resources.” [Letter from David S. Hobbie, Regional Regulatory Division Chief, U.S. Army Corps of Eng’rs, to James Fuego, Pebble Limited Partnership (Aug. 20, 2020).] The Army Corps gave PLP the opportunity to rectify this initial determination, and when PLP failed to do so, the Army Corps Record of Decision confirmed that proposed project failed to comply with the CWA Section 404(b)(1) Guidelines because, even after consideration of proposed mitigation measures, “the proposed project would cause unavoidable adverse impacts to aquatic resources which would result in Significant Degradation to aquatic resources.” [Letter from David S. Hobbie, Regional Regulatory Division Chief, U.S. Army Corps of Eng’rs, to James Fuego, Pebble Limited Partnership (Nov. 25, 2020).]

The 2022 PD thus confirms the Army Corps’ findings of adverse impacts and significant degradation in particular to salmon spawning and breeding areas.

EPA Response

The commenter highlights information from the FEIS, comments provided by EPA and other resource agencies regarding the FEIS, as well as the USACE’s ROD regarding the

2020 Mine Plan. Information from the FEIS and ROD is considered throughout the FD. Section 4 of the FD provides the basis for EPA’s determination that certain discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

4.B.29 Charles Borbridge (Doc. #2097, p. 1)

The entire Pebble deposit is located in an area important to salmon production. Pollutants and habitat destruction cannot help but harm the fishery. This toxic dump would be located in the worlds grand central station for salmon production.

EPA Response

See EPA’s response to comment 1.B.2.

4.B.30 World Wildlife Fund (WWF) (Doc. #1739, p. 1)

As described in the Proposed Determination published on May 26, 2022, all available data confirm that the 2020 Pebble Mine Plan, with its associated discharge of dredged or fill material for the construction and routine operation, will result in unacceptable adverse effects on anadromous fishery areas in the South Fork Koktuli River (SFK), North Fork Koktuli River (NFK), and Upper Talarik Creek (UTC) watersheds.

EPA Response

See EPA’s response to comment 1.A.1.

4.B.31 Tribal Operations Committee (ROTC) (Doc. #2009, p. 1-2)

The Bristol Bay region supports one of the most productive and ecologically important wild salmon ecosystems on earth. On average 37 million sockeye salmon return each year. Nearly half of those returning fish are headed back to the Nushagak and Kvichak watersheds. Even without a catastrophic breach of the massive earthen dams that would be required to store up to 10 billion tons of toxic mine waste, a large mine the size of the proposed Pebble project will destroy miles of salmon streams and up to 4,300 acres of salmon wetland habitat.

The millions of fish caught in the watershed each year generate 15,000 jobs and add \$2.2 billion into the economy. They support not only the commercial and sport fishing industries, but a traditional way of life that has endured for millennia and thrives today. EPA has a trust responsibility to ensure that these communities are protected.

EPA Response

See EPA’s responses to comments 1.B.2 and 4.B.24.

4.B.32 Mass Mailing Campaign (Doc. #2553, p. 1)

All of this could be lost if we do not put long-term protections in place that protect Bristol Bay from the proposed Pebble Mine. The scientific record clearly shows that the Pebble Mine would have unacceptable adverse impacts on the Bristol Bay watershed and its wild salmon fishery, and yet the door is still open for the Pebble Mine to be developed.

EPA Response

See EPA's responses to comments 1.B.1 and 1.B.2.

4.B.33 Environmental Protection Network (EPN) (Doc. #0857, p. 5)

EPA Region 10's findings regarding the unacceptable adverse effects on anadromous fishery areas are fully detailed and supported in Section 4 of the 2022 Proposed Determination.

EPA Response

See EPA's response to comment 1.A.1.

4.B.34 World Wildlife Fund (WWF) (Doc. #0138, p. 2)

As noted in the Proposed Determination, the waters draining the Pebble deposit area support genetically distinct salmon population segments and provide key habitat for numerous other fish species. These headwater streams play a vital role in sustaining diverse, abundant, and unique anadromous fish populations by providing important fish habitat and by supplying energy and nutrients to support fish populations in downstream habitats. Additionally, as noted in the Proposed Determination, the risks posed to the SFK, NFK, and UTC watersheds are not exclusive to these watersheds; impacts are likely to result in permanently lost habitat for juvenile Coho, Chinook, and Sockeye salmon due to the erosion of habitat complexity and biocomplexity downstream.

EPA Response

See EPA's responses to comments 1.B.1 and 1.B.2.

4.B.35 World Wildlife Fund (WWF) (Doc. #1739, p. 1-2)

Additionally, as noted in the Proposed Determination, the risks posed to the SFK, NFK, and UTC watersheds are not exclusive to these watersheds; impacts are likely to result in permanently lost habitat for juvenile Coho, Chinook, and Sockeye salmon due to the erosion of habitat complexity and biocomplexity downstream.

EPA Response

See EPA's responses to comments 1.B.1 and 1.B.2.

4.B.36 American Fisheries Society (AFS) and Alaska Chapter of AFS (Doc. #0813, p. 2)

The EPA makes four independent unacceptability findings that support restricting the use of certain waters in the NFK, SFK, and UTC watersheds in southwest Alaska as disposal sites for dredged or fill material in connection with mining of the Pebble deposit.

They are (1) the pristine condition and productivity of anadromous habitat throughout the SFK, NFK, and UTC watersheds; (2) the large amount of permanent loss of anadromous fish habitat; (3) the degradation of additional downstream spawning and rearing habitat for Coho, Chinook, and Sockeye salmon resulting from the loss of ecological subsidies provided by the eliminated streams, wetlands, and other waters; (4) and the resulting erosion of both habitat complexity and biocomplexity within the SFK, NFK, and UTC watersheds, which are key to the abundance and stability of salmon populations within those watersheds.

These findings are consistent with the best-available science and our prior comments to the agency on the significant harm that would result to Bristol Bay's anadromous and resident fish and fisheries from large-scale mining activities. In 2014, AFS objected to the agency's withdrawal of the 404(c) Proposed Determination for many of these reasons and others.

EPA Response

See EPA's response to comment 1.A.1.

4.B.37 Tribal Operations Committee (RTOC) (Doc. #2009, p. 2)

The Tribal Caucus strongly support's EPA's conclusion in the Determination that mining at the Pebble Mine would have "unacceptable adverse effects" on "an area of unparalleled ecological value, boasting salmon diversity and productivity unrivaled anywhere in North America." History supports this conclusion – there is no mine of this size that has not had significant impacts on water quality and habitat in the area.

EPA Response

See EPA's response to comment 1.A.1.

4.B.38 Mass Mailing Campaign (Doc. #2549, p. 1)

The proposed Pebble Mine would carve an open pit from the headwaters of the Bay's two largest rivers, threatening clean water and pristine fish habitat there and for 208 miles downstream. Somewhere between 1.2 billion and 11 billion tons of mine waste could then remain in the area, putting our recreational fishing, as well as the area's robust commercial fishing economy, at risk.

EPA Response

See EPA's responses to comments 1.A.1. and 1.A.3.

4.B.39 Dietrich Hoecht (Doc. #0172, p. 1-2)

Problem Statement under Section 404c

The dumping and storage of mine tailings within a watershed poses serious permanent problems. The mine waste is described as finely ground residue, after the metals have been extracted. Mixed with water it is mud, and drainage transforms it into silt in creeks and streams. Silt remains forever. It accumulates within gravel and also adjacent to the flowing water as caked sediment. Every time a heavy rain happens a stream meanders from its established path and takes along the sediment. It is well understood what toxic mine sediment does to aquatic life, including to salmon eggs and fry. 2. Remediation of stream and watershed contamination 52-inch annual rainfall in subject geographical area results in periodic downpours of several inches. A piled-up earthen dam will make the muck behind it spill over or breach a barrier. Any containment structure would be needed for centuries, if not forever. Very predictably maintenance and repair mandates will lapse over time. The muck content cannot be biologically stabilized with grass or other vegetation, since it is toxic to plant life. The wet and cold climate would aggravate and undo any attempt to do so. Contamination of the watershed cannot be remedied and will continue its damage downstream and into the waters of Bristol Bay - with absolute certainty. Pristine waters will cease to exist.

EPA Response

The impacts associated with an unplanned release of mine tailings into the environment are discussed in the FEIS and Section 6 of the FD. Section 4 of the FD provides the basis for EPA’s determination that certain discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

4.B.40 Alaska Department of Environmental Conservation (Doc. #0814, p. 24-25, 31)

Region 10 fails to justify the Proposed Prohibition of discharges within the mine site footprint.

“[W]here [an] agency’s reasoning is irrational, unclear, or not supported by the data it purports to interpret,” courts “must disapprove the agency’s action.” [Nw. Coal. For Alternatives to Pesticides (NCAP) v. EPA, 544 F.3d 1043, 1052 n.7 (9th Cir. 2008).]

In the FEIS, the Corps found that operations under the proposed mine plan “would not be expected to have a measurable effect on fish numbers or result in long-term changes to the health of the commercial fisheries in Bristol Bay[.]” [FEIS at 4.6-3.]

Region 10’s Proposed Prohibition—prohibiting the use of WOTUS within the proposed project’s 13.1 square mile footprint for specification as disposal sites—concludes just the opposite. For support, Region 10 presents “four independent unacceptability findings” outlined in Section 4 of the proposed veto. These are: (1) “[t]he loss of approximately 8.5 miles (13.7 km) of documented anadromous fish streams”; (2) “[t]he loss of approximately 91.2 miles (146.8 km) of additional streams that support

anadromous fish streams”; (3) “[t]he loss of approximately 2,113 acres (8.6 km²) of wetlands and other waters that support anadromous fish streams”; and (4) “[a]dverse impacts on at least 29 additional miles (46.7 km) of documented anadromous fish streams resulting from greater than 20% changes in average monthly streamflow.” [PD at ES-12.]

None of these findings are—even nominally—tied to the seven shaded “fishery areas” or to any other identified “fisheries.” None elucidate a clear connection between a discharge, a WOTUS, and a fishery, as required. In terms of significance, none are appropriately contextualized.

(...)

Considered alone or collectively, Region 10’s four “unacceptability findings” fail to establish a “rational connection between the facts found and the choice made[.]” as required by the Supreme Court to create a valid determination. [See *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quoting *Burlington Truck Lines v. United States*, 371 U.S. 156, 168 (1962)).] These four findings needed to be especially strong to overcome the Corps’ finding in the FEIS that operations under the proposed mine plan “would not be expected to have a measurable effect on fish numbers or result in long-term changes to the health of the commercial fisheries in Bristol Bay[.]” [FEIS at 4.6-3.] Region 10 does not meaningfully address this finding, much less prove it inaccurate. Notably, EPA was a cooperating agency in the FEIS, and presumably concurred with the conclusions therein.

EPA Response

With respect to the commenter’s contention that EPA “fails to justify the Proposed Prohibition of discharges within the mine site footprint,” because USACE found in the FEIS “that operations under the proposed mine plan ‘would not be expected to have a measurable effect on fish numbers or result in long-term changes to the health of the commercial fisheries in Bristol Bay,” EPA disagrees. The FEIS conclusion cited by the commenter appears to be made at the scale of the Bristol Bay watershed. This conclusion is not relevant to EPA’s findings of unacceptable adverse effects at the scale of the SFK, NFK, and UTC watersheds (see Section 4 and Appendix B of the FD). Each of EPA’s unacceptable adverse effects determinations in Section 4 of the FD is directly tied to the unacceptable adverse effects that certain discharges of dredged or fill material associated with developing the Pebble deposit will have on anadromous fishery areas located within the SFK, NFK, and UTC watersheds as a result of certain levels of aquatic resource loss or changes to streamflow.

EPA does not and need not tie its unacceptability findings to any additional fishery areas elsewhere in the Bristol Bay watershed. To the extent the commenter asserts that EPA’s findings are not tied to the “seven shaded ‘fishery areas’ or to any other identified ‘fisheries,’” see EPA’s response to comment 4.A.1.

EPA did participate as a cooperating agency during the NEPA process and raised significant concerns regarding the proposed project throughout the EIS process (see, for

example, EPA's July 1, 2019 comments on the Section 404 permit public notice (EPA 2019a) and EPA's July 1, 2019 comments on the DEIS (EPA 2019b)). In addition, from March 12, 2020 through May 28, 2020, an interagency team of managers and scientific and technical staff from USACE, EPA, and USFWS met weekly to evaluate the proposed project for compliance with the CWA Section 404(b)(1) Guidelines and discuss concerns. See EPA's response to comment 2.C.6. EPA did not concur with the FEIS and nothing in the record supports the commenter's contention that it did.

With respect to the commenter's contention that the Agency did not address the findings in the FEIS, EPA disagrees. As stated in the PD, EPA appropriately included all portions of the voluminous administrative record for the USACE Pebble Mine permit decision that are relevant to EPA's decision-making and that EPA considered in its decision to issue the PD and FD. See Appendix B of the PD and FD. See also Appendix B (Attachment 1) of the FD, which addresses FEIS conclusions that appear to be inconsistent with the FD. With respect to the commenter's contention that EPA's "findings must be especially strong to overcome the Corps' findings in the FEIS," EPA disagrees. As discussed previously, as described in detail in Appendix B (Attachment 1) of the FD, EPA evaluated the effects of discharges of dredged or fill material associated with mine site development for the Pebble deposit at the scale of the SFK, NFK, and UTC watersheds, which is the spatial and temporal scale most biologically relevant to the species (salmon) and life stages (eggs, juveniles, adults) of concern—that is, the spatial and temporal scales that ultimately determine the reproductive success and long-term persistence of these species and their genetically distinct populations. Moreover, EPA is not constrained by the findings in the USACE administrative record, including the FEIS. EPA should and did rely on the extensive body of scientific and technical information available to the Agency. Courts have found that the legislative history of the CWA validates EPA's broad, independent authority to act under CWA Section 404(c) without the need to accept the findings of USACE. See EPA's response to 2.C.34.

4.B.41 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 20-23)

IV. EPA's Unsupported Assertions of Fishery Impacts Are Not Sufficient to Support Action under Section 404(c)

The Revised Proposed Determination is replete with numerous unsupported assertions that the development of the Pebble Deposit "could" cause unacceptable impacts on fishery areas. But unsupported supposition cannot satisfy Section 404(c)'s requirements. Section 404(c) requires EPA to establish that the discharge of dredged or fill material into waters of the United States will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas." 33 U.S.C. § 1344(c). Thus, EPA has the burden of demonstrating that any discharge "will have" such an adverse effect. *Bersani v. EPA*, 850 F.2d 36, 40 (2d Cir. 1988); see also EPA, Guidelines for Specification of Disposal Sites for Dredged or Fill

Material, 45 Fed. Reg. 85336, 85338 (Dec. 24, 1980) (noting that the EPA Administrator “does have the burden to justify his action” under 404(c)); Section 404(c) Procedures, 44 Fed. Reg. 58076, 58080 (“EPA [has] the responsibility of establishing a basis for any subsequent determination of unacceptable adverse effects” under 404(c)).

Both the text and the legislative history of 404(c) make clear that Congress intended 404(c) to be a limited and constrained authority, with a high burden of proof. For example, the Conference Report explained:

The conferees agree that the Administrator of the Environmental Protection Agency shall have authority to prohibit specification of a site and deny or restrict the use of any site for the disposal of any dredge or fill material which he determines will adversely affect municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.

S. Rep. No. 92-1236, at 142 (1972) (Conf. Rep.), reprinted in 1 Legislative History of the Federal Water Pollution Control Act Amendments of 1972, at 325 (1973) (emphasis added). And the rest of the statute’s legislative history is consistent. House members made clear that “it is expected that disposal site restrictions or prohibitions shall be limited to narrowly defined areas where it can be clearly demonstrated that the discharge of dredged material at such specified location will have an unacceptable adverse effect on critical areas intended to be protected.” 118 Cong. Rec. 33,766 (1972), reprinted in 1 Legislative History of the Federal Water Pollution Control Act Amendments of 1972, at 236 (1973) (House debate) (emphasis added). Thus, EPA cannot meet its burden based on speculation or possibility; it must establish a strong degree of certainty that the effects “will” occur.

Courts have thus uniformly concluded that Section “404(c) provides that the Administrator of EPA may prohibit the specification of a disposal site ‘whenever he determines . . . that the discharge of materials into such area will have an unacceptable adverse effect.’” [A finding of “significant degradation” under the 404(b)(1) guidelines similarly must be based on facts, not conjecture. Section 230.10(c) provides that findings of significant degradation are to be “based upon appropriate factual determinations, evaluations, and tests.” 40 C.F.R. § 230.10(c) (emphasis added). In other words, such a finding must be based on facts and data, not speculation. Yet EPA’s significant degradation finding in the Revised Proposed Determination is also based on a recitation of speculative impacts that “could” occur without any substantiation. See, e.g., Revised Proposed Determination at 4-47 (“extent of stream habitat losses . . . associated with the 2020 Mine Plan suggest that these losses would reduce the overall capacity and productivity of Coho and Chinook salmon in the entire NFK watershed”) (emphasis added). The record does not support a finding of significant degradation or unacceptable adverse effect for any of the factors listed by EPA.] Bersani, 850 F.2d at 40 (quoting 33 U.S.C. § 1344(c)) (emphasis added); see also James City Cnty., Va. v. EPA, 12 F.3d 1330, 1335 (4th Cir. 1993) (“We are presented then with the chore of determining whether EPA has the authority to justify its § 404(c) veto in this case solely on the basis that it would cause unacceptable adverse effects on the environment.”) (emphasis added).

Yet here EPA has ignored the plain language of the statute, the relevant legislative history, and the case law. Instead of demonstrating that the discharges associated with mining the Pebble Deposit will have

an unacceptable adverse effect on fishery areas, EPA proposes to restrict the use of a sizable area of waters in the Bristol Bay watershed “because it has reason to believe that certain discharges of dredged or fill material into waters of the United States within these areas could result in unacceptable adverse effects on fishery areas.” [Id. at 5-1 (emphasis added).] EPA bases its conclusions on a cascading chain of speculation:

The losses of and impacts on salmon habitat could cause the extirpation of unique local populations of Coho, Sockeye, and Chinook salmon that would affect the overall genetic diversity of each species. This reduction in genetic diversity could adversely affect the stability and sustainability of valuable subsistence, commercial, and recreational salmon fisheries. Subsistence harvests and recreational fishing of non-salmon species could also suffer. [Id. at 4-66 (emphasis added).]

As described below in Sections IV-VI, the alleged impacts EPA points to in support of the Revised Proposed Determination are based on speculation, not data. By contrast, the well- documented findings in the FEIS directly contradict EPA’s speculative concerns. The FEIS was developed over several years and in compliance with multiple federal statutes with input from state, tribal, and federal entities – including EPA – and is by far the most comprehensive government study of the Pebble Project. Put simply, it is the record on which a decision on Pebble must be made. In light of the FEIS’s well- documented findings, EPA cannot demonstrate that mining the Pebble Deposit will have unacceptable adverse effects on fishery areas.

Recognizing this, EPA chooses largely to ignore the FEIS’s findings. But EPA cannot disregard the factual findings of the FEIS because its conclusions contradict the Agency’s speculative beliefs. EPA “must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.” *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (internal quotation and citation omitted) (emphasis added). “Conjecture cannot substitute for a reasoned explanation,” *Graphic Comm’ns Int’l. Union, Local 554 v. Salem-Gravure Div. of World Color Press, Inc.*, 843 F.2d 1490, 1494 (D.C. Cir. 1988), nor is “speculation” an adequate “replacement for the agency’s duty to undertake an examination of the relevant data and reasoned analysis,” *Horsehead Res. Dev. Co., Inc. v. Browner*, 16 F.3d 1246, 1269 (D.C. Cir. 1994); see also *Natural Res. Def. Council, Inc. v. EPA*, 859 F.2d 156, 210 (D.C. Cir. 1988) (“EPA offers no more than mere speculation to support its conclusion. These are not adequate grounds upon which to sustain an agency’s action.”); *Tanners’ Council of Am., Inc. v. Train*, 540 F.2d 1188, 1193 (4th Cir. 1976) (“There is no evidence, however, in the record that would reveal the reasonableness of [EPA’s] conclusion. To uphold these regulations, this Court would have to trust completely EPA’s conclusions. The record, however, implies that these conclusions are the product of guesswork and not of reasoned decision-making.”). Indeed, EPA itself concedes that a Section 404(c) determination requires “a reasonable likelihood that unacceptable adverse effects will occur,” not “mere guesswork.” Section 404(c) Procedures, 44 Fed. Reg. 58076, 58078. Yet by ignoring the weight of the FEIS, EPA is engaging in such guesswork.

EPA must thus reckon with the FEIS and either proceed in accordance with its findings or provide a strong factual basis for ignoring it. But in the Revised Proposed Determination, EPA has failed to present any empirical data, scientifically defensible analysis, or cause and effect linkage between the Pebble Project and the predicted downstream fishery impacts—much less a “rational connection.” As discussed in the next section of these comments, EPA’s statements about the importance of the headwaters streams surrounding Pebble to downstream ecosystems are unsupported, and in fact are contradicted by the record compiled by USACE.

In the end, the Revised Proposed Determination does not demonstrate a measurable, data-driven linkage between mineral development at Pebble and unacceptable adverse effects on local or regional fish populations or fisheries. The Agency’s supposition and conjecture are no “substitute for a reasoned explanation.” *Graphic Comm’ns*, 843 F.2d at 1494.

EPA Response

With respect to the commenter’s contention that EPA’s findings in the PD that the discharges evaluated “could” result in unacceptable adverse effects, use of the word “could” was appropriately used in the PD consistent with EPA’s CWA Section 404(c) regulations. See EPA’s responses to comments 4.A.2. and 4.A.3. Similarly, EPA’s findings in the FD are consistent with its regulations for this final stage of the CWA Section 404(c) review process and with CWA Section 404(c). Consistent with CWA Section 404(c), EPA has established a rational and well-supported basis for each of its determinations that the discharges of dredged or fill material evaluated in the FD will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds (see Section 4 of the FD). EPA has revised Sections 4.2.1 through 4.2.5 of the FD to further clarify its findings regarding unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds as a result of discharges of dredged or fill material associated with developing the Pebble deposit. Based on EPA’s findings, the FD prohibits the specification of and restricts the use for specification of certain waters in the SFK, NFK, and UTC watersheds as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. See Section 5 of the FD and EPA’s response to comment 5.B.32.

With respect to the commenter’s contentions regarding the USACE FEIS, information and analysis in the FEIS and ROD support EPA’s findings in the FD and EPA extensively cited both documents in the PD¹⁶ and FD. Attachment 1 of Appendix B in the FD addresses FEIS conclusions that appear to be inconsistent with the FD. See also EPA’s response to comment 4.C.1 regarding differences in analysis scales between the FEIS and the FD.

With respect to the commenter’s assertion that “[b]oth the text and the legislative history of 404(c) make clear that Congress intended 404(c) to be a limited and constrained

¹⁶ The substance of the commenter’s contentions was also addressed in Appendix B of the PD.

authority, with a high burden of proof,” EPA disagrees. See EPA’s response to comment 2.C.21.

4.B.42 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 23-26)

V. EPA Has Failed to Demonstrate Impacts on Fisheries Sufficient to Support the Revised Proposed Determination

In Section 4 of the Revised Proposed Determination, EPA lists four bases for taking action under 404(c):

*Adverse Effects of Loss of Anadromous Fish Streams;

*Adverse Effects of Loss of Additional Streams that Support Anadromous Fish Streams;

*Adverse Effects of Loss of Wetlands and Other Waters that Support Anadromous Fish Streams; and

*Adverse Effects from Changes in Streamflow in Downstream Anadromous Fish Streams. [EPA alleges the same adverse effects under Sections 4.2 (Effects on Fishery Area) and 4.3.1 (Significant Degradation under 404(b)(1) Guidelines) of the Revised Proposed Determination, so PLP provides a combined response to both sections here.]

But the alleged adverse effects listed under each of these topics are based on speculation, not science. [A fuller discussion of the defects in EPA’s Proposed Determination is attached. See Ex. 2, Kleinschmidt Group, Comments on EPA’s Proposed Determination on the Pebble Deposit Area, May 2022 (September 2022).] In addition, while EPA asserts that each factor is an independent basis for action under 404(c), the four factors are interrelated and are, in fact, based on the same chain of speculation. For example, the invalidation of the findings on anadromous streams would call into question the validity of the determinations regarding other streams and wetlands. And EPA’s faulty assumptions on streamflow also undermine EPA’s alleged findings regarding stream and wetland impacts. Thus, as one factor fails, they all do. [Confusingly, EPA states that the Revised Proposed Determination is not based on any future mine expansion or cumulative impacts, but then reviews the cumulative impacts of the Expanded Mine Scenario anyway. See Revised Proposed Determination at 4-53 (“The Expanded Mine Scenario . . . is not a basis for this proposed determination. . . . However, the Guidelines also require EPA Region 10 to evaluate cumulative effects.”). Since EPA explicitly states that the cumulative impacts of the Expanded Mine Scenario are not a basis for the Revised Proposed Determination, we will not spend much time commenting on that section. However, we note that the expanded mine scenario was considered in the FEIS for the project, and even with the cumulative impacts of the expansion included, USACE concluded: “Overall, the contribution of Alternative 1a to cumulative effects to aquatic resources, when taking other past, present, and RFFAs into account, would be minor to moderate in terms of magnitude, duration, and extent, given the documented habitat use by fish, existing habitat potential, and permit requirements regarding fish and aquatic habitat protection at stream crossing.” FEIS at 4.24-70. EPA has provided no basis for a contrary finding regarding the cumulative impacts to fish from the Expanded Mine Scenario. Moreover, EPA fails to account for the fact that mining technology is constantly evolving, so a mining

plan submitted decades from now will necessarily incorporate technological advances that will further mitigate the impacts of a larger mine.]

As explained more fully below, all four bases are directly contradicted by the findings in the FEIS. EPA attempts to cast the FEIS findings aside, asserting “there is no reason to expect” that the baseline data relied upon in the FEIS “fully capture how much these factors vary over longer time scales and more finely resolved spatial scales, which means that FEIS conclusions ...based on these data should be viewed as minimum estimates.” [Revised Proposed Determination at B-8 (emphasis added).] But, other than speculating that this data may not “fully capture” certain factors, EPA does not provide contrary data to demonstrate the FEIS data is under-representative. Instead, EPA simply chooses to assume that the baseline data may not fully capture impacts.

Based on this supposition, EPA then proclaims that there was insufficient data to “adequately support the FEIS conclusions about impacts to fishes.” [Id.] But EPA admits that PLP’s data “presents results of the most extensive fish-sampling regime that currently has been conducted in the South Fork Koktuli (“SFK”), North Fork Koktuli (“NFK”), and Upper Talarik Creek (“UTC”) watersheds.” [Id. at B-5.] Moreover, EPA acknowledges that the existing data undercounts available streams and wetlands because PLP’s subsequent high-resolution mapping has increased the identification of wetlands and streams in the area surveyed. [Id. at 3-8.] This means that there is even more habitat available for fish than existing mapping shows, reducing the potential impact of the project in terms of percentage of potential habitat lost.

Thus, contrary to EPA’s supposition, the FEIS actually undercounts existing waterbodies and therefore overstates the percentage of wetlands and streams impacted by the project. [In fact, the FEIS acknowledges that watershed mapping gaps likely mean that water resources in the area are likely underestimated. See e.g., FEIS at 4.22-20 (“the area of wetlands and other waters presented for the UTC watershed is likely underestimated”), 4.22-21 (“Although NWI mapping covers the entirety of the Cook Inlet and Stariski Creek-Frontal Cook Inlet watersheds, coverage for the remaining six watersheds averages 53 percent, with a range of 6 percent to 95 percent. Therefore, the areas of wetlands and other waters presented for these watersheds are likely underestimated.”), 4.22-22 (“Impacts to special aquatic sites and regionally important wetlands are calculated to represent 1 percent of waters and wetlands mapped in the Gibraltar Lake watershed; however, because only 6 percent of the Gibraltar Lake watershed has been mapped by NWI, the representation of impacts on the watershed scale is likely overestimated.”).] For example, the FEIS relies on National Wetlands Inventory (“NWI”) mapping to establish the total wetlands/other waters acreage in the Headwaters Koktuli (“HK”) watershed. NWI data for the HK watershed is not a reliable data source for detailed analyses, and is typically used only when no other data source is available. The FEIS determined that 2,158 acres of wetlands/other waters would be directly, permanently impacted in the HK watershed. [See id. at 4.22-25 (Table 4.22-3). PLP used the same value in its calculations.] The FEIS applied this value against the total NWI reported acreage in the watershed (36,458) and found that direct, permanent impacts to wetlands/other waters within the HK Hydrologic Unit Code (“HUC”) 10 watershed amount to 6% of that watershed.

But this reported acreage is now out of date. In preparing the November 2020 CMP, PLP collected highly detailed wetlands mapping for the HK watershed. Prior to the FEIS, wetlands mapping covering 87% of the HK watershed was provided to USACE. With the final CMP, PLP submitted detailed wetlands data for nearly all of the remaining portion of the HK. In total, PLP has provided detailed mapping for 99.7% of the full watershed. [The remaining 0.3% results from discrepancies in the watershed boundaries used for analysis.] This data shows 44,625 wetland/water acres in the HK (44,702 with NWI gaps), as compared to the NWI estimate of 36,458 acres. Thus, the prevalence of wetlands/waters is 23% higher than reported in the NWI.

The more accurate percentage of the HK watershed impacted is 4.8%. [This table shows the calculations for the HK watershed assuming 2,158 acres directly impacted: [Table included here in original footnote: "Best Available Data for wetlands in the HK Watershed."]] Thus, the FEIS actually overstates the impact as a percentage of the entire watershed because it fails to use best available data. And, critically, EPA's supposition that FEIS conclusions on impacts to fish "should be viewed as minimum estimates" is therefore baseless and contrary to the most up to date data.

Such assumptions permeate the Revised Proposed Determination. EPA lists a range of factors that can impact the value of fish habitat, but notes that "because these considerations are impossible to predict with precision, a precautionary approach that maintains habitat structure and function is warranted." [Revised Proposed Determination at B-5.] EPA does not have authority to set aside 309 square miles of state- owned land based on "precaution." If the actual aquatic resource impacts cannot be adequately assessed based on the current data set, EPA must generate new data that demonstrates actual adverse impacts to fisheries before any 404(c) action can be pursued. Otherwise EPA is simply repeating the error it accuses USACE of – relying on data inadequate to support "conclusions about impacts to fishes." [Id. at B-8.]

EPA Response

EPA disagrees that the findings in the FD are "based on speculation, and not science." EPA reviewed the attachment provided by the commenter (Kleinschmidt Group 2022). Nothing in the attachment resulted in a change to EPA's determination that the discharges of dredged or fill material evaluated in the FD will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. This is because this attachment did not provide information adequate to explain why the large-scale losses of and damage to streams, wetlands, and other aquatic resources described in this FD would not result in significant adverse effects on the fish populations who rely on them. EPA's specific responses to the issues raised in this attachment are provided in EPA's responses to comments 4.B.44, 4.B.45, 4.C.7, 4.D.2, and 4.F.6. As a result of its review of this attachment submitted by the commenter, EPA made revisions to Sections 3 and 4 and Appendix B of the FD. These revisions include clarifications in Section 3 explaining why this section includes information and analysis presented at a variety of scales, clarifications in Section 4 regarding the scale at which EPA evaluated unacceptable

adverse effects on fishery areas in the FD, and clarifications in Section 4 regarding values reported in the FEIS and FD that describe the percentage of aquatic resource loss at a given watershed scale.

The commenter contends that “the four factors” EPA uses to make independent unacceptable adverse effects determinations are not independent because the factors are “interrelated.” While the commenter asserts that these factors are interrelated, it does not explain what it means by this nor provide a technical explanation to support it. Rather, it states a conclusion, without support that invalidation of the “findings on anadromous streams would call into question the validity of the determinations regarding other streams and wetlands.” Therefore, this comment does not provide a reasoned or supported rationale for why EPA’s approach is “faulty.” In addition to lack of explanation or support, EPA disagrees as a technical matter because each of EPA’s unacceptable adverse effects determinations is based on the adverse effects associated with a significant and permanent loss of or damage to ecologically valuable aquatic resources. EPA evaluated these independently and determined that each, on its own, would result in unacceptable adverse effects on anadromous fishery areas.

Section 4.2 of the FD makes clear that EPA’s FD is based on the adverse effects from (1) the loss of approximately 8.5 miles of documented anadromous fish streams, (2) the loss of approximately 91 miles of additional streams that support anadromous fish streams, (3) the loss of approximately 2,108 acres of wetlands and other waters that support anadromous fish streams, and (4) the adverse impacts on approximately 29 additional miles of documented anadromous fish streams resulting from greater than 20 percent changes in average monthly streamflow. EPA’s CWA Section 404(c) regulations at 40 CFR 231.2(e) provide that in evaluating the “unacceptability” of effects, consideration should be given to the “relevant portions of the CWA Section 404(b)(1) Guidelines.” Accordingly, EPA evaluated compliance with relevant portions of the Guidelines. As detailed in Section 4.3 of the FD, evaluation of compliance with relevant portions of the Guidelines supports and confirms EPA’s determination that discharges of dredged or fill material for the construction and routine operation of the 2020 Mine Plan will have unacceptable adverse effects on anadromous fishery areas (Section 4.3.1.2). With respect to the quote cited by the commenter from the FEIS related to its conclusion that “cumulative effects would be minor to moderate...,” Attachment 1 of Appendix B in the FD explains why this FEIS conclusion does not contradict the FD.

Information and analysis in the FEIS and ROD support EPA’s findings in the FD, and both documents are cited extensively by the FD. Attachment 1 of Appendix B in the FD addresses FEIS conclusions that appear to be inconsistent with the FD. The commenter identified a number of points regarding information presented in the FEIS and how EPA used that information in the PD. Appendix B has been revised to address the points the commenter found confusing. Appendix B of the FD addresses issues related to two key

points: (1) in many cases, the FEIS states that impacts would not result in significant adverse effects on aquatic resources, and those conclusions often are not supported by the evidence provided in the FEIS; and (2) the impacts reported in the FEIS likely underestimate or underpredict the actual impacts that the 2020 Mine Plan would have on aquatic resources in the SFK, NFK, and UTC watersheds. See also EPA's responses to comments 4.B.4, 4.C.1, and 5.B.32.

The commenter identified that the estimate in the FEIS for the percent of wetlands and other waters that would be lost in the headwaters of the Kaktuli watershed (which is referred to as "HK" and includes the SFK, NFK, and Middle Kaktuli River HUC-12 watersheds) as a result of the 2020 Mine Plan has been updated since issuance of the FEIS in July 2020. The updates were a product of additional analysis associated with PLP's compensatory mitigation plan submitted to USACE in November 2020. While the PD utilized the value reported in the FEIS (6 percent), EPA incorporated the updated estimate (4.8 percent) into Section 4 of the FD. This represents a modest change and one that is not central to EPA's findings which are not based on the larger HK watershed, so this updated estimate did not alter EPA's findings. EPA included this figure of relative loss at the larger HK watershed level in Section 4 of the FD for completeness but as discussed throughout the document, the larger watershed scale that includes the Middle Kaktuli River is not the appropriate scale for this type of evaluation. Because the unacceptable adverse effects findings in Sections 4.2.1 through 4.2.3 of the FD are based on absolute amounts of stream, wetland, and other aquatic resource losses within the SFK, NFK, and UTC watersheds, the relative magnitude of these losses at larger watershed scales is not relevant to this CWA Section 404(c) action (see also EPA's response to comment 4.C.7). The commenter also raised concerns regarding language in Appendix B of the PD that refers to a "precautionary approach." The commenter took this text from Appendix B of the PD out of context; this text was revised in Appendix B of the FD to provide additional clarity.

To the extent the commenter contends that "EPA fails to account for the fact that mining technology is constantly evolving, so a mining plan submitted decades from now will necessarily incorporate technological advances that will further mitigate the impacts of a larger mine," EPA disagrees. EPA's FD only applies to discharges of dredged or fill material associated with developing the Pebble deposit that will result in certain levels of aquatic resource loss or changes to streamflow. Section 4 of the FD acknowledges that development of a mine at the Pebble deposit is expected to require the discharge of dredged or fill material into waters of the United States due to current mining technology and the high density of water resources around the Pebble deposit. EPA will consider all information that a future project proponent submits to EPA in seeking an applicability determination, including new technology. Also, Section 5 of the FD makes clear that "[p]roposals to discharge dredged or fill material into waters of the United States

associated with mining the Pebble deposit that are not subject to [the FD] remain subject to all statutory and regulatory authorities and requirements under CWA Section 404.”

4.B.43 The Pebble Limited Partnership (Doc. #2664-1, Public Hearing Transcript p. 3)

EPA claims that there are hundreds of genetically distinct salmon populations and disrupting even one of them can have a near significant adverse impact on the total Bristol Bay fishery. This assumption defies logic that it's virtually certain that some of the hundreds of distinct populations have been harmed if not destroyed by natural events, such as an Novarupta and even the commercial fishing.

EPA Response

EPA's findings of unacceptable adverse effects are made at the scale of the SFK, NFK, and UTC watersheds, not at the scale of the Bristol Bay watershed. Revisions have been made to the FD to ensure that it is clear that EPA has not made an unacceptable adverse effects determination at larger scales.

4.B.44 The Pebble Limited Partnership (PLP) (Doc. #1912, Exhibit 2, p. 5)

The basis for EPA's Proposed Determination for the Pebble Deposit Area largely rests on the purported impacts to fishery areas from the construction and operation of the 2020 mine plan. The analysis presented by EPA, however, raises significant questions about the methodologies used as well as selective use and interpretation of data. From an ecological and conservation perspective, EPA's analysis lacks commonsense consideration of recent conservation theory given the current understanding of the ecology and behavior of Coho and Chinook salmon.

For example, EPA incorrectly posits an unlikely and unquantified salmon mortality event (occurring at the time of construction) that would, by unexplained extrapolation, result in the loss of an entire genetically distinct local population, reduction in the biocomplexity of the North Fork Kaktuli River, and risk the stability of the population throughout the Nushagak system. To reach this conclusion, EPA must ignore the well-understood evolutionary biology of Pacific salmon, which enables them to seek out other nearby spawning and rearing habitats when displaced from their natal streams (see Section 1.0).

Perhaps more concerning is EPA's willingness to incorrectly use data in support of inaccurate comparisons that present project impacts in a skewed context (see Section 2.0). Likewise and without explanation, EPA selectively ignored project-specific data in favor of generalized information gathered from lower 48 states and European sources to support its preferred flow change threshold (see Section 3.0). In both instances, EPA's conclusions do not hold up to scrutiny when impacts are placed in the proper context or more relevant data and modeling are substituted for generic information. These flaws reveal an analysis that does not meet accepted practices and seriously undercuts EPA's rationale behind the Proposed Determination.

The comments we provide below are derived from an application of general knowledge of salmon ecology and behavior in combination with extensive data on existing habitat in the Kuktuli River system and the larger Nushagak River basin. Our comments address Section 4 – Basis for the Proposed Determinations and present more likely future scenarios based on our existing knowledge and information provided in the Final EIS for the Pebble Project (USACE 2020).

EPA Response

Comments above are from the Overview section of Doc. #1912, Exhibit 2 (Kleinschmidt Associates 2022), which summarizes comments presented in more detail later in Exhibit 2. See the following comments for detailed responses to the specific topics mentioned in this Exhibit 2 Overview section: 4.B.45, 4.C.1, and 4.D.2 (issues related to spatial scale); 4.C.7 (issues related to fish mortality and displacement); and 4.F.6 (issues related to streamflow effects).

4.B.45 The Pebble Limited Partnership (PLP) (Doc. #1912, Exhibit 2, p. 20-25)

The Existing Condition Section of the Proposed Determination addresses the entirety of the Nushagak River Basin. It also includes the Upper Talarik Creek (UTC) as part of the Kvichak River, although there are no direct impacts to that basin, and references the larger Bristol Bay watershed. In characterizing an existing condition that extends far beyond the Project Area and area of impact, the EPA characterizes the high value of the entire larger Nushagak watershed for anadromous fisheries and habitat. It also provides evidence for the importance of habitat and biodiversity to sustain these highly valued fisheries. Further, there is no reasonable purpose to include the UTC and the Kvichak River system in the Proposed Determination, except to confuse the reader as to the area of potential impacts. By including the Kvichak River, which is highly valued for its contribution to the Sockeye Salmon fishery in Bristol Bay, EPA is misleading the public into thinking that the proposed action may somehow affect this highly valued fishery. This is not scientifically based and simply a mischaracterization of likely impacts that should not be allowed.

Later when describing their basis for the Proposed Determination, EPA focuses on the proportional impact of these two NFK tributaries to the Kuktuli River system but never circles back to provide necessary context of the tributary loss with respect to the larger watersheds that support the world class salmon fisheries. Providing that context of scale is necessary because of the much higher value fishery within the Nushagak River as compared to the Kuktuli River.

As described in Box 4-2 of the Proposed Determination, the scale of mapping is inconsistent between the NHD and the potentially impacted tributaries. Accordingly many of the lower order tributaries have not yet been mapped within the Kuktuli, Mulchatna, and Nushagak rivers circumventing a direct, apples-to-apples evaluation of impacted tributaries versus intact similar tributaries remaining in these basin. However, it is possible to use the NHD to demonstrate the relative scale of the impact within these larger

basins (Figure 1, Figure 2, and Figure 3), and to describe the likely relative impact on habitat diversity within these larger basins.

The loss of NK 1.190 and 1.200 represents the loss of 10% of the number of 2nd to 4th order tributaries in the NFK (Table 3) and a 4% loss of that category of tributaries for the Kuktuli River watershed. However, the Kuktuli River is just one of six anadromous tributaries to the Mulchatna River and is of similar size to at least three of those tributaries – the Stuyahok, Chilikadrotna, and Chilchitna rivers. The Mulchatna River is the largest of 11 tributaries to the Nushagak River.

Both of the anadromous tributaries that would be impacted are contained within one of four HUC12 subwatersheds (subwatersheds) delineated in the Kuktuli River headwaters, and one of 12 subwatersheds within the Kuktuli River, all of which have been documented as supporting anadromous salmon. The Mulchatna River is composed of 108 subwatersheds of which 101 support anadromous salmon and the Nushagak River is composed of 332 subwatersheds, 286 of which support anadromous salmon (Figure 4).

Given the complex network of tributary habitat within the Kuktuli, Mulchatna and Nushagak watersheds (Figure 1, Figure 2, and Figure 3) and the hundreds of subwatersheds documented as supporting anadromous salmon (Figure 4), it is difficult to envision how the loss of 8.5 miles of habitat that supports a few dozen Coho and Chinook salmon would result in a measurable loss of habitat complexity or biocomplexity at a watershed scale.

[Figure 1: Scale of potential impact to anadromous streams in the context of the available hydrography for the Kuktuli River Basin included in submission here]

[Figure 2: Scale of potential impact to anadromous streams in the context of the available hydrography for the Mulchatna River Basin included in submission here]

[Figure 3: Scale of potential impact to anadromous streams in the context of the available hydrography for the Nushagak River Basin included in submission here]

[Figure 4: Documented Anadromous Subwatersheds in the Nushagak River Basin included in submission here]

EPA Response

The defined area for restriction, within which EPA’s restriction applies to waters of the United States, is described in Section 5 of the FD and includes certain waters within the SFK, NFK, and UTC watersheds. Consistent with CWA Section 404(c), each of EPA’s determinations of unacceptable adverse effects is based on the significance of the adverse effects that certain discharges of dredged or fill material associated with developing the Pebble deposit will have on anadromous fishery areas in those watersheds. See EPA’s response to 5.B.19 regarding the watershed scales considered in the FD.

Because the unacceptable adverse effects findings in Sections 4.2.1 through 4.2.3 of the FD are based on absolute amounts of stream, wetland, and other aquatic resource losses within the SFK, NFK, and UTC watersheds, the relative magnitude of these losses at larger watershed scales is not relevant to this CWA Section 404(c) action (see also EPA's response to comment 4.C.7). The 2020 Mine Plan would result in the permanent loss of 8.5 miles of anadromous fish streams, 91 miles of additional streams that support anadromous fish streams, and 2,108 acres of wetlands and other waters in the SFK and NFK watersheds, and Section 4.2 of the FD explains why these levels of loss will result in unacceptable adverse effects in these watersheds (see Appendix B for additional discussion of spatial and temporal scale issues).

Section 3 of the FD discusses the high value of the Nushagak River and Kvichak River watersheds, as well as, in some instances the Bristol Bay watershed because these watersheds support productive and relatively stable fisheries for multiple species of Pacific salmon. Although, as explained previously, EPA made its unacceptable adverse effects determinations at the scale of the SFK, NFK, and UTC watersheds because that was the most appropriate scale for the analysis in the FD (see Sections 3 and 4.2 of the FD as well as Attachment 1 of Appendix B of the FD), EPA provided evidence, as noted by the commenter, of "the importance of habitat and biodiversity to sustain the highly valued fisheries" of the Nushagak and Kvichak Rivers and larger Bristol Bay watershed. As discussed in the FD, habitats across the SFK, NFK, and UTC watersheds play a crucial role in supporting and stabilizing productive salmon populations in these watersheds. Thus, they are an integral component in maintaining the integrity, productivity, and sustainability of the Bristol Bay watershed's fishery resources over time.

EPA has revised Section 3 of the FD to more clearly explain why it discusses information at larger spatial scales. The unacceptable adverse effects findings are only based on adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds, as is clearly and repeatedly stated throughout the FD. With respect to commenter's contention that "there is no reasonable purpose to include the UTC . . . in the Proposed Determination, except to confuse the reader as to the area of potential impacts," EPA disagrees. As explained in Section 4 of the FD, the 2020 Mine Plan represents only one configuration of a potential mine at the Pebble deposit, and any relocation of mine site components to other areas would result in discharges of dredged or fill material to water resources within and beyond the mine site area delineated in the 2020 Mine Plan (Figure 4-1). EPA evaluated the adverse effects of discharges of dredged or fill material associated with development of the Pebble deposit on anadromous fishery areas in the SFK, NFK, and UTC watersheds. EPA has evaluated these adverse effects at the scale of the SFK, NFK, and UTC watersheds because these watersheds are the areas that would be most directly affected by certain discharges of dredged or fill material associated with the development of a mine at the Pebble deposit and because the most extensive physical,

chemical, and biological data currently available have been collected in these watersheds (e.g., PLP 2011, PLP 2018a, USACE 2020a). Based on its evaluation, EPA determined that certain discharges of dredged or fill material associated with future proposals to construct and operate a mine to develop the Pebble deposit will have unacceptable adverse effects on anadromous fishery areas (including spawning and breeding areas) anywhere in the SFK, NFK, and UTC watersheds if the adverse effects of such discharges are similar or greater in nature and magnitude to the adverse effects of the 2020 Mine Plan (see Section 4 and 5 of the FD). EPA's discussion of the UTC watershed is therefore appropriate and highly relevant.

With respect to the commenter's claims that only "a few dozen Chinook and Coho salmon" would be affected by these levels of losses in the SFK, NFK, and UTC watersheds, EPA disagrees. Appendix B discusses why the fish distribution and abundance data presented in the FEIS likely represent an underestimate of fish densities in the habitats that would be lost (see Sections B.1.2 and B.2.2). For example, in the FEIS, estimates of juvenile salmon densities in the affected tributaries are presented for only 1 year, despite the spatial and temporal variability these fish populations display. Even based on these underestimates, Table 3-8 of the FD and Table 3.24-10 of the FEIS indicate that hundreds, and in some cases thousands, of adult and juvenile Pacific salmon have been observed in the relevant tributary habitats. In addition, the commenter's claim ignores the fact that stream and wetland losses associated with the 2020 Mine Plan also would degrade downstream mainstem habitats, which currently support even higher numbers of Pacific salmon.

4.B.46 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 10)

Given shortcomings of methods and efforts to characterize and quantify fish distribution and habitat, the PD underestimates habitat losses that would result from mine construction and operation.

EPA Response

As discussed in the Executive Summary and Appendix B of the FD, there are a variety of reasons that habitat losses that would result from mine construction and operation may not have been fully accounted for in the analysis.

4.B.47 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 17)

p. 3-8: "It is important to note that the characterization of aquatic habitat area is limited by resolution of the available NWI data, which tend to underestimate their extents...high- resolution mapping identifies approximately 400 percent more stream miles than the NHD and approximately 40 percent more wetland acres than the NWI (USFWS 2021) in this area..."

Comment: This fact is crucial to highlighting that impacts from mining are greatly underestimated in the PD.

EPA Response

The FD recognizes that where lower resolution mapping products were utilized, the extent of aquatic resources is likely underrepresented (see Box 4-3 in the FD).

4.B.48 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 17)

Pg. 3-19: "Fish populations across the Bristol Bay watershed have not been sampled comprehensively; thus, estimates of total distribution and abundance across the region are not available."

Comment: This raises important point indicating that potential impacts of mining are underestimated in the PD.

EPA Response

See Appendix B (Sections B.1 and B.2) for discussion of these issues. Also see EPA's responses to comments 4.B.46 and 4.B.47.

4.B.49 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (BBFA) (Doc. #0830, p. 13-22)

D. Any current or future owner of the mineral interests at the Pebble deposit can revise the 2020 Mine Plan to evade the limits of the 2022 PD.

If the 2022 PD were to be final, its utility in protecting anadromous waters from unacceptable adverse effects will be undermined by how easily the 2020 Mine Plan can be revised to escape the permissive limits of the 2022 PD. Any current or future owner of the mineral rights at the Pebble deposit can (1) revise the 2020 Mine Plan to evade the limits in the 2022 PD that are based on PLP's previously denied 2020 Mine Plan, (2) submit a revised permit application under a future, presumably more sympathetic, federal administration, and (3) seek a permit.

1. Maps, charts, and text by PLP and EPA provide the background against which a current or future owner of the mineral rights at the Pebble deposit would seek to revise the 2020 Mine Plan.

The following map depicts PLP's 2020 Mine Plan. PLP will probably focus first on the bulk tailings storage facility (TSF), which is in the North Fork Kaktuli River drainage. Subsequent maps show that the bulk TSF causes substantial harm, and that relocating it may be central to any future effort to revise the mine plan to avoid triggering the limits of the 2022 PD.

[Mine Site Map from PLP's June 8, 2020 Clean Water Act Section 404 Permit Application included in submission here]

The next map depicts (1) the defined area where EPA's 2022 PD would restrict discharges of dredged or fill material associated with any future mine plans for the Pebble deposit if the adverse effects are similar or greater in nature and magnitude to those of the 2020 Mine Plan, and (2) the footprint of the 2020 Mine Plan as the defined area for which the 2022 PD would prohibit such discharges associated with the 2020 Mine Plan. Equally important, this map also depicts wetlands in relation to the foregoing defined areas. The map shows that the bulk TSF destroys by far the most wetlands. The map also shows that far fewer wetlands in the South Fork Koktuli River drainage south of the bulk TSF and proximate to the Pebble deposit.

[The Defined Area for Restriction and the Defined Area for Prohibition Overlain on Wetlands included in submission here]

In the 2020 Mine Plan, the bulk TSF is a major source of (1) loss of miles of anadromous streams, (2) loss of miles of tributaries to anadromous streams, (3) loss of acres of wetlands, lakes and ponds that contribute to anadromous streams, and (4) anadromous stream miles adversely affected by greater than 20 percent change in average monthly streamflow. The following map from the 2022 PD at page 4-19 shows that the bulk TSF, more than any other facility in the 2020 Mine Plan, causes more (1) loss of miles of anadromous streams, (2) loss of miles of tributaries to anadromous streams, and (3) loss of acres of wetlands, lakes and ponds that contribute to anadromous streams.

[Streams, Wetlands, and Ponds Lost Under the Pebble 2020 Mine Plan included in submission here]

The following map from the 2022 PD depicts anadromous stream miles that would be adversely affected by greater than 20 percent change in average monthly stream:flow, which would have been caused by the 2020 Mine Plan.[2022 PD at page 4-34 (misnumbered as page 4-19).] Most of the stream miles adversely affected would be in the North Fork Koktuli River drainage.

[Streams and Rivers with Documented Salmon Use that Would Experience Streamflow Alterations Greater than 20 Percent of Baseline Average Monthly Streamflows As a Result of the Pebble 2020 Mine Plan included in submission here]

The following chart from the 2022 PD states the number of miles of anadromous streams adversely affected by greater than 20 percent change in average monthly streamflow, which would have been caused by the 2020 Mine Plan.[2022 PD at page 4-35.]

[Summary Table of Salmon Species Documented to Occur in Downstream Reaches that Would Experience Greater than 20 Percent Streamflow Alterations Under the Pebble 2020 Mine Plan included in submission here]

The following excerpts from the 2022 PD at 4-30 - 4-33 describe the alteration of average monthly streamflow.

During operation, two WTPs [water treatment plants] would treat water collected within the mine site footprint prior to its release to the environment (Figure 4-1). WTP #1 would treat surplus groundwater and surface water runoff collected in the open pit and the surrounding areas. WTP #2 would collect and

treat water from the main WMP, which would receive water from the TSFs and the TSF main embankment seepage. Treated water from the WTPs would be routed to three outfall locations and then discharged into the SFK, NFK, and UTC.⁵⁴ In an average year, mean monthly discharges to the SFK, NFK, and UTC would vary between 1.3 to 10 cubic feet per second (cfs), 17 to 27 cfs, and 0.2 to 1.4 cfs, respectively (Knight Piesold 2019a: Table 2).

Although operations would change the availability of surface flows to area streams, surplus-treated water would be released from the mine site in an effort to benefit priority fish species and life stages (USACE 2020a: Section 4.24). Monthly habitat flow needs were identified for each month of the year in the SFK, NFK, and UTC based on priority species and life stages. In the SFK and NFK, the priority species used to determine habitat flow needs were Chinook Salmon, Coho Salmon, Rainbow Trout, and Arctic Grayling; these same species were used to determine habitat flow needs in UTC, except Sockeye Salmon replaced Chinook Salmon. In terms of life stage priorities for flow optimization, the spawning life stage was given a higher priority than juvenile rearing (PLP 2018b: RFI 048).

The FEIS [final environmental impact statement] indicates water from both WTPs would be strategically discharged, based on modeling and monitoring during discharge. However, the only monitoring proposed by PLP appears to be quarterly streamflow and fish presence surveys (PLP 2019b: RFI 135). [Footnote omitted] WTP discharges would, therefore, be preplanned based on modeling and a set of assumptions. Monthly WTP discharges would be the amount needed to "optimize" downstream habitat assuming the historic monthly average streamflow (i.e., given an "average climatic year," or 50 percent exceedance probability) was to occur at the representative downstream gage location.

EPA Region 10 has concerns with the methods used to establish the ecosystem flow requirements and predict impacts on downstream anadromous fish habitat as presented in the FEIS (Appendix B: Sections B.3 and B.4). However, as described previously, the streamflow impact information provided in the FEIS provides a reasonable minimum approximation of impacts and the best available information for this project

* * *

Based on information presented in the FEIS, EPA Region 10 has estimated that operation of the 2020 Mine Plan with the addition of treated water would alter (i.e., either increase or decrease) streamflows by more than 20 percent of baseline average monthly flow in at least 29 miles (46.7 km) of anadromous fish streams downstream of the mine site (Figure 4-9, Table 4-5). [Footnote omitted] These streamflow alterations are derived from Table 4-4 (USACE 2020a: Table 4.16-3), which presents changes in average monthly streamflow that would result after the discharge of treated water from the WTPs. These streamflow changes would affect 18.7 miles (30.1 km) or 29 percent of anadromous fish streams in the NFK watershed and approximately 10.4 miles (16.7 km) or 17 percent of anadromous fish streams in the SFK watershed (Giefer and Blossom 2021) (Figure 4-9).

In the majority of the SFK and NFK, streamflow alterations would vary seasonally. Reaches that would experience streamflow reductions between the spring and the winter would also experience streamflow

increases between the winter and spring. In total, streamflow reductions exceeding 20 percent of average monthly streamflow would occur in at least one month per year in at least 13.1 miles (21.4 km) of anadromous fish streams downstream of the mine site, specifically in NFK Reach C, Tributaries NFK 1.190 and 1.200, and SFK above Frying Pan Lake (i.e., upstream of SK100G) (Table 4-5). Additionally, operation of the 2020 Mine Plan would increase streamflow by more than 20 percent of baseline average monthly streamflow in at least 25.7 miles (41.3 km) of downstream anadromous fish streams due to WTP discharges (Table 4-5). The majority of streamflow increases would occur in the mainstem NFK, where at least 18.1 miles (29.1 km) would experience seasonal streamflow increases of more than 20 percent of baseline average monthly flow. The remaining 7.6 miles (12.2 km) of anadromous fish streams that would experience streamflow increases of more than 20 percent from baseline average monthly flows are located in the SFK watershed, in the mainstem at Frying Pan Lake and in Tributary SFK 1.240.

It helps to summarize the key points from the above text. Here is our summary:

(1) most of the adverse impacts to streamflow of anadromous streams, occurring as either decreases in streamflow or as increases in streamflow due to outputs of waste water treatment plants, are in the North Fork Koktuli watershed, not the South Fork Koktuli watershed;

(2) most of the adverse impacts arise from increases in streamflow due to output of waste water treatment plants, not decreases in streamflow; and

(3) EPA Region 10 has concerns with the methods used to establish the ecosystem flow requirements and predict impacts on downstream anadromous fish habitat as presented in the FEIS, and EPA has concerns about the modeling of streamflow and the monitoring schedule.

2. A current or future owner of mineral rights at the Pebble deposit could revise the 2020 Mine Plan to escape the limits of the 2022 PD in at least three ways.

a. First, any current or future owner of the mineral interests will probably try to improving the modeling of streamflow and monitoring, both of which have been matters of concern to EPA.

Because EPA Region 10 has expressed concerns about (1) the methods used to establish the ecosystem flow requirements and predict impacts on downstream anadromous fish habitat as presented in the FEIS, and (2) the modeling of streamflow and the monitoring schedule, those concerns may be the first target for revising the 2020 Mine Plan or preparing a new mine plan to get under the limits of the 2022 PD. It might be efficient, from the perspective of a mine owner/operator, to improve the modeling of streamflow, and the monitoring, so that the operators of a Pebble mine can discharge water from the waste water treatment plants in a manner that keeps the number of miles of anadromous streams adversely affected by greater than 20 percent change in average monthly streamflow below 29 miles.

b. Second, any current or future owner of the mineral interests can evade the limits of the 2022 PD by moving the bulk tailings storage facility outside the defined area where the limits apply.

The next map depicts 26 options PLP considered for locating and configuring a bulk TSF, as identified by PLP in its response to a "Request for Information" (RFI) 098 during the Corps' permitting process regarding the 2020 Mine Plan.

[Map of 26 Options PLP Considered for Locating and Configuring a Bulk TSF included in submission here]

TSF options No. 4 (to the north), No. 25 (to the northwest), and No. 26 (to the northeast) are outside the defined area where the limits of the 2022 PD would apply to future plans to mine the Pebble deposit. Any current or future owner of the mineral interests at the Pebble deposit could revise the 2020 Mine Plan by relocating the bulk TSF to the sites of those options, or anywhere else outside the defined area. Doing so could avoid triggering the limits and restrictions under the 2022 PD and could lead to a discharge permit necessary to build a Pebble mine.

c. Third, any current or future owner of the mineral interests can probably escape the limits of the 2022 PD by using one or more TSF sites in the South Fork Kuktuli drainage within the defined area of the more permissive limits in the 2022 PD.

Any current or future owner of the mineral interests at the Pebble deposit may prefer to revise the 2020 Mine Plan by relocating the bulk TSF within the defined area if doing so would be less costly and avoid triggering the limits that apply only within the defined area. The foregoing map of the defined area shows that nearly all facilities of the 2020 Mine Plan, except the mine pit, are in the North Fork Kuktuli drainage. Accordingly, the 2022 PD states, with respect to the four types of adverse effects caused by the 2020 Mine Plan and which are the basis of the proposed limits in the 2022 PD, that all or most of the adverse effects of each type would occur in the North Fork Kuktuli drainage. [Under the 2020 mine plan, all of the loss of anadromous streams would be in the North Fork drainage (2022 PD at 4-5); most of the loss of tributaries to anadromous streams would be in the North Fork drainage (id. at 4-18 - 4-20); most of the loss of wetlands, lakes and ponds that support anadromous streams would be in the North Fork drainage (see 2002 PD, Fig. ES-5 (reproduced above)); and most of the miles of anadromous streams with streamflow alteration over 20 percent would be in the North Fork drainage (2022 PD, Fig. 4-9 at p. 4-34 (misnumbered asp. 4-19).]

The following map from the 2014 PD depicts TSF sites TSF1, TSF2 and TSF3, which EPA identified at that time and in the underlying watershed assessment EPA in 2014. [See 2014 PD at 4-37.] TSF2 and TSF3 are in the South Fork drainage. They are within the boundary of defined area of the 2022 PD where the limits of the 2022 PD would apply. TSF2 and TSF3 are also within several of the TSF options PLP considered, as depicted on PLP's foregoing map from RFI 098, above.

[Reported Salmon Distributions Under the Pebble 2.0 and 6.5 Stage Mines included in submission here]

The following chart from EPA's watershed assessment shows that TSF 3 would destroy 3.3 miles of anadromous streams. That is well below the 8.5-mile limit proposed by the 2022 PD. The 2020 Mine Plan requires a bulk TSF of about 1.14 billion tons. [2020 Mine Plan (June 2020) FESI, Appendix N, at 36 ("Separate TSFs will be constructed for the bulk and pyritic tailings located primarily within the NFK

watershed (Figure 1-4). Total TSF capacity will be sufficient to store the 20-year mine life tailings volume (1.3 billion tons). Approximately 88 percent of the tailings will be bulk tailings, and approximately 12 percent will be pyritic tailings"; 88 percent of 1.3 billion tons is about 1.14 billion tons).] The watershed assessment, at 6-10, states that TSF 3 has a capacity 0.96 billion tons, although the FEIS favored a flow through design for the dam, which could alter the capacity. Nevertheless, TSF 3 might be part of a revised mine plan that seeks to escape the limits of the 2022 PD without moving the bulk TSF outside the defined area of the restrictions. If additional capacity were needed for bulk tailings storage, a revised plan might be able to place some in the northeastern drainage in TSF 2 or outside the defined area.

[Summary table of Stream Length (km) Eliminated, Blocked, or Dewatered by the Mine Footprints in the Pebble 0.2S, 2.0, and 6.5 Scenarios included in submission here]

EPA Response

See EPA's response to comment 7.0.1 regarding why the FD remains focused on the 2020 Mine Plan and EPA's responses to comments 5.A.1 and 5.A.7 regarding clarifications and changes to the FD to address applicability of this CWA Section 404(c) action to future proposals.

Regarding the commenter's concerns about the potential to evade this CWA Section 404(c) action by relocating the TSFs to other locations in close proximity to the Pebble deposit, EPA notes that, as discussed in Section 2.2.1 of the FD, the FEIS concluded the 2020 Mine Plan and its proposed location for the Bulk and Pyritic TSFs was the least environmentally damaging practicable alternative (USACE 2020b), and EPA concurred with that conclusion in our May 28, 2020 letter to USACE (EPA 2020). As discussed in Section 4.2 of the FD, the FEIS concluded that placement of a bulk TSF at other locations in the SFK, NFK, or UTC watersheds would result in similar or greater losses of documented anadromous fish streams than the bulk TSF location proposed in the 2020 Mine Plan (PLP 2018b: RFI 098).

Section 5 of the FD has been revised to clarify that not all future proposals to develop the Pebble deposit may be subject to this FD and that "[p]roposals to discharge dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to this determination remain subject to all statutory and regulatory authorities and requirements under CWA Section 404."

4.B.50 Barry Santana (Doc. #0157, p. 2)

Water management is also critical for the proposed mine project. Huge volumes of water are required for production during mine operation; water contact with potential acid generating rock will also be a factor in the large mine footprint. Water management for the project, as presented in the EIS, is complicated for both management and treatment. The disruption of flow, the alteration of natural temperature and treatment of water contacting the mine site during operation will likely impact the

downstream fishery even if everything goes right. This is unlikely considering environmental conditions at the site combined with potential human error. Groundwater flow at the mine site, particularly in the mine pit, may change completely from the natural state. The immediate vicinity and downstream of the site will affect groundwater flow in both the Nushugak and Kvichak drainages. This critical water source, altered by the mine site and subsequent usage, will cause significant adverse effects to the fishery.

(...)

The transportation corridor and Diamond Point Port has had minimal consideration in this document. Section 6; Other Concerns and Considerations mentions public water supplies along the corridor. Wildlife and recreation will also be seriously impacted; reference to the impacts using: “The FEIS provides more detailed information not summarized in this proposed determination regarding other potential direct, indirect, and cumulative impacts that may result from the 2020 Mine Plan and the Expanded Mine Scenario.....” does not strike me as adequate. The road will have industrial level traffic frequency 24/7 measured in minutes rather than hours for all wildlife along the route. Fugitive dust will be a nightmare as the land dries out due to climate change. This is already occurring in the summer of 2022, The total character of this pristine land will change. Culverts, whether incorrectly designed and installed during road construction or inadequately maintained afterwards, could seriously impact salmon spawning and other non-anadromous fish in the many stream crossings for the proposed route.

EPA Response

Impacts on streamflow resulting from water management at the mine site are discussed in Section 4.2.4 of the FD.

As discussed in Section 2.1.2 of the FD, the 2020 Mine Plan consists of four primary elements: the mine site; the Diamond Point port; the transportation corridor, including concentrate and water return pipelines; and the natural gas pipeline and fiber optic cable. Between 2018 and 2020, EPA reviewed all four of the primary elements of the 2020 Mine Plan for compliance with the CWA Section 404(b)(1) Guidelines. EPA focused its evaluation during the CWA Section 404(c) process on the adverse effects of the discharges of dredged or fill material proposed at the mine site because, based on review of the available information, adverse effects on anadromous fishery areas associated with mine site discharges would be the most significant of the four primary elements of the 2020 Mine Plan.

Section 4.2 of the FD specifically focuses on four categories of effects that the record clearly demonstrates will be unacceptable. Section 4 of the FD describes EPA’s basis for its findings of unacceptable adverse effects on anadromous fishery areas in the SFK, NFK and UTC watersheds.

See Section 2.1.2 of the FD regarding why the FD focuses on the adverse effects resulting from impacts at the mine site. See EPA’s response to comment 5.B.18 regarding how

discharges associated with ancillary project components will be considered in future proposals to develop the Pebble deposit.

The FD acknowledges that it does not account for all potential adverse effects resulting from mine construction and operation. The FD is not and need not be an inventory of all such effects.

4.B.51 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 10-12)

Mining the Pebble deposit would fragment critical habitat

The construction of roads and other transportation infrastructure needed to support a mine in Bristol Bay would severely impact salmon populations through habitat fragmentation. According to the FEIS, the proposed road for the 2020 Mine Plan is expected to cross water bodies 205 times, impacting an estimated fifty-four fish streams, [Pebble FEIS at 4.24-27.] not including connecting and spur roads that would likely cross more streams. [Hauser, *supra*, at 14.] A large number of these stream crossings would be culverts instead of bridges; culverts are notorious for “commonly fail[ing] to allow free passage of fish” [Watershed Assessment at ES-16.] and “restrict[ing] . . . fish movement to upstream habitat.” [Ecology and Env’t, Inc., 2010, *supra*, at 41.] Fragmenting salmon habitat decreases salmon viability by isolating populations and reducing genetic variability. [Michael Kravitz & Greg Blair, *On Assessing Risks to Fish Habitats and Populations Associated with a Transportation Corridor for Proposed Mine Operations in a Salmon-rich Watershed*, 64 *Environmental Management* 107–126 (2019), at 114-117.]

The Pebble project would require a total of 222 culverts, and seventy-three of those culverts would be in fish-bearing streams. [The Pebble Partnership, *Pebble Project Department of the Army Application for Permit (2017) Att. B, Page 55.*] EPA found in its Watershed Assessment that, “[a]ssuming typical maintenance practices after mine operations,” a large majority of these culverted streams “would likely not be able to support long-term populations of resident species.” [Watershed Assessment at 14-5.] These culverts would ultimately “fragment populations into small population isolates vulnerable to extinction.” [Michael Kravitz & Greg Blair, *On Assessing Risks to Fish Habitats and Populations Associated with a Transportation Corridor for Proposed Mine Operations in a Salmon-rich Watershed*, 64 *Environmental Management* 107–126 (2019), at 114-117.] A Final Determination by EPA is justified to protect this economically and culturally significant fishery from extinction.

EPA Response

For the purposes of this FD, EPA evaluated adverse effects on anadromous fishery areas from discharges of dredged or fill material associated with the construction and routine operation of the 2020 Mine Plan. See EPA’s response to comment 4.B.50 regarding how discharges associated with the ancillary project components are addressed in the FD.

4.B.52 National Wildlife Federation (Doc. #2067, p. 3-4)

Road Impacts. The required construction of roads will have significant impacts to streams, wetlands, and fish and wildlife. Road construction will fundamentally fragment and alter the pristine Bristol Bay ecosystem. Among many other impacts, construction of the 2020 Mine Plan roads will require construction of more than 200 culverts—which on their own can create significant adverse ecological impacts. Fugitive dust from the road system can contain highly toxic contaminants and completely cover critical vegetation. The roads will result in significant runoff, siltation, and salt (to keep the roads passable in the winter) to the ecosystem, along with other impacts that could reduce salmon and other fish populations in the area. The impacts of climate change will likely exacerbate the impacts of roads and culverts. Faster snow melts and more intense rain events could add to stormwater and other pollution from roads and increase culvert failures, further impeding fish passage. [See USEPA 2014 Assessment at 29 (discussing the exacerbating effects of climate change on the Project’s impacts).]

EPA Response

See EPA’s responses to comments 4.B.50 and 4.B.51.

4.B.53 Ivan Weber (Doc. #1029, p. 2-3, 4)

□ sulfide ore pollutants, and particularly selenium, have been the objects of far too little research, particularly in fields related both to human health and to wildlife impacts. Both Kennecott research behind the scenes, and surveys of scientific literature in the published sphere, show that contamination effects, especially of nearly all selenium variants on animal reproduction are affected as severely as impacts on human neurological systems. Far too little research has been done on nearly every aspect of selenium metabolism in living organisms.

Bristol Bay must not be put in ecological harm’s way. The taking of ecological risks in Bristol Bay must not include the releasing of any semblance of the selenium quantities or variants that are promised by the excavation, transport or processing of sulfide ores promised at the Pebble Mine!

(...)

One indicator that insufficient research is being devoted to Selenium biogeochemistry lies in the fact that Selenium is both a nutrient and a toxin, depending on a complex set of factors involving animal species and circumstance. Both an essential nutrient and persistent ecotoxin, Selenium demands far greater understanding and scientific certainty than exists! The mining (and hydrocarbon drilling, among others...) industry would like to use the emphasis on Selenium as an essential nutrient for livestock (true, within a relatively strict range) to prejudice the entire slate of possibilities toward allowing greater Selenium compound quantities than may actually be good for ecosystems--- or even suspending critical thinking about the intricacies and quantitative analysis of the many organic and inorganic compounds possible in the vicinity of copper sulfide ore minerals. It’s actually a complicated set of interactions; many of them are among organic Selenium compounds, which require specialized

analytical systems and disciplines to manage successfully. Industry would like to promote the supposition that “if a little is good, then even more must be better.”

Obviously, Selenium is not the sole contaminant of concern (in addition to being an “essential nutrient” in some circumstances). Arsenic, Lead, Zinc, Copper, Cobalt, Mercury, Silver, Nickel, and several other metals are likely to occur around this proposed Pebble metals mining, beneficiation and reclamation operations, several subject to some of the same generalizations as Selenium. Because of their respective commercial values, however, none is likely to present the biogeochemical complexity or reproductive toxicity of Selenium compounds.

EPA Response

EPA agrees that discharges from the proposed mine would likely alter water chemistry, which may affect fishes and wildlife. Water quality effects are discussed in Appendix B of the FD. See also EPA’s response to comment 8.0.1.

4.C Adverse Effects of Loss of Anadromous Fish Streams

4.C.1 H2T Mine Engineering Services, LLP (Doc. #0270, p. 2)

The mine-impacted anadromous streams amount to 0.08% of all mapped anadromous streams in the Bristol Bay watershed (9819 miles). As the EIS acknowledges, impacts to salmon species are so small that they cannot be measured.

EPA Response

Appendix B of the FD has been revised to address FEIS conclusions, like this one, that appear to be inconsistent with the FD (see Attachment 1). As discussed in Appendix B, the selection of the appropriate scale at which to conduct an assessment is critical, because assessment of whether “measurable impacts” or “significant impacts” occur is scale dependent. For example, if an assessment considers a large-enough spatial scale, relative to the assessed area, when evaluating impacts, the relative magnitude of those impacts will diminish as a function of increasing scale (although the absolute magnitude of those impacts remains unchanged). In this case, 94 percent of the 2020 Mine Plan’s impacts to streams, wetlands, and other aquatic resources would occur in the Kaktuli River watershed. The miles of streams and acres of wetlands and other waters that would be lost reflect local conditions and provide habitat for specific fish communities that are part of a portfolio of local populations of multiple Pacific salmon and other fish species (Section 3.3.3). Thus, the FEIS conclusion does not present impacts at the smaller, more relevant and appropriate scale at which impacts would be measurable and significant for the fish populations that rely on these habitats (see Appendix B of the FD, including Attachment 1 where FEIS quotes and conclusions are specifically addressed).

As discussed in Section 4 of the FD, EPA has evaluated the adverse effects of discharges of dredged or fill material associated with development of the Pebble deposit on anadromous fishery areas in the SFK, NFK, and UTC watersheds. EPA has evaluated these adverse effects at the scale of the SFK, NFK, and UTC watersheds because these watersheds are the areas that would be most directly affected by mine development at the Pebble deposit and because the most extensive physical, chemical, and biological data currently available have been collected in these watersheds (e.g., PLP 2011, PLP 2018a, USACE 2020a). Evaluating the effects of discharges of dredged or fill material associated with mine site development for the Pebble deposit at the scale of the SFK, NFK, and UTC watersheds enables EPA to draw conclusions at the spatial and temporal scales that are most biologically relevant to the species (salmon) and life stages (eggs, juveniles, adults) of concern—that is, the spatial and temporal scales that ultimately determine the reproductive success and long-term persistence of these species and their genetically distinct populations.

4.C.2 Mass Mailing Campaign (Doc. #2544, p. 1)

The mine-impacted anadromous streams amount to less than 1/10th of 1% (0.08%) of all mapped anadromous streams in the Bristol Bay watershed (9,819 miles).

EPA Response

See EPA's response to comment 4.C.1.

4.C.3 Mass Mailing Campaign (Doc. #2545, p. 1)

The mine-impacted anadromous streams amount to less than 1/10th of 1% (0.08%) of all mapped anadromous streams in the Bristol Bay watershed (9,819 miles).

EPA Response

See EPA's response to comment 4.C.1.

4.C.4 Mass Mailing Campaign (Doc. #2551, p. 1)

The Final EIS related to the Pebble Deposit clearly demonstrated that the prospect can be developed responsibly. Mine-impacted anadromous streams amount to less than 1/10th of 1% (0.08%) of all mapped anadromous streams in the Bristol Bay watershed (9,819 miles). The FEIS states that impacts to salmon species are so small that they can't be measured.

EPA Response

See EPA's response to comment 4.C.1.

4.C.5 Alaska Department of Environmental Conservation (Doc. #0814, p. 25-26)

i. Finding #1: “The loss of approximately 8.5 miles (13.7 km) of documented anadromous fish streams.” [PD at 5-1.]

Region 10 states that discharges of dredged or fill material associated with the 2020 Mine Plan would result in the permanent loss of approximately 8.5 miles of “streams with documented anadromous fish occurrence, specifically Coho and Chinook salmon.” [PD at 3-5, 4-4, 4-5.] This, in turn, will result in general fish displacement, injury, and mortality. [PD at 4-8.] These streams are generally ecologically valuable because of their interconnectivity with ponds and inundated wetlands—features generally which provide “excellent rearing habitat” and “important overwintering and flow velocity refugia for salmonids.” [PD at 4-8.] Region 10 further states that the loss of 8.5 miles of anadromous fish streams from a single project is “unprecedented in the context of the CWA Section 404 regulatory program in Alaska.” [PD at 4-8.] This justification is flawed in several respects.

First, Region 10 has failed to tie this finding to “fisheries.” No part of the 8.5 miles of stream loss occurs within, or within close proximity to, any of the seven fisheries identified by Region 10 on page 3-59. Effects from these losses are not tied to any fishery. Generalizations of scientifically recognized facts are insufficient.

Second, Region 10 has failed to prove “significance.” Contextualizing the 8.5-mile loss in the Nushagak and Kvichak River watersheds, which comprise two of the six major watersheds of the Bristol Bay area, provides a more appropriate perspective. [PD at 3-1.] Region 10 indicates that these two watersheds alone “contain over 33,000 miles of streams.” In other words, using Region 10’s own numbers, the loss at issue in this finding is the loss of less than 0.03% of the total streams in the Nushagak and Kvichak watersheds. Measured against all six major watersheds comprising Bristol Bay, this finding is that less than 0.01% of the streams in Bristol Bay stand to be adversely affected by the proposed project. Given Region 10’s explicit statement that its proposed veto is based on “the unacceptable adverse effects on anadromous fishery areas in the Bristol Bay watershed” [“Alaska’s Bristol Bay watershed is an area of unparalleled ecological value . . . The Bristol Bay watershed . . . support[s] a more than 4,000 year old subsistence-based way of life for Alaska Natives . . . The Bristol Bay watershed supports the world’s largest runs of Sockeye Salmon . . . Bristol Bay’s Chinook Salmon runs are [] frequently at or near the world’s largest . . . Bristol Bay is remarkable as one of the last places on Earth with such bountiful and sustainable harvests of wild salmon . . .” (PD at ES-1.)]—the Bristol Bay area (all 41,900 square miles of it) is the appropriate comparison when assessing significance. Under any definition of “significant,” surely, <0.01% does not suffice. [Additionally, Region 10 made at least one mistake in its calculations. In Table 4.2 on page 4-5, Region 10 incorrectly inputs the amount of Chinook salmon rearing habitat loss at 3.0 miles, when it should have been 2.24 miles. This figure relies on a misquote from Joe Geifer at Alaska Department of Fish & Game, suggesting that .76 of the 3.0 miles is appropriately classified as rearing habitat for Chinook. But as Mr. Geifer explained to Region 10 previously, and as the State again explains now, the .76 number relayed by Mr. Geifer represents an area where Chinook have been documented;

the area is not a rearing habitat. If Region 10 miscalculated a figure once, it can do it again—given the volumes of information associated with this proposed veto, further mistakes may go uncaught.]

Importantly, Region 10 fails to acknowledge that Alaska’s Anadromous Fish Act [AS § 16.05.871.] and Fish Passage Act [AS § 16.05.841.] would require additional state permitting before individual components of the project could proceed. In the process of evaluating these permits, ADF&G habitat biologists would assess the streams anticipated to be affected, determine what protective or other measures could be implemented, and determine what mitigation is needed to offset negative impacts. Permitting, mitigation, and continued monitoring are all responsibilities of ADF&G under state permitting programs. As detailed in previously in this Letter, [See supra Section 4 of the Alaska Section of this Letter.] this responsibility includes protecting anadromous fish habitat and providing free passage for all fish species. How ADF&G might mitigate this loss under these acts remains, at this time, unexplored. Region 10’s § 404(c) veto simply cuts off this valuable line of state protection.

Third, the notion that projects are subject to veto simply because, in Alaska, some aspect of the project has never been done before, is unjustified. This consideration is certainly not rooted in the statutory or regulatory text. If a loss is “significant” merely if it is unprecedented in Alaska, then a great deal many new projects in our young and underdeveloped State are vulnerable to veto.

The first finding cannot serve as the basis of a § 404(c) veto.

EPA Response

Regarding the commenter’s first point, consistent with Section 404(c) of the CWA, EPA ties its findings to unacceptable adverse effects on fishery areas, in this case anadromous fishery areas in the SFK, NFK, and UTC watersheds. The 8.5 miles of anadromous streams in question are themselves fishery areas and support additional fishery areas downstream of the mine site (see Section 4 of the FD). See EPA’s response to comment 4.A.1.

Regarding the commenter’s second point, see EPA’s response to comment 4.C.1. Also, the anadromous fishery areas in the SFK, NFK, and UTC watersheds that are the subject of this FD are “anadromous fishery areas in the Bristol Bay watershed” because they drain to the Nushagak and Kvichak Rivers, which drain to Bristol Bay. Additionally, since issuance of the PD, ADF&G has updated the AWC with the revised information regarding the appropriate classification of the 0.76 miles of Chinook Salmon habitat cited by the commenter. The FD reflects these latest revisions to the AWC. Further, EPA reviewed both mitigation plans submitted by PLP (PLP 2020a, PLP 2020b) as part of its Section 404 permit application; EPA also reviewed all other compensatory mitigation measures proposed by PLP over the past decade. Thus, in this case, EPA considered all compensatory mitigation measures proposed by PLP over the past decade in the FD and found that these measures would not mitigate the adverse effects described in the FD to an acceptable level (Section 4.3.2 and Appendix C of the FD). Despite EPA’s specific

request in the PD to provide comment regarding additional potential mitigation measures, neither PLP nor the State proposed any additional potential compensatory mitigation measures as part of their review of the PD. See EPA’s responses to comments 4.I.13 and 4.I.4. Finally, EPA’s basis for concluding that the FD meets the statutory and regulatory standard of “unacceptable adverse effects” is described in Section 4 of the FD. See also Sections 3 and 4.2 and Appendix B of the FD for discussions of the watershed scale.

Regarding the commenter’s third point, EPA is not exercising its CWA Section 404(c) authority because “some aspect of the project has never been done before” in Alaska. On the contrary, as discussed in Section 4 of the FD, EPA is taking this action because of the nature and magnitude of the adverse effects on anadromous fishery areas that would result from the discharge of dredged or fill material associated with developing the Pebble deposit as described in the final determination.

4.C.6 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 26-28)

A. EPA Has Not Demonstrated That An Unacceptable Loss of Anadromous Fish Streams and Loss of Additional Streams that Support Anadromous Fish Streams Will Occur

EPA asserts that the permanent loss of 8.5 miles of anadromous fish streams at the mine site “would reduce the overall capacity and productivity of Coho and Chinook salmon in the entire NFK watershed.” [Id. at 4-47. EPA states the Revised Proposed Determination is based solely on adverse effects on anadromous fishery areas. Therefore, PLP has focused its comments on anadromous fishery impacts. While the Revised Proposed Determination “notes” that the loss of anadromous fish streams would also impact non-anadromous fish species, the FEIS found otherwise. FEIS at 4.24-46 (“impacts to anadromous and resident fish populations from these direct habitat losses would not be measurable, and would be expected to fall within the range of natural variability”).] EPA also asserts that the loss of approximately 91.2 miles of additional streams “could” have unacceptable adverse effects on anadromous fishery areas in the SFK and NFK watersheds. [Revised Proposed Determination at 4-23.] EPA claims this is based in part on the “crucial role that these headwater streams play in providing ecological subsidies to downstream anadromous fish streams.” [EPA also overstates the “pristine” nature of the Bristol Bay region throughout the Revised Proposed Determination. See, e.g., id. at 2-20 (“The Bristol Bay watershed represents a largely pristine, intact ecosystem with outstanding ecological resources.”). As PLP discussed in its Comments to the 2014 Proposed Determination, the Bristol Bay region is not as intact or undisturbed by human activity as EPA posits. See Comments of the Pebble Limited Partnership on EPA Region 10’s Proposed Determination Pursuant to Section 404(c) of the Clean Water Act Regarding the Pebble Deposit Area, Southwest Alaska at 40-43 (Sept. 30, 2014), <https://www.regulations.gov/comment/EPA-R10-OW-2014-0505-3777>; see also PLP, Response to EPA’s February 28, 2014 Letter Initiating the Clean Water Action Section 404(c) Process for the Pebble Mine Project (Apr. 29, 2014), https://northerndynastyminerals.com/site/assets/files/4568/plp_response_to_final_bbwa_april2014.p

[df](#). Rather than restate those points here, PLP incorporates its 2014 Comments (including exhibits) by reference. The entire basis for the Revised Proposed Determination is potential impacts to fish, yet every year about 70% of returning fish are harvested, so the ecological integrity of the area is hardly untouched. Another example of EPA's overstatement: Iliamna Lake is not an "undeveloped lake." Revised Proposed Determination at 3-2. There are six communities, numerous Native allotments, and summer camps on its shoreline, and substantial commercial traffic on the lake both in the summer and winter.]

The Revised Proposed Determination suffers from the same fundamental flaw as the 2014 version: there is no quantification of impact on aquatic resources from the stream loss. The 2014 Proposed Determination assumed that damage to 5 miles of salmon bearing streams was unacceptable. In the Revised Proposed Determination, EPA similarly assumes the estimated stream losses for the 2020 Mine Plan are unacceptable. But nowhere in either the 2014 or the Revised Proposed Determination is there any quantification of the impact on the watershed or on the fish population of the loss of 5 miles of anadromous streams versus 8.5 miles of anadromous streams. The failure to include such an explanation is fatal to the conclusions reached. Science does not demand the outcome here; there is no quantification of risk that demands this outcome. Instead, EPA began with a predetermined outcome and manipulated the process to reach that result. The failure to actually quantify the risk of actual stream losses is fatal to the Revised Proposed Determination.

This failure is especially egregious because EPA's conclusions that the stream losses at the mine site will cause unacceptable impacts to fish directly contradict the FEIS, which found no significant impacts to the population of fish or fish habitat in the Kaktuli. The FEIS provides:

Alternative 1a would not have measurable effects on the number of adult salmon returning to the Kvichak and Nushagak river systems as a result of project construction and operations, due the limited lineal footage of upper Kaktuli River fish habitat affected by placement of fill. [FEIS at 4.6-9.]

Mine site development would permanently remove approximately 22 miles of fish habitat in the North Fork Kaktuli and South Fork Kaktuli drainages. The loss of habitat is not expected to have a measurable impact on fish populations based on physical habitat characteristics and fish density estimates in the affected reaches. [Id. at 4.24-1 (emphasis added).]

The Revised Proposed Determination provides no new information that contradicts the FEIS findings on fish. Instead, EPA makes the unsupported assertion that the FEIS "likely underestimates both direct and indirect effects on fish habitat." [Revised Proposed Determination at B-17.] As discussed above however, EPA's supposition that "FEIS conclusions ... should be viewed as minimum estimates" is baseless.

In fact, the FEIS findings likely overestimate impacts. The FEIS findings are based on the anadromous downstream mileage known at that time, but the actual anadromous downstream mileage is higher. As discussed above, PLP submitted more detailed and complete data for the HK watershed with the November 2020 CMP. The updated CMP data indicate the prevalence of anadromous streams in the HK

is about 20% higher than reported in the FEIS. [See November 2020 CMP at 17, Figure 3-1 (regarding the additional probable anadromous mileage in the KCA). The total potential mileage is three times the total miles impacted by the mine footprint and would represent a 20% increase in the mileage protected in the preservation area.] Thus, there is more fish habitat in these watersheds than what was reflected in the original baseline data, which in turn means the FEIS overstates impacts to fish habitat.

EPA also asserts that “the integrated effect that these [Pebble development] changes are predicted to have on fish habitat has not been assessed adequately.” [Revised Proposed Determination at B-17.] But if the potential changes are not yet adequately known, they certainly cannot provide a basis for EPA to take the extreme action of restricting development in a 309 square mile area. If EPA believes there are questions around the impacts of the Pebble Project, it must develop data to answer those questions. Instead EPA simply assumes the worst, and uses those baseless assumptions to further its ultimate goal of restricting all future development of the Pebble Deposit.

EPA Response

The terminology used in the PD (i.e., “could result”) is consistent with EPA’s CWA Section 404(c) regulations at 40 CFR 231.3, which provide that “if the Regional Administrator has reason to believe after evaluating the information available to him, . . . that an ‘unacceptable adverse effect’ could result from the specification or use for specification of a defined area for the disposal of dredged or fill material, he may initiate” a CWA Section 404(c) review process.

The commenter refers to EPA’s use of the word “pristine” to describe the condition of aquatic habitats in the Bristol Bay watershed. EPA has focused, as the commenter acknowledged, on the intact ecosystems within the Bristol Bay watershed with outstanding ecological resources, which are largely pristine. With respect to the commenter’s contention that “the entire basis for the Revised Proposed Determination is potential impacts to fish, yet every year about 70% of returning fish are harvested, so the ecological integrity of the area is hardly untouched,” the commenter mischaracterizes EPA’s descriptions of the habitats in the Bristol Bay watershed. EPA has not contended that the Bristol Bay watershed is completely “untouched” and in fact the FD discusses the subsistence, commercial, and recreational use of fish resources in the Bristol Bay watershed. EPA also acknowledged in the FD that there are six Native communities around Lake Iliamna (see Section 6.3.1.) Rather, EPA’s use of the term “pristine” throughout the document is intended to convey that the areas at issue are extremely high functioning ecosystems that are devoid of the development evaluated in this final determination.

Nothing in CWA Section 404(c) or its implementing regulations requires that EPA provide a “quantification of the impact on the watershed or on the fish population,” including “local or regional fish populations” (see EPA’s response to comment 5.B.32). CWA Section 404(c) requires EPA to determine that discharges of dredged or fill material will have

unacceptable adverse effects on one or more of the resources enumerated under the statute, including fishery areas (including spawning and breeding areas). Here, consistent with CWA Section 404(c) and its implementing regulations, EPA has determined that certain discharges of dredged or fill material associated with developing the Pebble deposit into certain waters of the United States will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. EPA's determination that the discharges of dredged or fill material evaluated in the FD will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds is well-supported by an extensive body scientific and technical information. See Sections 3 and 4 of the FD, which include substantial narrative and quantitative information. For example, Section 4.2.1 of the FD describes the adverse effects on anadromous fishery areas that would result from the permanent loss of approximately 8.5 miles of anadromous fish streams, streams that directly support spawning and rearing for Chinook and Coho salmon and provide ecological subsidies for additional downstream spawning and rearing habitat for Chinook, Coho, and Sockeye salmon. Section 4.2.1 describes how this impact represents a significant loss of and damage to fishery areas in the NFK watershed and how this level of loss would also result in such adverse effects if it occurred elsewhere in the SFK, NFK, or UTC watersheds. See also EPA's response to comment 4.B.41.

The commenter contends that because EPA asserts that the integrated effect development of the 2020 Mine Plan would have on fish habitats has not been adequately evaluated, these effects "cannot provide a basis for EPA to take the extreme action of restricting development in a 309 square mile area." As an initial matter, EPA's action is not "extreme" and does not "restrict development in a 309 square mile area." See EPA's responses to comments 2.C.23 and 5.B.32. In any event, the FD is not and need not be an inventory of all potential adverse effects on fish habitat that will result from the 2020 Mine Plan, such as the integrated effects of changes in streamflow, water temperature, water chemistry, and other parameters. In Appendix B of the PD and Appendix B of the FD, EPA details many reasons why the FEIS likely provides a significant underestimate of impacts to aquatic resources that would result from the construction and operation of the 2020 Mine Plan. However, the fact that the FEIS likely significantly underestimates the impacts to aquatic resources that would result from the construction and operation of the 2020 Mine Plan is ultimately of no consequence to the validity of EPA's unacceptable adverse effects determinations, because each of EPA's *independent* unacceptable adverse effects determinations relate to one of four aquatic resource losses and stream flow changes that the FEIS documents will occur with development of 2020 Mine Plan. Specifically, as detailed in Sections 4.2.1 through 4.2.4, EPA's FD is based solely on (1) the loss of anadromous streams, (2) the loss of additional streams that support anadromous streams, (3) the loss of wetlands and other waters that support anadromous streams, and (4) streamflow changes in anadromous fish streams. As explained in Section 4 of the FD,

even the minimum estimates of these impacts provided in the FEIS represent unacceptable adverse effects and support EPA’s conclusions in the FD.

Information and analysis in the FEIS and ROD support EPA’s findings in the FD and both documents were cited extensively in the PD and the FD. Attachment 1 of Appendix B in the FD addresses FEIS conclusions that appear to be inconsistent with the FD.

With respect to the commenter’s contention that EPA “began with a predetermined outcome and manipulated the process to reach that result,” EPA disagrees. See EPA’s response to comment 2.C.54.

With respect to the commenter’s contentions that the 2014 PD (EPA 2014b) was flawed, comments that are solely related to the 2014 PD are outside the scope of this action. Although EPA relies on an extensive and well supported scientific and technical record that spans decades, EPA engaged in a new, open, and transparent CWA 404(c) review process. EPA’s 2022 PD, on which the Agency sought public comment, was issued after a new 15-day letter, was a new document based on an extensive and carefully considered record, and was consistent with the CWA Section 404(c) regulatory process set forth in EPA’s CWA Section 404(c) regulations. Similarly, with respect to the commenter’s assertion that it “incorporates its 2014 Comments (including exhibits) by reference,” EPA notes that, where the commenter has included enough specific information about its public comment on the 2014 PD and explained how its 2014 comment is relevant to the 2022 PD, EPA has responded. However, general incorporations by reference of public comments on an entirely different action do not provide EPA with sufficient information to which it can respond.

4.C.7 The Pebble Limited Partnership (PLP) (Doc. #1912, Exhibit 2, p. 6-13)

1a. The loss of anadromous fish habitat in Tributary NFK 1.190 (NK 1.190) would result in displacement not mortality of adult Coho Salmon.

The Proposed Determination asserts that the loss of 8.5 miles of stream habitat in the North Fork Kuktuli River (NFK) “would result in fish displacement, injury, and mortality” (Section 4.2.1.2). As presented in Table 4-2.1 of the Proposed Determination, salmon use has been documented only throughout 7.1 miles of these tributary streams, including up to 3.7 miles of Coho Salmon spawning habitat. Chinook and Sockeye salmon spawning has not been observed in these tributaries.

The U.S. Environmental Protection Agency (EPA) asserts that this habitat loss would result in an adverse, population-level effect on NFK Coho and Chinook salmon, but fails to explain how that effect would occur. The only plausible way for the loss of 8.5 miles of anadromous stream habitat to result in an adverse effect on fish populations would be through a simultaneous and significant level of Coho and Chinook salmon mortality. EPA does not present any evidence explaining why such mortality would be

expected, how many fish would be lost, what lifestages of which salmon species would be affected, nor what proportion of the NFK populations this hypothetical mortality might represent.

There are several ecologically based reasons why the EPA's assumption that habitat loss equals fish loss is not valid. In fact, when considering the data presented in the USACE's Environmental Impact Statement (EIS) along with a general knowledge of salmon life history and population structure, it is more likely that permanent loss of 8.5 miles of anadromous stream in the NFK would occur without any adult salmon mortality, or, if it occurred at all, it would be at a sufficiently low enough level (on the order of individual fish) to not cause a population level effect.

Adult salmon mortality in NFK Tributary 1.190 (NK 1.190) can be avoided if standard construction Best Management Practices (BMPs) for salmon streams are followed. Construction activity in NK 1.190 would be conducted during the state's pre-determined in-water work period and would be sequenced to close off access to a tributary prior to the beginning of annual run of Coho Salmon. Thus, any adults returning to spawn would be displaced and would have to move on to other available habitat in the NFK. Displacing adult salmon is not likely to increase their risk of injury or mortality.

While salmon do have a strong homing tendency for spawning, they also contain the genetic propensity to explore other habitats. This is evidenced from salmon "straying" and re-establishing populations in river systems after original populations had been completely depleted. Two prominent cases depicting this ecological response are the Toutle River steelhead populations after the eruption of Mount St. Helens filled the river with ash (Lucas 1985, Leider 1989), and the expansion of salmon runs in the Elwha River after dam removal opened access to salmon habitat upstream that had been blocked for decades (Duda et al 2021, Liermann et al. 2017). A substantial portion of the salmon that have re-established populations in these rivers did not originate there but were from other populations nearby. Genetic evidence from the salmon returning to the Elwha River were fish from other nearby populations that were exploring for new suitable habitat (Quinn et al. 2021).

Exploratory behavior is natural and widespread among salmon species and populations throughout their distribution. It is an innate behavioral mechanism that allows salmon to survive in unpredictable rivers and streams that are affected by floods, landslides, drought, or even volcanic eruption. When such events occur and salmon cannot return to their natal spawning grounds, salmon can, and do, go elsewhere to spawn. The pervasiveness of this behavior among salmon species and stocks is evidenced by the disposition of adult salmon that return to the hatchery in excess of hatchery broodstock need. When these fish cannot enter the hatchery and are forced to remain in the river, they do not simply give up, but find suitable spawning habitat, pair up, and spawn. There are many examples of this occurring throughout the West including Coho Salmon on the Lower Cowlitz River, Washington; Chinook Salmon in Battle Creek, California; and Chinook Salmon in the Willamette River, Oregon. Based on the genetic propensity for salmon to complete their life cycle with spawning and the fact that straying into new habitat to spawn is a commonly observed salmon behavior, it is highly unlikely that any of adult Coho Salmon that return to NK 1.190 to spawn but find it inaccessible would die; rather, they would be expected to find suitable spawning habitat elsewhere in the NFK.

The disposition of displaced Coho Salmon is highly dependent on two important factors: the relative number of potentially displaced fish and the presence of suitable habitat outside the impacted tributary. The seasonal maximum count of adult Coho Salmon documented in NK 1.190 was 27 fish (EIS Table 3.24-7; USACE 2020). Based on the existing habitat data and instream flow habitat models developed for the NFK, it is unlikely that the current or future condition of spawning habitat in the NFK is limited, meaning that any returning adult Coho Salmon displaced from NK 1.190 would be able to move elsewhere in the NFK and find suitable spawning habitat. As shown below, the available evidence supports the assertion that the NFK has sufficient spawning habitat for displaced Coho Salmon.

First, as described in the Proposed Determination, the commercial fisheries downstream of the NFK take a majority of the salmon runs, up to 70% for some species. From an evolutionary perspective, this means that the majority of salmon that were successfully produced from the NFK will not return to spawn, substantially reducing competition for spawning space and likely food resources for juvenile rearing as well. Second, the relative proportion of spawning habitat that would be lost in NK 1.190 compared to what would continue to exist in the rest of the NFK shows that sufficient spawning habitat would remain to support displaced Coho Salmon. Coho Salmon have been documented throughout much of the mainstem NFK, excluding headwaters in reach NFK E. Coho Salmon have been documented and designated as Coho spawning habitat in NK 1.190 and four other NFK tributaries (NK 1.40, NK 1.240, NK 1.260, and NK 1.280); however, the extent of the Coho Salmon spawning habitat in the four additional tributaries was not documented.

The Proposed Determination does not assess the relative proportion of Coho Salmon spawning habitat loss. To specifically address this question with information provided in the EIS, we present three comparative approaches with increasing level of rigor that use: 1) linear length of habitat, 2) habitat area, and 3) instream flow modeling to evaluate just how much spawning habitat would be lost and would need to be available elsewhere for displaced Coho Salmon adults.

Linear Length of Habitat

Based on the essential fish habitat assessment provided in the Appendix I of the EIS (USACE 2020), the available Coho Salmon spawning habitat in the NFK covers 72.7 miles (383,856 linear feet) and NK 1.190 spawning covers 3.7 miles (19,536 linear feet). Estimating this loss of spawning habitat based on length alone, NK 1.190 would represent 5.0% of the total stream length available to Coho Salmon in the NFK. However, the linear distance of a stream is often an unreliable indicator of available habitat; obviously a mile of stream with spawning habitat that is 100 feet wide would have much more habitat by area than a mile of stream with spawning habitat only 10 feet wide. Therefore, it is important to put this potential effect in the context of the area of spawning habitat.

Habitat Area

Using channel data provided in the EIS Appendix I, Table 4-10 (USACE 2020), the average width for the mainstem NFK was 184.7 feet (56.3 meters), while the average width for NK 1.190 was 35.4 feet (10.8 meters, Table 1). A rough approximation of the existing area of mainstem habitat available to Coho

Salmon in the NFK is 70,898,203 square feet (383,856 linear ft X 184.7 ft width), while the Coho Salmon habitat lost can be approximated at 691,574 square feet (19,536 linear ft X 35.4 ft width). Based on this coarse area-to-area analysis, the loss of Coho Salmon habitat in NK 1.190 is estimated at 0.9% of the available Coho Salmon habitat in the NFK. This proportion would be further reduced if the area of available spawning habitat within NK 1.40, NK 1.240, NK 1.260, and NK 1.280 were included in the analysis. While these numbers do not offer a rigorous assessment of spawning habitat quantities in the NFK, they are sufficient to indicate that there is ample spawning habitat available within the NFK to absorb spawning needs of Coho Salmon affected by the loss of 3.7 miles in NK 1.190.

[Table 1. Average Channel Widths included in submission here]

Instream Flow Modeling

Instream flow habitat modeling is an accepted and widely used method to understand flow-habitat relationships. For the NFK basin, this modeling has been completed specifically to address potential impacts to the amount of Coho Salmon habitat in the mainstem of the North Fork Koktuli River. Results of the modeling effort are presented in EIS Appendix K 4.24. Based on channel morphology, discharge, and locally derived habitat suitability curves, the physical habitat simulation model (PHABSIM) estimated the total available Coho Salmon spawning habitat located within the stream miles designated as spawning habitat within the mainstem NFK as well as in NK 1.190 under wet, average, and dry water years (Table 2). The total area of suitable spawning habitat is less than that estimated by just using channel width and length as the model considers water depth and velocities that are suited for salmon spawning. Based on the PHABSIM model, the suitable Coho Salmon spawning habitat in NK 1.190 that would be lost would be a maximum of 871 square feet under wet or average water years, or 0.06% of the habitat available under the same conditions.

The model also predicted changes to Coho Salmon spawning habitat with the mine in operation (i.e., supplemental treated water discharges to receiving streams). The results indicate that total suitable Coho Salmon spawning habitat in the mainstem NFK would increase during average and dry years due to treated water discharges, but during wet years would be reduced by 0.99%, likely related to depths and/or velocities that exceed suitability criteria. Thus, the maximum potential impact would occur during dry years, but again would be equal to 0.06% of the suitable Coho Salmon spawning habitat under those conditions.

[Table 2. Predicted Quantity of Suitable Coho Salmon Habitat in Square Feet included in submission here]

1b. Juvenile mortality can be minimized to levels that would not have any population- or family-level genetic impact and therefore is not likely to effect biocomplexity of the NFK salmon populations.

Juvenile salmon mortality in NK 1.190 and 1.200 can be avoided if standard construction BMPs for salmon streams are followed. Construction activity in both tributaries would be conducted during the state's pre-determined in-water work period. A fish salvage operation where fish remaining are captured as flows recede and relocated to suitable habitat nearby will reduce direct mortality from this

one-time event. Relocating juvenile salmon is standard practice to reduce injury and mortality during construction in salmon streams.

While the numbers of individual juvenile salmon that avoid capture and thus may perish when flows to the tributaries cease is uncertain, this number most certainly will not represent the entire genetic material from the local population or even for one salmon family. Salmon life history has evolved to allow for individuals to be successful in the face of unpredictable environments. There are several characteristics that have evolved in salmon that allow them to “hedge their bets” and “spread their risk” to increase the likelihood their genes are passed to the next generation.

First, one pair of salmon parents will have thousands of offspring, typically 2,000 to 5,000 eggs are produced by Coho and Chinook salmon. Many of those offspring will perish as eggs, alevin, or fry. Yet still hundreds of others will survive, some will rear in natal areas while some will move upstream or downstream to find a rearing habitat. This variation in early life history dispersal and habitat use allows salmon to make the most of the low nutrient, cold-water rivers they inhabit and maximizes chances that some offspring will survive local environmental perturbations that are common, such as ice scour in winter or spring floods. This variation in life history expression is evidenced in the NFK as salmon of both species have been documented rearing in natal river reaches and tributaries with and without spawning habitat, and different age classes of salmon are found in different habitats.

Juveniles of Coho and Chinook salmon within the same family and local population will also express variation at the age of migration. For example, juvenile Chinook Salmon will leave natal streams as young-of-the-year, yearlings, and sometimes even two-year-old fish. They move downstream in freshwater systems where conditions offer greater chances for growth. In a study quantifying habitat use by juvenile salmon across riverscapes, Brennan et al. (2019) found that Chinook Salmon juveniles were concentrated in 3rd to 5th order streams during early rearing and disperse downstream over time to larger stream channels. The data from this study indicated that a greater percentage of growth of Chinook Salmon juveniles occurred in larger reaches, specifically 7th to 9th order streams. In addition, this study found that some salmon originating in eastside Mulchatna tributaries, including the Kuktuli River system, achieved more than half of their growth in mainstem reaches of the Mulchatna and Nushagak rivers.

Once in the ocean, offspring from one salmon family will mature at sea and return to spawn at different ages, in general ranging from 2 to 6 years for Coho Salmon in Alaska (Drucker 1972) and 1 to 5 years for Nushagak River Chinook Salmon (Brennan and Schindler 2017). These variations of life history have evolved over time because the rivers and streams that salmon live in are naturally unpredictable: floods happen, droughts happen, even catastrophic events that can significantly degrade large extents of the river channel, such as landslides and volcanic eruption, happen. By having hundreds to thousands of offspring that use different habitats at different times, salmon have evolved the flexibility to sustain themselves throughout the Pacific Rim.

The diversity of life history expressed by salmon means that it is highly unlikely that at any point in time all Coho or Chinook salmon siblings from one family or all local families would be present in these

tributaries simultaneously. It is far more likely that a subset of young-of-the-year fish who have not yet moved downstream will be present when flow ceases. Thus, even if all the juveniles present in NK 1.190 or 1.200 died upon cessation of flow, it would not be a genetic dead end for that local family group. Depending on the timing of the impact, that genetic material would be sustained by siblings of the juveniles that had already moved downstream out of the tributaries that year or even the year before as well as by siblings of the parents will return a year or two after and can spawn elsewhere in the NFK. Because all of these siblings share DNA, there would not be a loss of genetic diversity from the small population of Coho Salmon that spawn in NK 1.190. This application of common knowledge of salmon ecology negates the EPA assertion that genetic biocomplexity of NFK salmon will be reduced.

1c. Any injury or mortality to juvenile salmon would be a one-time event and is unlikely to result in any detectable effect on marine derived nutrients in the NFK or Kaktuli River downstream.

EPA's Proposed Determination incorrectly assumes the loss of habitat associated with the proposed mine would have a perpetual, on-going effect on salmon populations and marine derived nutrients, yet the loss of habitat and any associated mortality would be a one-time event. In fact, any potential effect on individual adult or juvenile salmon would only happen when flow to tributary habitats is stopped. As described above, any potential incidental mortality that did occur would only have the potential to affect one out of 4 age classes for adult Coho Salmon and only one out of 2 or 3 age classes for juvenile Coho or Chinook salmon, respectively.

Given that the loss of habitat would not with any certainty result in any adult Coho Salmon mortality and that juvenile mortality will be limited to only that portion of the year class rearing in the tributaries that cannot be captured and relocated at the time of flow cessation, there is little to no risk of losing the genetic material associated with the fish that have been spawning or rearing in NK 1.190 or 1.200. Thus, EPA's assertions that the loss of these tributaries would result in loss of genetic material associated with an entire local population, would affect biocomplexity of the NFK, and pose risk to the stability of the Nushagak River system is unfounded.

The same argument applies to EPA's unquantified assertion that the loss of habitat "would, in turn, result in the loss of marine-derived nutrients those fish would have contributed upon death." Without any mechanism for adult mortality (as discussed above adults returning to NK 1.190 to spawn would be displaced to the abundance of available spawning habitat elsewhere in the NFK), there is no reason to expect a change in marine derived nutrients in the NFK. Further, given the low densities of juveniles that have been documented in NK 1.190 and 1.200 and that only a proportion of those would escape capture and relocation efforts, this one-time loss to adult production is likely on the order of one or two adult salmon.

1d. The potential losses of habitat would likely have a localized effect on ecological subsidies for habitats downstream.

EPA's Proposed Determination fails to evaluate the extensive existing data collected in the Project Area and summarized in the EIS that suggest that while the loss of tributary habitat is expected to have an

effect on ecological inputs to habitats downstream, that effect would be localized to the immediate area downstream of those tributaries.

“Two other sizeable tributaries (NFK Tributaries NK 1.170 and NK 1.120) meet the mainstem NFK within 2 to 5 miles downstream of the mine site (see Figure 3.24-1), so the extent of effects of reduced macroinvertebrate productivity to downstream resources would likely be limited to the area directly downstream of the mine site (within 5 miles). Effects in the SFK subbasin are expected to be less, because direct loss of habitat or fragmentation of habitat due to sediment dams only occurs at the very upstream end of the mainstem SFK or tributaries to the SFK (e.g., SK 1.190 and SK 1.340).” (Section 4.2.4; USACE 2020)

Looking a bit more closely at the National Hydrography Dataset (NHD) hydrography layer indicates that there are five tributaries within 5 miles downstream of NK 1.190 and 1.200 that would help reduce impacts of loss of subsidies downstream any further. The two sizable tributaries are NK 1.170 and 1.220. NK 1.170 is a 4th order tributary that drains an area of 5,450 acres and joins the mainstem 2 miles downstream of NK 1.190. NK 1.120 is a 3rd order tributary that drains an area of 5,415 acres and joins the mainstem approximately 5 miles downstream. In addition, there are two 2nd order tributaries and one 1st order tributary that will also contribute riparian inputs and to macroinvertebrate production downstream. Ecological inputs from all five of these streams would be expected to minimize impact to nutrients and productivity to the area downstream.

EPA Response

CWA Section 404(c) requires EPA to make a determination that certain discharges of dredged or fill material in certain waters of the United States would result in unacceptable adverse effects on one or more of a set of enumerated resources, including fishery areas (including spawning and breeding areas). In this case, the unacceptability findings in the FD include both quantitative and narrative content. For example, Section 4.2.1 of the FD describes the adverse effects on anadromous fishery areas that would result from the permanent loss of approximately 8.5 miles of anadromous fish streams, streams that directly support spawning and rearing for Chinook and Coho salmon and provide ecological subsidies for additional downstream spawning and rearing habitat for Chinook, Coho, and Sockeye salmon. Section 4.2.1 describes how this impact represents a significant loss of and damage to fishery areas in the NFK watershed and how this level of loss would also result in such adverse effects if it occurred elsewhere in the SFK, NFK, or UTC watersheds.

EPA is not assuming that habitat loss equates to fish loss; EPA only concludes that the expected magnitude of habitat losses and downstream changes in streamflow would constitute unacceptable adverse effects on fishery areas. The unacceptable adverse effects findings detailed in the FD are based on absolute amounts of stream and wetland losses and streamflow changes at the scale of the SFK, NFK, and UTC watersheds. The relative magnitudes of these losses within these three watersheds, based on currently

available mapping and fish distribution data, are presented to acknowledge and provide perspective on the relative extent of these losses, but are not the basis of EPA's unacceptable adverse effects findings. EPA focuses on the absolute amounts of anadromous fish streams that are lost or damaged (e.g., elimination by burial, loss of ecological subsidies, streamflow changes) because multiple salmon life stages (i.e., eggs, juveniles, adults) depend on these specific lost or damaged habitats. As discussed in the FD, habitats across the SFK, NFK, and UTC watersheds are not interchangeable, but represent distinct resources that play a crucial role in supporting and stabilizing productive salmon populations in these watersheds. Similarly, EPA focuses on the absolute amounts of additional streams and wetlands and other waters that support anadromous fish streams that are lost because of the critical role these aquatic resources play in supporting distinct abutting and downstream anadromous fish streams. Increased losses of these aquatic resources result in increased damage to the anadromous fish streams they support.

The 2020 Mine Plan would result in the permanent loss of 8.5 miles of anadromous fish streams, 91 miles of additional streams that support anadromous fish streams, and 2,108 acres of wetlands and other waters in the SFK and NFK watersheds; losses of this magnitude represent a significant impact within these largely undeveloped watersheds with high-quality, intact, and connected aquatic resources. As stated on page 3-1 of the FD, EPA evaluated the impacts and effects at the spatial scale of the SFK, NFK, and UTC watersheds because these watersheds are the areas that would be most directly affected by the discharges of dredged or fill material associated with developing the Pebble deposit and because the most extensive physical, chemical, and biological data currently available have been collected in these watersheds (e.g., PLP 2011, PLP 2018a, USACE 2020a). The relative magnitude of these losses at larger watershed scales is not relevant to whether these losses constitute unacceptable adverse effects at the scale of the SFK, NFK, and UTC watersheds (see Section B.1 of Appendix B in the FD for additional discussion of issues related to spatial and temporal scales).

EPA recognizes that there are multiple methods for quantifying fish habitat, and EPA considered all methods used in the FEIS when developing the FD—in fact, the unacceptable adverse effects identified in the FD are based on linear lengths of stream and instream flow modeling reported in the FEIS. EPA was unable to confirm that the values cited by the commenter for linear lengths of habitat and habitat area accurately represent what was reported in the FEIS, due to what appear to be errors in reporting and units. For example, Table 1 of Kleinschmidt Associates (2022) reports that the bankfull width of the mainstem NFK is 56.3 ft, but later uses a value of 184.7 feet (56.3 m) when calculating habitat availability in the mainstem NFK. See Appendix B of the FD for discussion of EPA's concerns about the limitations of the fish abundance, distribution, and habitat data and modeling upon which FEIS conclusions are based, and why FEIS

estimates of fish habitat loss and alteration likely represent underestimates. However, as detailed in Sections 4.2.1 through 4.2.4 of FD, even these underestimates clearly represent unacceptable adverse effects within the SFK, NFK, and UTC watersheds.

The commenter suggests that the habitat losses described in the FD would be inconsequential for salmon populations for four reasons: (1) loss of Tributary NFK 1.190 would result in displacement, rather than mortality, of adult Coho Salmon; (2) mortality of juvenile salmonids could be minimized; (3) any juvenile injury or mortality would be a “one-time event” and thus not likely to influence marine-derived nutrients downstream; and (4) habitat losses would only have localized effects on downstream subsidies. There are several related issues with each of these claims. As noted by the commenter, the ability of salmon to explore and attempt to exploit available habitat is well known. This fact does not negate the permanent loss of habitat, which is the basis for the unacceptable adverse effects findings in Sections 4.2.1 through 4.2.3 of this FD. As discussed in Appendix B (Sections B.1.2 and B.2.2), the fish distribution and abundance data presented in the FEIS likely underestimate the numbers of fishes that could use the lost habitats over relevant time scales. Expected effects of habitat losses under the 2020 Mine Plan are not predicated on the direct injury or mortality of adult and juvenile salmon, but rather the effects those habitat losses would have on fishes that are adapted to and use those habitats over longer time scales. Habitat losses would not represent a “one-time event” with no long-term repercussions for fish populations. Instead, these habitats would be permanently lost, which would reduce their productive capacity for adult and juvenile salmon to zero in perpetuity, as well as permanently eliminate their contributions to downstream reaches. Given the importance of headwater systems in determining the structure and function of downstream habitats (Section 3.2.4 of the FD), it is reasonable to expect that this loss of subsidies from Tributary NFK 1.190 would adversely affect downstream mainstem reaches.

4.C.8 Loren Karro (Doc. #0847, p. 2)

To even consider such a massive, permanent loss of anadromous habitat in Bristol Bay is unacceptable. Bristol Bay salmon have a rich local, national and global significance. On the local level alone, “salmon resources have nutritional, cultural, economic and recreational values” [ES-3] Salmon are a mainstay of Bristol Bay subsistence resources, utilized by virtually every household in the area. Additionally, “for Alaska Natives, subsistence is much more than the harvesting, processing, sharing and trading of foods. Subsistence holistically subsumes the cultural, social, and spiritual values that are the essence of Alaska Native cultures.” The importance of this cannot be overstated.

EPA Response

See EPA’s response to comment 1.B.2.

4.C.9 National Wildlife Federation (Doc. #2067, p. 4)

The required roads will have major impacts on streams that serve to support listed species, particularly salmon runs which are food sources for species such as beluga whales and Steller sea lions. For example, culverts pose a serious likely impediment to fish passage that could have significant impacts on salmon habitat. According to a 2014 EPA analysis, culverts fail for multiple reasons with impacts on fish passage and habitat:

Culverts commonly fail to allow free passage of fish. They can become blocked by debris or ice that may not stop water flow but that create a barrier to fish movement. Fish passage also may be blocked or inhibited by erosion below a culvert that “perches” the culvert and creates a waterfall, by shallow water caused by a wide culvert and periodic low streamflows, or by excessively high gradients. If blockages occurred during adult salmon immigration or juvenile salmon emigration and were not cleared for several days, production of a yearclass (i.e., fish spawned in the same year) would be lost from or diminished in the stream above the culvert.

EPA Response

See EPA’s response to comment 4.B.50.

4.D Adverse Effects of Loss of Additional Streams that Support Anadromous Fish Streams

4.D.1 Alaska Department of Environmental Conservation (Doc. #0814, p. 27-28)

ii. Finding #2: “The loss of approximately 91.2 miles (146.8 km) of additional streams that support anadromous fish streams.” [PD at 4-3.]

Region 10’s second finding is that an additional 91.2 miles of “streams that support anadromous fish streams” will be lost. Region 10 states that “streams that support anadromous fish streams” means streams that do not currently have documented anadromous fish occurrence . . . [but] still support downstream anadromous fish streams. [PD at 4-18 n.51.]

Region 10 elaborates:

[a]lthough there is not currently documented anadromous fish occurrence in these streams, they may nonetheless be used by anadromous fish[.] [PD at 4-18 n.51.]

So, there is no science documenting stream use, but the potential for such use is what matters. And yet, the potential for such use is not a basis for this proposed determination[.] [PD at 4-18 n.51.]

This confusing explanation fails to provide a concrete, workable definition of “streams that support anadromous fish streams.” Even if it did provide a workable definition, Region 10 seems to assert that the content of that definition “is not a basis for this proposed determination.”

Finding 2 only gets more confounding from there. Region 10’s reasoning is so opaque that Alaska’s experts at ADF&G cannot discern how Region 10 arrived at the 91.2-mile number. These do not appear to be catalogued fish streams.

As to how these streams qualify as “fisheries,” Region 10 has provided insufficient information to connect the dots between: (a) “streams that support anadromous fish streams”; (b) the 8.5 miles of actual anadromous streams; and (c) the fisheries sketched onto the map on page 3-59 (or another definition of “fishery”). None of the areas in (a), (b), or (c) appear to overlap.

Region 10’s undifferentiated reference to “stream miles” fails to distinguish between the functionality of the types of streams in this 91.2-mile stretch of streams. The function of each segment of stream may be substantially different, and more or less valuable, than the next segment of stream. To support its conclusion that these streams will be adversely affected by the mine’s discharges, Region 10’s findings must be tied to specific portions of actual streams.

Lastly, the second finding does not quantify or otherwise objectively measure what effects these 91.2 miles of “streams that support anadromous streams” have on the downstream anadromous habitat. It therefore is not demonstrably “significant” to downstream anadromous streams. Nor is this finding demonstrably “significant” to any of the shaded “fishery areas” identified in Region 10’s map on page 2-59. Since these streams constitute <0.01% of all streams in Bristol Bay, they are demonstrably insignificant when placed in Region 10’s preferred context.

The second finding cannot serve as the basis of a § 404(c) veto.

EPA Response

The commenter raises concerns regarding the PD’s definition of *streams that support anadromous fish streams*. What EPA means by that phrase has been further clarified in the FD (see Section 4, Box 4-2). The commenter raises concerns regarding how the PD derived the amount (estimated in miles) of additional streams that support anadromous fish streams. Additional clarification has been added to Section 4.2.2 of the FD regarding how this amount is estimated. EPA does not assert that the additional streams that support anadromous fish streams are themselves “fisheries” and EPA does not and need not connect those additional streams to the areas identified on Figure 3-17 of the PD (EPA 2022b: Page 3-59) because, as repeatedly stated in the PD and FD, EPA’s determination is based on unacceptable adverse effects on anadromous fishery areas in the SFK, NFK and UTC watersheds. The 91 miles of additional streams that support anadromous fish streams are all located upstream of and therefore drain into anadromous fish streams. For the purposes of this FD, anadromous fishery areas include anadromous fish streams. See EPA’s response to comment 4.A.1.

The headwater streams in question and the ecological functions they perform are characterized in the FEIS and Sections 3 and 4 of the FD. As noted in the FD, headwater streams throughout the SFK, NFK, and UTC watersheds are currently among the least developed and least disturbed (i.e., closest to pristine) habitat of this type in North America. This means that such streams perform their suite of ecological functions at a level that is characteristic of the least altered landscapes. The FD describes the factors that EPA used to make its determination in this case including: headwater streams throughout the SFK, NFK, and UTC watersheds that are currently among the least developed and least disturbed (i.e., closest to pristine) habitat of this type in North America (Section 3.1) and play an important role in supporting Pacific salmon populations (Section 3.2); that these three watersheds have similar amounts of total stream miles (relative to their watershed areas) (Table 3-6); that headwater streams across these three watersheds function similarly to support productive fishery areas for anadromous fishes (Section 3.3); the large amount of permanent loss of stream habitat and the crucial role that these headwater streams play in providing ecological subsidies to downstream anadromous fish streams; the degradation of and thus damage to downstream anadromous fish streams from the loss of ecological subsidies provided by the lost headwater streams; and the resulting erosion of and thus damage to habitat complexity and biocomplexity within the SFK, NFK, and UTC watersheds, both of which are key to the abundance and stability of salmon populations within these watersheds. Information and analysis in the FEIS and ROD support EPA's findings in the FD and both documents are cited extensively by the FD. Attachment 1 of Appendix B in the FD addresses FEIS conclusions that appear to be inconsistent with the FD.

See EPA's responses to comments 4.C.1, 4.C.5, and 4.C.6. Section 404(c) of the CWA requires EPA to make a determination that certain discharges of dredged or fill material in certain waters of the United States would result in unacceptable adverse effects on one or more of a set of enumerated resources, including fishery areas (including spawning and breeding areas). In this case, the unacceptability findings in the FD include both quantitative and narrative content. For example, Section 4.2.2 of the FD describes the adverse effects on anadromous fishery areas that would result from the permanent loss of approximately 91 miles of streams that provide ecological subsidies for downstream spawning and rearing habitat for Chinook, Coho, and Sockeye salmon. Section 4.2.2 describes how this impact represents significant damage to fishery areas in the SFK and NFK watersheds and how this level of loss would also result in such adverse effects if it occurred elsewhere in the SFK, NFK, or UTC watersheds.

4.D.2 The Pebble Limited Partnership (PLP) (Doc. #1912, Exhibit 2, p. 14-16)

The EPA Proposed Determination falsely characterizes the loss of habitat as representing a far larger proportion of the total habitat than is likely to occur. EPA artificially inflated the potential effect of loss of streams and wetlands when estimating the proportion of the Koktuli River potentially impacted.

From the EPA Proposed Determination (Section 4.2.2):

“The combined 99.7 miles (160.5 km) of anadromous fish stream and additional stream losses would represent about 20 percent of available stream habitat in the Headwaters Koktuli River watershed (i.e., the SFK, NFK, and streams and the corresponding permanent loss of ecological subsidies these additional streams provide to downstream anadromous fish streams. Middle Koktuli River HUC-12 watersheds) and 12 percent of available stream habitat in the larger Koktuli River watershed (USACE 2020a).”

In Figure 4-8 and Box 4-2 of the Proposed Determination, EPA acknowledges that the level of mapping detail for aquatic habitats within the proposed mine footprint is more refined than that available for areas outside of the footprint where no on-the-ground surveys were conducted. In Box 4-2, EPA acknowledges that the NFK and SFK waterbodies were mapped on a scale of 1:400, while the NHD was mapped at a scale of 1:63,360.

“EPA understands the area under the 2020 Mine Plan footprint was subject to more review by USACE during the CWA Section 404 permit review process. Therefore, this area is assumed to provide the most accurate comparison area of national datasets to higher resolution water resources maps. While the NHD only shows approximately 25.8 miles (41.5 km) of streams under the 2020 Mine footprint (USGS 2021), PLP identified 99.7 miles (160.5 km) of stream habitat that would be impacted in this same area, including the 8.5 miles (13.7 km) of stream documented to contain anadromous fish (USACE 2020a: Section 4.24). These values indicate there may be almost four times as many streams in these headwater areas than are mapped in the NHD.”

While the Proposed Determination acknowledges these more refined estimates provide for increased mileage and acres of aquatic habitat as compared to national databases, EPA incorrectly assumes these two data sets, one refined and one coarse, can together be used as the most appropriate “comparison area”. By doing so, EPA’s conclusions are likely to be inaccurate.

Further in citing the EIS for data on this flawed comparison, EPA failed to include the following qualifier that was provided in the EIS:

“Note that the mine site area has been extensively surveyed while the remaining portions of the watersheds have not and there are many streams in these watersheds outside the mine site that have not been mapped. Thus, the loss of habitat is certainly overstated in context of the larger watersheds due to the lack of refined mapping. (USACE 2020)

Using the results of their analysis without the USACE qualifier is a mischaracterization of the information presented in the EIS, and falsely leads the reader to assume that the data as presented is comparable, factual, and accurate.

Without the same level of detailed mapping at the Headwater Kaktuli or Kaktuli River watershed scale, the most appropriate analysis would be one conducted at the level of detail in the NHD. In fact, alternative calculations provided in Box A using the NHD dataset suggest a considerably reduced proportional effect.

[Figure: Calculations of Potential Proportional Stream Impact Based on the National Hydrography Database included in submission here]

Additional context around the proportional impact of the loss of tributary streams in the NFK and South Fork Kaktuli (SFK) can be derived from simply comparing the number of tributaries by stream order. Without additional habitat data, including stream length, for all streams in the Kaktuli River, we can look to stream order classification as a simple characteristic that would provide ecological context of these tributaries' losses with respect to supporting anadromous reaches downstream.

Stream order that would be eliminated or partially eliminated by the mine footprint are: NK 1.190 is a 3rd order tributary, and NK 1.200 and the three SFK tributaries are all 2nd order streams. Because a 4th order tributary would contain at least two additional 3rd order streams, we have combined 3rd and 4th order streams for this analysis.

Using the most up to date NHD data set, we counted 109 1st through 4th order tributaries to the Kaktuli River, 105 of which will remain intact to support anadromous fisheries downstream (Table 3).

[Table 3. Stream Order Tributary Summary for the Kaktuli River included in submission here]

Comparing this NHD data to the potential mine impact shows that the loss of NK 1.190 represents a loss of 1 of 13, or 7.7% of the 3rd/4th order streams in the Headwater Kaktuli River Watershed and 1 of 20 or 5.0% of similar order tributaries in the Kaktuli River Watershed. The loss of 4 out of the 33, 2nd order tributaries in the Headwater Kaktuli River Watershed represents a 12% loss of those streams; while 4 of 35 represents an 11% loss of similar order streams for the Kaktuli River Watershed. It should be noted that effects to anadromous reaches from these losses would be reduced further by the presence of 54 1st order tributaries which commonly support resident fishes and macroinvertebrates and to a lesser extent can provide habitats for use by anadromous salmon. All of these 105 remaining 1st to 4th order tributaries in the Kaktuli River would be providing subsidies to anadromous habitats throughout the river.

As the calculations above demonstrate, there is little to no statistical confidence in estimates of impacts that are derived from such unequal comparisons, and any conclusions drawn from such comparisons should at the very least be highly qualified as uncertain and the weakness of the analysis should be taken into account to reach informed, ecologically based decisions.

EPA Response

The FD clarifies that the percentages quoted in this comment come directly from Page 4.24-8 of the FEIS, which states: “This loss of streambed habitat represents about 20 percent of available habitat in the Headwaters Kaktuli River drainage, 12 percent of available habitat in the larger Kaktuli River drainage, and 0.3 percent of available stream and river habitat in the Nushagak watershed.” A footnote has also been added to this quote, noting that EPA recognizes that aquatic resources have not been consistently mapped across the watersheds.

As explained previously, EPA made its unacceptable adverse effects determinations at the scale of the SFK, NFK, and UTC watersheds because that was the most appropriate scale for the analysis in the FD (see Sections 3 and 4.2 of the FD as well as Attachment 1 of Appendix B of the FD). Thus, the relative magnitude of the losses evaluated in the FD at larger watershed scales is not relevant to whether these losses constitute unacceptable adverse effects at the scale of the SFK, NFK, and UTC watersheds. The 2020 Mine Plan would result in the permanent loss of 8.5 miles of anadromous fish streams, 91 miles of additional streams that support anadromous fish streams, and 2,108 acres of wetlands and other waters in the SFK and NFK watersheds (see Section 4.2 and Appendix B, Section B.1 for additional discussion of spatial and temporal scale issues). The rationale for EPA concluding that each of these losses represents an unacceptable adverse effect on fishery areas is detailed in Sections 4.2.1 through 4.2.3 of the FD.

4.D.3 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 15)

Pg. ES-10: “According to the FEIS and ROD, discharges of dredged or fill material to construct and operate the mine site proposed in the 2020 Mine Plan would result in the total loss of approximately 99.7 miles (160.5 km) of stream habitat, representing approximately 8.5 miles (13.7 km) of anadromous fish streams and 91.2 miles (146.8 km) of additional streams that support anadromous fish streams. Such discharges of dredged or fill material also would result in the total loss of approximately 2,113 acres (8.6 km²) of wetlands and other waters that support anadromous fish streams.”

Comment: The lack of documented use by anadromous fishes in 91.2 miles of streams is misleading and ultimately results in underestimation of impacts. The vast majority of Alaska’s streams have never been surveyed for presence or absence of salmon and other fishes. Although streams surrounding the Pebble deposit have been more extensively surveyed, the absence of salmon during one survey at one point in time is by no means confirmation that salmon never use that habitat. Moreover, as the statement does indicate, ALL streams in the area are integral to salmon stream networks. First and second order headwater streams provide the foundation for downstream physical, chemical and biological characteristics of habitat known to support salmon.

EPA Response

EPA agrees with the commenter that first and second order headwater streams provide the foundation for downstream physical, chemical and biological characteristics of habitat known to support salmon. This is reflected in the FD. Appendix B of the FD discusses how existing data collection efforts likely underestimate salmon use of potentially affected aquatic habitats (see Sections B.1.2 and B.2.2).

4.D.4 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 21)

Pg. 4-20 (Box 4-2): “These values indicate there may be almost four times as many streams in these headwater areas than are mapped in the NHD. As indicated in the FEIS, PLP’s identification of additional small-scale watercourses resulted in an increase in stream miles expected to receive direct and indirect impacts in the mine site analysis areas than had been disclosed in the DEIS (USACE 2020a: Section 4.22).”

Comment: This again underscores that EPA’s descriptions of the extent of adverse effects to fishery areas resulting from mine construction and operation are substantially underestimated.

EPA Response

See EPA’s responses to comments 4.B.47 and 4.B.50.

4.E Adverse Effects of Loss of Additional Wetlands and Other Waters that Support Anadromous Fish Streams

4.E.1 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 28-29)

B. EPA Has Not Demonstrated That the Loss of Wetlands and Other Waters Will Have Unacceptable Adverse Effects

EPA asserts that the loss of approximately 2,113 acres of wetlands and other waters “could have unacceptable adverse effects on anadromous fishery areas in the SFK and NFK watersheds.” [Id. at 4-27.] Alaska’s wetlands estate is almost wholly intact. [Alaska encompasses an area of 403,247,700 acres, including offshore areas. Total acreage of wetlands is 174,683,900 acres, which is 43.3 percent of Alaska’s surface area. In the lower 48 states, wetlands only occupy 5.2 percent of the surface area. See FWS, Status of Alaska Wetlands at 18-19 (1994), <https://www.fws.gov/wetlands/documents/status-of-alaska-wetlands.pdf>.] As such, the Pebble Project’s effects on wetlands would not have any discernible effect on overall wetlands habitat availability and ecosystem function in the region.

Indeed, the FEIS found that the project “would not be expected to have a measurable effect on fish numbers and result in long-term changes to the health of the commercial fisheries in Bristol Bay.” [FEIS at ES 87.] Moreover, as discussed above, the FEIS overstates impacts to wetlands. While the FEIS

estimated that the project would have direct, permanent impacts to 6% of the wetlands/other waters within the HK watershed, the more accurate percentage of the HK watershed impacted is actually 4.8%. Thus, EPA's supposition that FEIS conclusions on impacts "should be viewed as minimum estimates" is baseless.

EPA Response

EPA's findings in the PD are consistent with its regulations for this stage of the CWA Section 404(c) review process (see 40 CFR 231.3). Information and analysis in the FEIS and ROD support EPA's findings in the FD and both documents are cited extensively by the FD. Section 404(c) of the CWA requires EPA to make a determination that certain discharges of dredged or fill material in certain waters of the United States would result in unacceptable adverse effects on one or more of a set of enumerated resources, including fishery areas (including spawning and breeding areas). In this case, the unacceptability findings in the FD include both quantitative and narrative content. For example, Section 4.2.3 of the FD describes the adverse effects on anadromous fishery areas that would result from the permanent loss of approximately 2,108 acres of wetlands and other waters that provide ecological subsidies for downstream spawning and rearing habitat for Chinook, Coho, and Sockeye salmon. Section 4.2.3 describes how this impact represents significant damage to fishery areas in the SFK and NFK watersheds and how this level of loss would also result in such adverse effects if it occurred elsewhere in the SFK, NFK, or UTC watersheds.

Attachment 1 of Appendix B in the FD addresses FEIS conclusions that appear to be inconsistent with the FD. See also EPA's responses to comments 4.B.41, 4.B.42, 4.C.1, 4.C.5, and 4.C.6.

4.E.2 Alaska Department of Environmental Conservation (Doc. #0814, p. 28-29)

iii. Finding #3: "The loss of approximately 2,113 acres (8.6 km²) of wetlands and other waters that support anadromous fish streams." [PD at 4-3.]

Region 10's third finding is the loss of 2,113 acres of "wetlands and other waters" expected to result from the proposed mine (before mitigation is taken into account). [PD at 4-23.] Region 10 justifies this finding on the basis that these wetlands and other waters provide "ecological subsidies to downstream anadromous fish streams." [PD at 4-23.] In support, Region 10 generally explains that "all wetlands are important to the greater function and value of ecosystems and subsistence cultures they support" [PD at 4-23 (emphasis added).] before stating that changes in flow in the North Fork Koktuli river and Upper Talarik Creek resulting from mine operations "have the potential" to change the hydrologic connectivity of off-channel habitats and associated wetlands and further, that these changes "also can affect" nutrient availability, the downstream transport of invertebrates, and available habitat for benthic macroinvertebrate production. [PD at 4-24.] Region 10 draws the general conclusion that these effects

will “thereby adversely affect[] overall productivity of down gradient anadromous fish streams and streams that support anadromous fish streams.” [PD at 4-24.]

First, Region 10 fails to articulate the connection of these losses to a fishery. The “wetlands and other waters” are not within the shaded areas on page 3-59. They are not within the areas specified in the FEIS definition. Nor do they fall within the Guidelines or dictionary definitions, both of which require the presence of harvestable fish.

Second, Region 10 fails to explain why mitigation cannot be taken into account. The federal government has a system in place to mitigate wetland loss: compensatory mitigation. Region 10’s cursory assessment of PLP’s proposed compensatory mitigation plan, [PD at 4-67.] and suggestion that it need not consider compensatory mitigation in the first place (but will do so gratuitously), inadequately addresses this issue.

Third, Region 10 asserts that loss of these wetlands and other waters “would result in loss of . . . habitat . . . to abutting and downstream waters” but admits that it has no data to support this statement:

[w]etlands that are contiguous with and adjacent to anadromous fish streams . . . have not yet been surveyed at spatial and temporal scales sufficient to document periodic use by salmon. [PD at 4-23, 4-26.]

Region 10 is confident that the loss of these wetlands and other waters would result in loss of fish habitat even though the wetlands in question “have not yet been surveyed[.]” Clearly, then, Region 10 is making assumptions, not drawing scientifically sound conclusions. “The mere fact that an agency is operating in a field of its expertise,” of course, does not excuse the requirement that an agency’s reasoning be “rational, clear, and complete[.]” [NCAP, 544 F.3d at 1052.]

Fourth, Region 10 has not demonstrated “significance.” Assuming Region 10’s estimation of 2,113 acres is accurate, [ADF&G has concerns with Region 10’s improper extraction of data points from those collected within the proposed mine’s footprint—which used a much finer scale than the National Hydrographic Dataset (“NHD”) scale, which uses a 1:63,360 or larger scale in Alaska—to areas outside of the footprint. This is improper because the data collected within the mine footprint is specific to the mine; extrapolating that data at that scale must be justified, which Region 10 fails to do. Use of data from the much coarser NHD would result in a lower percentage of wetlands and streams affected than the figures Region 10 calculates.] this amount constitutes 0.01% of the total acreage of the Nushagak and Kvichak watersheds, [Calculations based on data sourced from USGS National Map Viewer, retrieved from <https://apps.nationalmap.gov/viewer/> (June 19, 2022). All data rounded to whole numbers.] and 0.008% of the total acreage of the Bristol Bay area. [FEIS at 3.16-1.] Region 10 has not appropriately contextualized the loss of 2,113 acres. Without appropriate contextualization, its degree of this loss’s effect on fisheries cannot be ascertained. Using Region 10’s preferred denominator, the entirety of Bristol Bay, this loss (0.008%) is demonstrably insignificant.

Fifth, the speculative nature of these finds fall far short of the “will” standard that § 404(c) requires. [See Section 3 of the Legal Impediments portion of this Letter for further explanation.]

The third finding cannot serve as the basis of a § 404(c) veto.

EPA Response

Regarding the commenter's first point, EPA does not and need not connect these wetlands and other waters to the areas identified on Figure 3-17 of the PD (PD Page 3-59), the areas specified in the FEIS to which the commenter refers, or the definitions to which the commenter refers. The 2,108 acres of wetlands and other waters that support anadromous fish streams are all located upgradient of and therefore drain to anadromous fish streams. The FD indicates that for the purposes of this FD, anadromous fishery areas include anadromous fish streams. See EPA's response to comment 4.A.1.

Regarding the commenter's second point, EPA does take mitigation into account (see Section 4.3.2 and Appendix C of the FD). The commenter describes the PD's assessment of compensatory mitigation as " cursory" but identifies no specific deficiency regarding that assessment in this comment.

Regarding the commenter's third point, that they believe a phrase in the PD suggests that EPA "has no data to support" the PD's findings regarding the loss of wetlands and other waters: the text cited by the commenter has been revised in the FD to provide necessary clarification that addresses this point (see Section 4.2.3 of the FD).

Regarding the commenter's fourth point, see EPA's response to comment 4.E.1. The commenter does not explain what they mean by "extrapolating that data at that scale." The FD identifies all of its data sources and explains how it considers each source of data.

Regarding the commenter's fifth point, EPA's findings in the PD are consistent with its regulations for this stage of the Section 404(c) review process (see 40 CFR 231.3).

4.E.3 Anchorage Audubon Society (Doc. #0864, p. 1)

Pebble's mining operations would have unacceptable impacts on wetlands near the mine, the Kaktuli River,

EPA Response

See Section 4.2.3 of the FD and EPA's response to comment 1.A.1.

4.E.4 Bristol Bay Regional Seafood Development Association (BBRSDA) (Doc. #2062, p. 8)

The EPA has itself already recognized this. The May 28, 2020 letter from Regional Administrator Hladick states that discharges associated with dredged or fill material for the LEPDA (North Road Only) "may well contribute to the permanent loss of 2,292 acres of wetlands and other waters..., including 105.4 miles of streams, along with secondary impacts to 1,647 acres of wetlands and other waters, including

80.3 miles of streams, associated with fugitive dust deposition, dewatering, and fragmentation of aquatic habitat.”

EPA Response

See EPA’s response to comment 1.A.1.

4.F Adverse Effects from Changes in Streamflow in Downstream Anadromous Fish Streams

4.F.1 Alaska Department of Environmental Conservation (Doc. #0814, p. 29-30)

iv. Finding #4: “Adverse impacts on at least 29 additional miles (46.7 km) of documented anadromous fish streams resulting from greater than 20% changes in average monthly streamflow.” [See PD at § 4.2.4.]

Region 10’s fourth finding is based on changes in streamflow that it predicts will result from the proposed mine plan. Region 10 conducted an evaluation of the streams downstream from the proposed mine and concluded that the streamflow in 29 miles of downstream anadromous fish streams will be altered by 20% or more, as measured by the monthly averages. This is significant, Region 10 explains, because a 2012 study (Richter et al. 2012) [Richter, B. D., M. M. Davis, C. Apse, and C. Konrad, A presumptive standard for environmental flow protection, River Research and Applications, 28:1312–1321 (2012) (“Richter et al (2012)”)]. “found that regardless of geographic location, daily streamflow alterations of greater than 20 percent can cause major changes in the structure and function of streams.” [PD at 4-29.]

As a preliminary matter, Region 10’s approach to its fourth finding more closely approximates the type of reasoning required to justify an unacceptability finding. Unlike the first three findings, which make general statements about ill-defined areas of watersheds using vague and speculative terminology, Region 10’s fourth finding follows a methodology and relies on an evaluation of the actual streams that it believes stand to be adversely affected. This finding thus provides the public with metrics to use and substance to critique.

Region 10, however, has still failed. It has failed to tie the streamflow changes to a fishery, and has failed to explain the significance of these streamflow changes. As with the other three findings, properly contextualized, there is no demonstrable loss of or damage to any of the seven shaded areas identified in the map on page 3-59. Considered in the context of Bristol Bay, this loss constitutes <0.01% of all streams in the Bristol Bay region—an insignificant amount.

EPA Response

See EPA’s response to comment 4.A.1 regarding the definition of fishery areas for the purposes of the FD. Section 4.2.4 of the FD describes the significance of such streamflow

changes on anadromous fish streams, and this section was updated in the FD to clarify how discharges of dredged or fill material associated with developing the Pebble deposit that are located in waters of the United States in the SFK, NFK, and UTC watersheds and lead to streamflow changes greater than 20 percent of baseline average monthly streamflow in at least 29 miles of anadromous fish streams would result in unacceptable adverse effects. The commenter repeatedly raises concerns regarding the caption for Figure 3-17 of the PD (PD Page 3-59) because of its references to fisheries. The caption for this figure has been clarified in the FD. EPA does not and need not connect the anadromous fish streams with adverse streamflow changes to the areas identified on Figure 3-17 of the PD (PD Page 3-59).

4.F.2 Alaska Department of Environmental Conservation (Doc. #0814, p. 29-31)

iv. Finding #4: “Adverse impacts on at least 29 additional miles (46.7 km) of documented anadromous fish streams resulting from greater than 20% changes in average monthly streamflow.” [See PD at § 4.2.4.]

Region 10’s fourth finding is based on changes in streamflow that it predicts will result from the proposed mine plan. Region 10 conducted an evaluation of the streams downstream from the proposed mine and concluded that the streamflow in 29 miles of downstream anadromous fish streams will be altered by 20% or more, as measured by the monthly averages. This is significant, Region 10 explains, because a 2012 study (Richter et al. 2012) [Richter, B. D., M. M. Davis, C. Apse, and C. Konrad, A presumptive standard for environmental flow protection, *River Research and Applications*, 28:1312–1321 (2012) (“Richter et al (2012)”)]. “found that regardless of geographic location, daily streamflow alterations of greater than 20 percent can cause major changes in the structure and function of streams.” [PD at 4-29.]

(...)

A closer look reveals numerous problems with Region 10’s science. Region 10’s analysis broadly “targets the entire aquatic ecosystem,” rather than any identifiable “fisheries.” Scientific studies supporting a 404(c) veto must be designed to produce data about the specific resources affected.

Region 10’s premise—that streamflow alterations of greater than 20% cause major changes in the structure and function of streams so are therefore “significant” to the health of the rivers system— has two problems. First, the premise reflects a standard that appears to be a relatively novel one that is not widely accepted in the scientific community. [Another peer-reviewed scientific article, published by Pahl-Wostl et al (2013) after the Richter et al. 2012 study, explains that “the field [of environmental flows study] is characterized by a limited transferability of insights, due to the prevalence of specific case-study analyses and a lack of research on the governance of environmental flows[.]” Claudia Pahl-Wostl et al., *Environmental flows and water governance: managing sustainable water uses*, *Current Op. in Env’l Sustainability*, 5:3-4, 341–51 (2013) (“Pahl-Wostl (2013)”)]. Pahl-Wostl et al. “identify a clear

need for a more systematic approach to the determination of environmental flow requirements” than those currently existing, including in the 2012 Richter article, which is cited.] At minimum, Region 10 must justify why a percentage-based flow study model is trustworthy—as opposed to, for example, a model based on a minimum-flow threshold or a statistically based standard [See Richtner et al. (2012).]—and must address and rebut the critiques of its selected model in the scientific literature. Region 10’s failure to vet this methodology undermines the credibility of its conclusions.

Second, Region 10 fails to fully and accurately replicate the standard before purporting to apply it. The authors of the study that introduced the 20% standard have explained that this standard “is intended for application only where detailed scientific assessments of environmental flow needs cannot be undertaken in the near term.” [Richter et al. (2012).] This is because, the study authors explain, “[t]he allowable degree of alteration from the natural condition can differ from one point to another along the same river.” Notably, other estimates of permissible alterations are as high as 50%. [Richter et al. (2012) (citing Smakhtin et al. (2004)).] Region 10 still has ample time to follow the authors’ recommendation, and develop a detailed scientific assessment of flow needs tailored to each stream that may be affected, considering that the Corps denied the § 404 permit at issue, so there is no time pressure to act quickly. Region 10 has simply lifted the 20% standard from one study and, without explanation, asserted that this standard should govern its assessment of downstream effects of the streams at issue here. This crude methodology falls far short of what is required to justify a § 404(c) veto, which must be predicated on findings that adverse effects “will” be caused by discharges into WOTUS from point sources associated with a project.

EPA Response

EPA disagrees with the commenter’s assertion that EPA’s assessment of specific, quantified impacts to streams that currently support anadromous fish, including as spawning and rearing areas, falls short of what is necessary to support a determination that certain discharges of dredged or fill material will result in unacceptable adverse effects to those fishery areas, including spawning areas. As defined in EPA’s regulations, an unacceptable adverse effect means an impact on an aquatic or wetland ecosystem which is likely to result in significant loss of or damage to fisheries. As discussed in the FD, the predicted flow changes are certain, quantified impacts to the aquatic ecosystem (i.e., stream reaches below the mine site), which are themselves anadromous fishery areas, and which are likely to result in significant damage to fisheries if a mine at the Pebble deposit was developed. See also EPA’s response to comment 4.A.1.

EPA disagrees with the commenter’s characterization that it has “lifted” a standard from one study and applied it without explanation. On the contrary, EPA made an independent determination about the significance of the predicted impacts to the downstream anadromous fishery areas based on a broad review of the scientific literature and scientific consensus regarding the fundamental importance of the hydrologic regime for sustaining naturally dynamic riverine ecosystems and the species they support. EPA

applied its own expertise to evaluate the ecological consequences of the predicted streamflow changes on the specific life history needs of the Pacific salmon species in the affected streams, as well as the ecological processes of the SFK, NFK, and UTC. See Section 4.2.4 of the FD.

The commenter does not present any evidence suggesting that flow changes of the magnitude predicted for the 2020 Mine Plan would not degrade anadromous habitat in the downstream reaches. The commenter merely points out that there are multiple approaches to determining environmental flow requirements and that EPA “must justify why a percentage-based flow study model is trustworthy.” Section 4.2.4 of the FD has been updated to provide additional clarification on selection of and application of the methodology EPA used to identify anadromous fish streams that would be subject to adverse effects under the 2020 Mine Plan. As explained in Section 4.2.4.1 of the FD, EPA did not directly apply the Sustainability Boundary approach proposed by Richter et al. (2012), which seeks to avoid any changes to the natural flow regime greater than 20 percent of daily average streamflow. Instead, EPA uses percent change from average monthly flows to identify the specific anadromous fish streams where adverse effects from streamflow changes would occur under the 2020 Mine Plan, which are those streams where modelled streamflow changes would be persistent and large enough to result in a shift in the average monthly streamflow of more than 20 percent. While EPA’s approach to identify these fish streams could be characterized as a percent of flow approach, use of the 20 percent threshold provides a broad, generalized indicator merely to identify the anadromous fish streams where the most dramatic changes from natural conditions would occur. Use of this method to identify anadromous fish streams where the most dramatic changes from natural conditions would occur provides a reasonable minimum approximation of the extent of impacts from streamflow changes under the 2020 Mine Plan.

The anadromous fish streams where the most dramatic changes from natural conditions would occur under the 2020 Mine Plan are summarized in Section 4.2.4.3 of the FD. Section 4.2.4.4 characterizes the specific ways anadromous fishes use these streams, including as spawning and rearing areas, which EPA has identified for different anadromous fish species. Section 4.2.4.5 summarizes the adverse effects to anadromous fish habitat that would result from streamflow changes greater than 20 percent of average monthly streamflow, which are estimated to occur in at least 29 miles (46.7 km) of anadromous fish streams as a result of discharges of dredged or fill material associated with the construction and routine operation of the 2020 Mine Plan.

EPA agrees it should “address and rebut the critiques of its selected model in the scientific literature” but the commenter doesn’t identify any such critiques. Pahl-Wostl et al. (2013) referenced in the footnote is not a critique of Richter et al. 2012 or of using the alteration of a key hydrologic parameter (e.g., monthly mean streamflow) as an indicator

of ecological impact. To the contrary, Pahl-Wostl et al. (2013) agree with Richter et al. (2012) about the importance of natural flow regimes to habitat-forming processes and biotic integrity. Further, Pahl-Wostl et al. (2013) presents several frameworks “to predict ecological responses to particular types of flow alterations” that align with EPA’s approach in the FD.

Neither of the approaches the commenter appears to suggest to determine environmental flow requirements (i.e., minimum-flow or statistically based approaches) are inherently protective of the natural flow regime. EPA agrees with Pahl-Wostl et al. (2013) that the minimum-flow approaches referenced by the commenter are “too simplistic to support complex flow-dependent ecosystem functions.” As explained by Richter et al. (2012), minimum-flow standards were first developed to protect water quality and do not protect aquatic habitats or maintain ecological processes. Richter et al. (2012) also explain that statistically based standards are an approach to managing the cumulative effects of multiple water withdrawals and dam operations on the flow regime. Aquatic ecologists have long recognized that a much fuller spectrum of flow conditions (e.g., base flows, high flows, flood flows) is needed to sustain native species than is provided by instream flow models, such as the Physical Habitat Simulation System (PHABSIM) model used to evaluate streamflow in the FEIS (Postel and Richter 2003). Richter et al. (2012) was drafted precisely because of the widely recognized limitations of these approaches.

In Section 4.2.4 of the FD, EPA has provided a comprehensive review and analysis of the operations of the 2020 Mine, available streamflow and fish habitat information, and peer-reviewed literature to evaluate the potential adverse effects that streamflow changes greater than 20 percent can have on anadromous fishery areas. EPA disagrees that additional information or further site-specific information was necessary to evaluate adverse effects on anadromous fish streams from streamflow changes. See EPA’s responses to comments 3.A.3, 4.D.2, 4.D.3, and 4.F.5 and Appendix B of the FD for more discussion about why EPA has sufficient information to make the required finding.

4.F.3 Alaska Department of Environmental Conservation (Doc. #0814, p. 29-31)

iv. Finding #4: “Adverse impacts on at least 29 additional miles (46.7 km) of documented anadromous fish streams resulting from greater than 20% changes in average monthly streamflow.” [See PD at § 4.2.4.]

(...)

Notably, Region 10 has failed to address the FEIS’s determination that any alteration in flows would be negligible below the confluence with the North Fork Kaktuli and South Fork Kaktuli rivers. [FEIS at 4.6-

3.] This is important because the closest shaded area identified on page 3-59 (a fisheries map) is about 25 miles downstream from that point.

If Region 10 is concerned with streamflow alterations based on discharges, the appropriate avenue to address this is through the permitting process, and working with ADF&G. Shutting down the entire project in perpetuity is not the solution.

The fourth finding cannot serve as the basis of a § 404(c) veto.

EPA Response

EPA agrees that the FEIS concluded that streamflow alterations would be negligible in the Koptuli River below the confluence of the NFK and SFK (see Section 4.2.4.3 of the FD). EPA's determination of unacceptable adverse effects is not based on predicted streamflow changes within the Koptuli River downstream of the confluence of the NFK and SFK. The fishery areas relevant to this CWA Section 404(c) action are located in the SFK, NFK, and UTC watersheds. See EPA's response to comment 4.A.1 regarding EPA's definition of "fishery areas" or "fisheries" in this action. See also Appendix B (Section B.3) for additional information pertaining to the FEIS assessment of streamflow changes. Finally, to the extent the commenter raises concerns regarding the caption for Figure 3-17 of the PD (PD Page 3-59) because of its references to fisheries, EPA reiterates that it has clarified the caption for this figure in the FD. EPA does not and need not connect the anadromous fish streams with adverse streamflow changes to the areas identified on Figure 3-17 of the PD (PD Page 3-59) because, as repeatedly stated in the PD and FD, EPA's determination is based on the unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

With respect to the commenter's contention that "the appropriate avenue to address [EPA's concerns related to streamflow] is through the permitting process, and working with ADF&G" and that "[s]hutting down the entire project in perpetuity is not the solution," see EPA's responses to comments 2.C.1 and 2.C.8

4.F.4 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 29-31)

C. Changes in Streamflow

EPA asserts its belief that the 2020 Mine Plan will result in streamflow alterations greater than 20 percent of average monthly streamflow in approximately 29 miles of anadromous fish streams, which in turn "could have unacceptable adverse effects on anadromous fishery areas in the SFK and NFK watersheds." [Revised Proposed Determination at 4-28.] Instead of generating new data to demonstrate the impacts EPA alleges, EPA relies on speculation: "it is likely that the streamflow change analysis generally underestimates the extent to which streamflow in the SFK and NFK watersheds would be affected." [Id. at B-10.] Such supposition is not sufficient to support action under 404(c).

This is especially true where such suppositions are contracted by existing science. Extensive water modeling, based on years of data collection, demonstrates the Pebble Project would not harm the fishery or water resources of Bristol Bay. The FEIS states that flow rate changes would not be measurable downstream of the mine:

Therefore, the intensity of the impacts to surface water resources would be generally expected to result in changes in water quantity, likely within the limits of historic and seasonal variation. [FEIS at ES 63.]

The duration of impacts to surface water hydrology would vary from temporary to permanent. The geographic extent of the impact on the NFK and the SFK rivers may extend just below the confluence of the two rivers. After the flows combine at the confluence of the NFK and SFK rivers, discernable changes in flow would be unlikely and are expected to be within historic and seasonal variation in the Kuktuli River. [Id. at 4.16-2.]

With few exceptions, predicted changes in habitat in the modeled portion of the upper mainstem Kuktuli River (upstream of the Swan River) are near zero or positive, suggesting that project effects from flow changes would not negatively impact reaches downstream of the NFK and SFK confluence, or in UTC. [Id. at 4.24-13.]

EPA Response

Information and analysis in the FEIS and ROD support EPA's findings in the FD and both documents are cited extensively by the FD. Attachment 1 in Appendix B of the FD addresses FEIS conclusions that appear to be inconsistent with the FD.

Furthermore, Section 4.2.4 and Appendix B (Section B.3) of the FD were revised to clarify the meaning of the conclusion from page 4.16-2 of the FEIS. This FEIS conclusion is indicating that changes in streamflow would only be indiscernible from historic and seasonal variation after the SFK and NFK combine in the Kuktuli River. EPA's FD does not base any of its conclusions on effects in the Kuktuli River; rather, it concludes that development of the 2020 Mine Plan would result in unacceptable effects to fishery areas upstream of the confluence of the NFK and SFK (see Section 4 of the FD). Because the NFK flows approximately 23 miles downstream from the mine site before reaching the SFK confluence and the SFK extends approximately 38 miles from the mine site in the headwaters before reaching the NFK confluence, this FEIS conclusion suggests that up to a combined 61 miles of anadromous fish habitat in the SFK and NFK may experience either temporary or permanent changes in streamflows that exceed natural historic and seasonal variation.

4.F.5 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 29-31)

C. Changes in Streamflow

EPA asserts its belief that the 2020 Mine Plan will result in streamflow alterations greater than 20 percent of average monthly streamflow in approximately 29 miles of anadromous fish streams, which in

turn “could have unacceptable adverse effects on anadromous fishery areas in the SFK and NFK watersheds.” [Revised Proposed Determination at 4-28.] Instead of generating new data to demonstrate the impacts EPA alleges, EPA relies on speculation: “it is likely that the streamflow change analysis generally underestimates the extent to which streamflow in the SFK and NFK watersheds would be affected.” [Id. at B-10.] Such supposition is not sufficient to support action under 404(c).

This is especially true where such suppositions are contracted by existing science. Extensive water modeling, based on years of data collection, demonstrates the Pebble Project would not harm the fishery or water resources of Bristol Bay. The FEIS states that flow rate changes would not be measurable downstream of the mine:

(...)

Rather than attack the substance of these conclusions, EPA attempts to undercut the FEIS findings on streamflow by questioning the use of average monthly changes. However, as EPA itself admits, “hydrologists consider monthly flows to be a critical component of a stream’s hydrograph.” [Revised Proposed Determination at B-6.]

EPA also attempts to discount the FEIS findings on streamflow by questioning the watershed model assumptions and inputs. [Id. at B-8 to B-10.] However, as demonstrated in the attached response from Knight Piesold Consulting, [Ex. 3, Knight Piesold Consulting, Pebble Project – Response to EPA Comments on Proposed Determination (June 22, 2022) (“Knight Piesold Report”).] none of EPA’s critiques of the water modeling hold up to examination. For example, EPA asserts that “[t]he baseline watershed model was configured and calibrated prior to development of the groundwater model (MODFLOW) and was not updated to include any additional geologic or water table elevation data collected and used in the groundwater model.” [Revised Proposed Determination at B-8.] As explained in the Knight Piesold Report, however, EPA’s statement is incorrect:

The baseline watershed model was updated in 2019 in parallel with the numerical groundwater model update, and the two modelling groups worked collaboratively. The baseline watershed model updates consider the same hydrogeologic and hydrologic data that were incorporated into the groundwater model. ... The results from both models were combined to take advantage of the strengths of each model and thereby provide a good representation of the hydrology and hydrogeology of the Project area that is appropriate for understanding the potential impacts of mine development on the hydrologic system. [Knight Piesold Report at 1-2. The baseline watershed model was calibrated to an extensive dataset of continuous records of surface flows at multiple nodes, and variations in flow conditions were modelled using a long-term (76-year) climate record and consideration of a very wide range of potential surficial conditions.]

EPA also asserts that “streamflow changes due to well pumping and groundwater table depression are not considered,” but this statement is also incorrect. [Revised Proposed Determination at B-8.] As Knight Piesold explains, all surface water and groundwater flows in the mine footprint that are not diverted by non-contact water diversions were modeled as captured by the mine and unavailable for downstream

release until treated. In addition, “[p]otential impacts of groundwater table depression extending outside the mine site boundary were incorporated into the watershed model.” [Knight Piesold Report at 2.]

EPA also attempts to question the numerical groundwater flow modeling undertaken by BGC Engineering USA Inc. (“BGC”). But EPA’s critiques of that model are similarly unfounded. EPA asserts that the “volume of groundwater pumping and the extent of groundwater table drawdown are likely underestimated for several reasons.” [Revised Proposed Determination at B-9.] However, as provided in the attached response from BGC, [Ex. 4, BGC Engineering USA Inc., Groundwater Enquiry Related to 2022 Proposed Determination for Pebble Deposit Area (June 23, 2022).] EPA’s assertion is incorrect. BGC developed a robust three-dimensional numerical groundwater flow model for the Pebble Project. [See *id.* at 1.] In addition to groundwater flows reporting directly to the pit, active groundwater extraction was simulated using a combination of perimeter and in-pit wells. [*Id.* at 2.] The range of potential flows to the open pit were explored through sensitivity analysis, with specific sensitivity scenarios selected to estimate the “upper bound of plausible extraction rates” at the request of USACE. [*Id.*] In addition, the potential impacts of mine site facilities other than the pit were considered where appropriate. [*Id.*] EPA’s speculation that the groundwater flow model underestimates drawdown is baseless.

These are just a few examples of the multiple inaccuracies relied upon by EPA to try to undermine the FEIS conclusions that streamflow changes would not materially impact fisheries. EPA admits that PLP has developed a “significant amount of baseline environmental data,” including streamflow data. [Revised Proposed Determination at B-7.] However, EPA discounts this data, baldly asserting “there is no reason to expect that these data fully capture how much these factors vary over longer time scales and more finely resolved spatial scales, which means that FEIS conclusions ... based on these data should be viewed as minimum estimates.” [*Id.* at B-8.] Such unsupported criticism is insufficient to meet EPA’s burden of proof under the CWA. The baseline data is incontrovertibly the most robust data set ever compiled on the Bristol Bay region. If EPA believes that the actual aquatic resource impacts from streamflow changes cannot be adequately assessed based on the current data set, EPA must generate new data that demonstrates actual adverse impacts to fisheries before any 404(c) action can be pursued. It cannot simply rely on speculation and conjecture as a basis for its Section 404(c) action.

EPA Response

Sections 4.2.4 and Appendix B (Sections B.2, and B.3) of the FD have been revised in the FD to provide additional clarification on EPA’s concerns with the use of average monthly flows to evaluate the potential for adverse effects on fishes from the construction and routine operation of a mine at the Pebble deposit. EPA concluded that despite these shortcomings, the streamflow change estimates documented in the FEIS provide a reasonable minimum approximation of the streamflow impacts expected to result from the 2020 Mine Plan. Even these minimum estimates of changes in average monthly flows, over the stream lengths documented in the FEIS, would affect the physical, chemical, and

biological characteristics of these streams and constitute an unacceptable adverse effect on fishery areas.

EPA appreciates the clarifications provided in Exhibit 3 from PLP (Knight Piésold 2022). Appendix B (Sections B.2 and B.3) of the FD have been updated from the PD in response to this additional information provided. More specifically, these sections have been updated to provide clarification on the few ways the baseline watershed model contributes to the FEIS providing an underestimate or underprediction of the predicted impacts that the 2020 Mine Plan would have on aquatic resources in the SFK, NFK, and UTC watersheds.

EPA appreciates the clarifications provided in Exhibit 4 from PLP (BGC Engineering USA Inc. 2022). Appendix B (Section B.3) of the FD has been updated from the PD in response to this additional information, to clarify how the groundwater model contributes to the FEIS providing an underestimation of the predicted impacts that the 2020 Mine Plan would have on aquatic resources in the SFK, NFK, and UTC watersheds.

EPA agrees that the baseline data compiled and used in the FEIS are the most robust data set available for these watersheds. Information and analysis in the FEIS and ROD support EPA's findings in the FD and both documents are cited extensively by the FD. As explained in Section 4.2.4 and Appendix B (Sections B.2 and B.3) of the FD, conclusions about the long-term impacts on aquatic resources resulting from the 2020 Mine Plan based on these data should be viewed as minimum estimates—and, as detailed in Section 4.2.4, even these minimum estimates constitute an unacceptable adverse effect on fishery areas.

4.F.6 The Pebble Limited Partnership (PLP) (Doc. #1912, Exhibit 2, p. 17-19)

EPA asserts that a 20% change in average monthly streamflow (Section 4.2.4) could have adverse effects on anadromous fishery areas. Yet, they provide no context on how this might occur for these streams based on existing site-specific data, and in fact, review of the data presented in the EIS suggests an alternative conclusion.

Excluding the tributaries that would be lost to the mine footprint, the majority of stream flow changes approaching or exceeding the EPA impact threshold of +/- 20% are in the NFK and are due to release of mitigation flows during low flows in winter. As described in Section 3.16 of the EIS, the natural condition for both the upper NFK and middle SFK includes very low flow or dewatered reaches (USACE 2020). These reaches are dewatered during most winters and some summers.

Additionally, review of potential stream flow impacts, with the mine operating and including mitigation flow (EIS Section 4.16), indicates that the majority of all stream flow changes would occur during low flow, winter conditions (USACE 2020). The stream reaches with flow changes would be higher in the system, upstream of the areas of highest salmon use. Further, the very low flow conditions that occur

naturally in these reaches may in fact already be limiting salmon production as compared to reaches downstream. In that case, it is likely that juvenile salmon rearing in these low flow reaches are subject to greater natural winter mortality related to very low water temperature and ice conditions. Further, any redds within these channels could also be affected by ice scouring of the riverbed under natural conditions. Thus, it is reasonable to suggest that increasing the low flow during winter may result in ecological benefit to salmon and other aquatic species overwintering in the affected reaches.

This idea, that the change in flow greater than 20% could benefit aquatic species, is further supported by the results of the Instream Flow Modeling presented in EIS Appendix K4.24 (USACE 2020). The Proposed Determination dismisses the results of the flow-habitat modeling as not suitable because it is focusing “on a specific species or set of species (e.g., salmon) that may have different habitat requirements than other biota in the natural system,” while their chosen metric of percent change in stream flow targets the entire aquatic ecosystem. In light of this dismissal, it is relevant to note a few considerations about the flow habitat modeling that was completed for the project.

1. Instream Flow Incremental Methodology (IFIM) habitat modeling is a scientific method that has been approved and accepted by state and federal regulatory agencies for decades and continues to be applied to assess habitat impacts through today.
2. The PHABSIM model developed for the Pebble Mine was developed with site specific data including channel geometry, hydrology, and species-specific measurements that we used to determine habitat suitability of the eight fish species modeled in the NFK, SFK, UTS and upper Koktuli River.
3. As stated in the EIS (Section 4.24), the PHABSIM model results indicate that under the vast majority of flow conditions for all species and lifestages, the changes in stream flow will increase fish spawning and rearing habitats.

From EIS (USACE 2020):

“Although operations would be expected to change the availability of surface flows to area streams, releases of surplus treated water from the mine site into the NFK, SFK, and UTC would be optimized to benefit priority species and life- stages for each month and stream (Table 4.24-2). Reductions in streamflow would, in some cases, result in a predicted increase in habitat suitability (as measured in acres) for some species and life-stages, particularly those that show preferences for slower water velocities; for example, the juvenile life- stages of most species.

Most changes would be expected to increase suitable habitat (see Table K4.24- 1), partially because of the WTP treated water discharge into the mainstem reaches (or tributaries immediately upstream of the mainstems) of the NFK, SFK, and UTC, according to the species and life-stage priorities listed in Table 4.24-2. Figure 4.24-2 shows that 81 to 90 percent of expected changes in suitable spawning habitat would be positive, or within 2 percent of pre-mine conditions, with more predicted increases in habitat than decreases, for both anadromous and resident fish species in an average water year scenario. All predicted decreases in suitable habitat exceeding 10 percent are from tributaries NK 1.190 and SK 1.190.”

More detailed consideration of all the modeling results presented in Appendix K4.24 of the EIS indicates that when considering stream habitat outside of NK 1.190 and 1.200, there are only a limited number of species, lifestage, water year, and stream reach combinations where the change would potentially reduce fish habitat (USACE 2020). As presented in EIS Table K.4.24-1, out of 420 possible combinations, the model predicted a loss of habitat only 17 times. This suggests not only the potential for stream flow benefits to these seven fish species (4 salmon and 3 resident species), but also all of the associated benefits to the aquatic system that come from increased fish productivity and increases in suitable spawning and rearing habitat over the natural conditions.

The PHABSIM modeling results were based on actual data collected in the Project Area. In contrast, EPA's theoretical threshold of a 20% change in stream flow was taken from a paper that provides recommendations regarding "presumptive flow standards" based on the ecological principal that the further the flow deviates from the historic natural flow, the greater the impact to the ecosystem (Ritcher et al. 2011). The case studies used to justify the standard were all from degraded river systems in the lower 48 and in Europe. The relevance of this citation for application in this Alaska river with detailed natural flow data available is questionable, at best. The authors themselves state that their presumptive standard is intended for use only where detailed scientific assessments cannot be completed in a timely manner. EPA does not explain why they chose to ignore the authors' admonition.

In the case of the headwaters of the Kuktuli River system, a scientific assessment was conducted by Pebble Limited Partnership (PLP) and was presented in the EIS Appendix I (USACE 2020). The Proposed Determination simply chose to ignore these data and analyses. Furthermore, when discussing management implications, Richter et al note that the first step in properly applying their standard is development of a model to estimate natural and depleted flows on a daily time step. While the IFIM model presented in the EIS is on a monthly time step for summary purposes, a daily time step model could easily have been completed using the extensive data set developed by PLP.

EPA Response

EPA agrees that the FEIS describes low flow conditions in the upper NFK at gaging station NK100C, which ranged from 8 to 22 cfs during the 8-year period of record, but EPA disagrees that Section 3.16 of the FEIS discusses or provides evidence that any reaches of the NFK or SFK are dewatered downstream of the mine site under natural conditions. Furthermore, the FEIS does not discuss or provide evidence that the "middle SFK includes very low flow or dewatered reaches." Section 3.16 only describes low flows in the upper SFK river at gaging station SK100F, where it indicates this station "is in the upper reaches of the SFK River, approximately 29 miles upstream of the NFK River confluence" (USACE 2020a: Page 3.16-10) and "is roughly 2.5 miles south of the mine site" (USACE 2020a: Page 3.16-10).

EPA considered the PHABSIM analysis included in the FEIS when developing the PD, but had concerns about how the analysis was applied. Simply put, the FEIS assumed that PHABSIM generated changes in river depth and velocity adequately capture effects on

fish habitat, whereas EPA’s approach incorporates ecological and geomorphic considerations associated with streamflow alteration (see Section B.4 of Appendix B in the FD for a more detailed discussion of EPA’s concerns with the FEIS analysis using PHABSIM and Attachment 1 of Appendix B in the FD for EPA’s concerns with FEIS conclusions, some of which pertain to the FEIS PHABSIM analysis). EPA also has concerns about the “optimization” of streamflows for priority species (see Sections B.3.2 and B.4.3 of Appendix B in the FD). EPA’s rationale for using the 20 percent value is explained in Section 4.2.4 of the FD.

The commenter states that “...the majority of streamflow changes approaching or exceeding the EPA impact threshold of +/- 20 percent are in the NFK and are due to release of mitigation flows during low flows in winter.” Although the FEIS assumes increases in winter flows would increase fish habitat use, this assumption is not supported by available data at the site. Predicting how flow changes would affect winter habitat is particularly challenging given lack of streamflow measurements collected during winter months, lack of fish habitat use information during winter months, and the complex interactions of groundwater and surface water that would be disrupted due to streamflow alterations, with potential implications for winter ice-free habitat and water temperatures. Aquatic biota are adapted to the natural flow regimes of their habitats, and streamflow changes occurring under the 2020 Mine plan will disrupt all components of the natural flow regime. In addition, as Table 4-4 of the FD (Table 4.16-3 of the FEIS) indicates, flow changes exceeding 20 percent changes in average monthly flows are predicted to occur in at least one NFK and/or SFK reach in every month.

4.F.7 The Pebble Limited Partnership (PLP) (Doc. #1912, Exhibit 4, p. 8-9)

Please see below for our response to your enquiry regarding the following text, from Section B.3.2. of the 2022 Proposed Determination for Pebble Deposit Area (US EPA, May 26, 2022):

The volume of groundwater pumping and the extent of groundwater table drawdown are likely underestimated for several reasons. In the groundwater model, pit dewatering well depths ranged up to 200 ft, which is approximately 1,450 ft less than the maximum pit depth; dewatering from mine site facilities other than the pit also was not considered. Furthermore, water table drawdown was not evaluated downstream of the mine site boundary (PLP 2019b: RFI 109g). Groundwater loss estimates from the pit assumed a zero groundwater flow condition at surface water divides, which does not seem to be substantiated by the stratigraphic data. As a result, more dewatering likely would be required than was included in the groundwater model.

This content in the Proposed Determination dated May 26, 2022, does not accurately reflect the numerical groundwater flow modeling undertaken by BGC Engineering USA Inc. (BGC).

Pebble Limited Partnership (PLP) retained BGC to develop a three-dimensional numerical groundwater flow model for the Pebble Project (the Project). Details of the model development, calibration, and predictive results are summarized in the report titled Pebble Project: Numerical Groundwater Flow Model (BGC, May 24, 2019) [BGC Engineering USA Inc. (May 24, 2019). Pebble Project: Numerical Groundwater Flow Model [Report]. Prepared for Pebble Limited Partnership (PLP). Document No. 1872002.0238.]. Updates to the numerical groundwater flow model and additional simulations run in response to Requests for Information (RFIs) were documented in a series of Project Memoranda, which are cited below where relevant.

The open pit implemented in the numerical groundwater flow model was represented using drain boundary conditions, and extended to the full proposed pit depth of approximately 1,650 ft with a minimum pit bottom elevation of approximately -500 ft (BGC, May 24, 2019). In addition to groundwater flows reporting directly to the pit, active groundwater extraction was simulated using a combination of perimeter and in-pit wells, as documented in BGC (July 11, 2019) [BGC Engineering USA Inc. (July 11, 2019). Pebble Project: RFI 109e Response Part 1 – Open Pit [Memorandum]. Prepared for Pebble Limited Partnership (PLP). Document No. 1872003.0242.]. Perimeter pumping wells extended to a uniform depth of 600 ft, while in-pit pumping wells were simulated to extend to an elevation of approximately -600 ft (i.e., below the base of the open pit). The range of potential flows to the open pit were explored through sensitivity analysis, with specific sensitivity scenarios selected to estimate the “upper bound of plausible extraction rates” at the request of the US Army Corps of Engineers (USACE).

The potential impacts of mine site facilities other than the pit were considered where appropriate; for example, at the quarries, Water Management Ponds (WMPs), and Pyritic and Bulk Tailings Storage Facilities (TSFs):

* Quarries were simulated using drain boundary conditions as documented in BGC (May 24, 2019) and BGC (September 30, 2019) [BGC Engineering USA Inc. (September 30, 2019). Pebble Project: RFI 109f Response – Streamflow Estimates from New Groundwater Model [Memorandum]. Prepared for Pebble Limited Partnership (PLP). Document No. 1872003.0247.]

* Conceptual underdrains were simulated beneath the Main WMP and Pyritic TSF using drain boundary conditions, and ditches were simulated around the entire perimeter of the WMPs and Pyritic TSF (BGC, July 25, 2019 [BGC Engineering USA Inc. (July 25, 2019). Pebble Project: RFI 109e Response Part 2 – WMPs & Pyritic TSF [Memorandum]. Prepared for Pebble Limited Partnership (PLP). Document No. 1872003.0243.]; September 30, 2019)

* The Bulk TSF was simulated to include conceptual underdrains beneath the facility, internal drainage within the embankments, and ditches at the downstream toe of both the Bulk TSF Main and South Embankments. Additional simulations were undertaken to estimate potential groundwater extraction rates during excavation of embankment foundations (BGC, August 16, 2019) [BGC Engineering USA Inc. (August 16, 2019). Pebble Project: RFI109e Response Part 3 – Bulk TSF [Memorandum]. Prepared for Pebble Limited Partnership (PLP). Document No. 1872003.0244.]

Drawdown was calculated based on results of end-of-mining and post-closure simulations relative to pre-mining conditions, and was considered throughout the entire domain of the numerical groundwater flow model, which extended well beyond the mine site boundaries. As with flows to the open pit, sensitivity analysis was used to explore a range of potential drawdown scenarios. No boundary conditions were assumed or assigned at surface water flow divides within the model domain; boundary conditions at the perimeter of the model were set at sufficient distance from the area of interest to limit influence on the model solution.

EPA Response

EPA appreciates the clarifications provided in Exhibit 4 from PLP (BGC Engineering USA Inc. 2022). Appendix B (Section B.3) of the FD has been updated from the PD in response to this additional information, to clarify how the groundwater model contributes to the FEIS providing an underestimation of the predicted impacts that the 2020 Mine Plan would have on aquatic resources in the SFK, NFK, and UTC watersheds.

4.F.8 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 21)

Pg. 4-30: "EPA Region 10 recognizes using average monthly streamflows to identify the extent of impacts may under-represent the true extent of unacceptable adverse effects, because relying on average monthly streamflow does not reflect the full breadth of streamflow changes that anadromous fishes and their habitats would experience on a daily or sub-daily basis."

Comment: This serves as another example highlighting how the PD vastly underestimates adverse effects of mine construction and operation.

EPA Response

Section 4.2.4 and Appendix B (Sections B.2, and B.3) of the FD have been updated from the PD to provide additional clarification on EPA's concerns with the use of average monthly streamflows to evaluate the potential for adverse effects on fish habitats from the construction and routine operation of a mine at the Pebble deposit. EPA concluded that despite these shortcomings, the streamflow change estimates documented in the FEIS provide a reasonable minimum approximation of the streamflow impacts expected to result from the 2020 Mine Plan. Even these minimum estimates of changes in average monthly flows, over the stream lengths documented in the FEIS, would affect the physical, chemical, and biological characteristics of these streams and constitute an unacceptable adverse effect on anadromous fishery areas.

4.F.9 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 21)

Pg. 4-37: “⁶⁰ EPA Region 10 believes the habitat losses described in the FEIS under-represent impacts on downstream anadromous fish streams (Appendix B: Sections B.3 and B.4). ⁶¹ EPA Region 10 believes the habitat losses described in the FEIS under-represent impacts on downstream anadromous habitat area (Appendix B: Sections B.3 and B.4).”

Comment: These footnotes serve as more indications that by EPA’s own admission, the PD vastly underestimates adverse effects of mine construction and operation.

EPA Response

See EPA’s response to comment 4.B.50. See also EPA’s response to comment 4.F.8 regarding impacts from streamflow alterations to anadromous fish streams downstream of the mine site within the SFK, NFK, and UTC watersheds.

4.F.10 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 21-22)

Pg. 4-41: “However, the complexity inherent in surface water–groundwater interactions in the SFK, NFK, and UTC watersheds makes prediction, regulation, and control of such interactions during large-scale landscape development very difficult (Hancock 2002).”

Comment: I would argue the complexity of surface water-groundwater interactions makes ecologically ideal control of discharges impossible, rather than difficult.

EPA Response

EPA agrees groundwater and surface water interactions are complex and controlling discharges based on ecological needs would be challenging. EPA recognizes that natural flow regimes affect habitat-forming processes and the biotic integrity of salmon ecosystems in the SFK, NFK, and UTC watersheds. As a result, EPA has evaluated the 2020 Mine Plan using projected streamflow changes from natural conditions in terms of percent change from natural flows. Section 4.2.4 and Appendix B (Sections B.2 and B.3) of the FD have been revised in the FD to provide additional clarification on EPA’s concerns with the use of average monthly streamflows to evaluate the potential for adverse effects on fish habitats from the construction and routine operation of a mine at the Pebble deposit. EPA concluded that despite these shortcomings, the streamflow change estimates documented in the FEIS provide a reasonable minimum approximation of the streamflow impacts expected to result from the 2020 Mine Plan. Even these minimum estimates of changes in average monthly flows, over the stream lengths documented in the FEIS, would affect the physical, chemical, and biological characteristics of these streams and constitute an unacceptable adverse effect on anadromous fishery areas.

4.F.11 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 9-10)

Mining the Pebble deposit would adversely affect hydrology, significantly impacting salmon

The Pebble Mine would severely impact the hydrology of the region through the destruction of streams and wetlands. As proposed in the 2020 Mine Plan, Pebble would permanently destroy 99.7 miles of streams and 2,113 acres of wetlands, [Revised Proposed Determination at ES-10.] which would increase to 330 miles and 8,750 acres in the Pebble Expansion Scenario. [Pebble FEIS at 4.22-111.] Indirect impacts from the mine's development would include an additional 79 miles of streams and 1,600 acres of wetlands. [Id. at 4.22-111.]

The water demands of the mine operation itself would have significant impacts on water quantity and the overall hydrology of the region. In a 2019 Temporary Water Use Agreement issued by the State of Alaska for water rights, Northern Dynasty Minerals was granted the use of water from fifteen distinct surface water sources totaling over 200 million gallons of water per year. [Alaska Department of Natural Resources, Temporary Water Use Authorization (April 2019), 1-2, <https://dnr.alaska.gov/mlw/mining/large-mines/pebble/pdf/twua-f2019-023.pdf> [<https://perma.cc/8FMW-XZCP>].] Northern Dynasty Minerals planned to source this water by redirecting all of the surface and groundwater within the mine area to the mine site. [Ecology and Env't, Inc., 2010, supra, at 15. For a full discussion of the effects of the proposed Pebble Mine on surrounding waters, see Wild Salmon Center and Trout Unlimited, Bristol Bay's Wild Salmon Ecosystems and the Pebble Mine: Key Considerations for a Large-Scale Mine Proposal (January 2012), 51-67, <https://www.wildsalmoncenter.org/wp-content/uploads/2016/02/PM-Report.pdf> [<https://perma.cc/XTG3-FPDZ>].] Due to the highly interconnected groundwater and surface water systems, these flow reductions would greatly influence the quality of habitat streams higher in the watershed, which are predominantly sourced by groundwater. [Ecology and Env't, Inc., 2010, supra, at 18.] Diminished flows both upstream and downstream of the mine would degrade and reduce overall fish habitat [William J. Hauser, Potential Impacts of the Proposed Pebble Mine on Fish Habitat and Fishery Resources of Bristol Bay 1-20 (2007) at 7, http://www.pebblescience.org/pdfs/Pebble_Fish_Habitat_Report-Hauser_Sept07.pdf [<https://perma.cc/ZX54-LLKR>].] and ultimately result in reductions to anadromous fish populations. [Ecology and Env't, Inc., 2010, supra, at 15.]

Low flow conditions would also change the physical characteristics of the water, further stressing salmon populations. Diminished flows result in higher temperature fluctuations, which in turn can affect the amount of dissolved oxygen in the water—both key factors in fish survival. [Id. at 40.] It is highly likely that the flow reductions and associated hydrologic effects would inhibit salmon growth and survival and ultimately the Bristol Bay salmon populations. [Id. at 37-39.] Changes in hydrology due to mining the Pebble deposit would fundamentally impact the viability of the fishery and support 404(c) action.

EPA Response

EPA agrees that the discharge of dredged or fill material associated with developing the Pebble mine described in the FD, and specifically the proposed changes to streamflow, would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. Section 4 of the FD provides the basis for EPA's determination that certain discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

4.F.12 Bristol Bay Heritage Land Trust (BBHLT) (Doc. #0826, p. 1-2)

{The following are summaries of a few key reasons BBHLT believes mines of the type and size that have been proposed for these watersheds should be avoided or severely curtailed.}

(...)

Water Levels Sufficient for Fish in the Kuktuli River and Other Waters Downstream: We are concerned that an open pit mine in the Kuktuli River watershed may reduce annual water levels on the Kuktuli River, and water downstream of its confluence with the Mulchatna River, beyond the levels required for the survival of the salmon and other freshwater in the watershed.

In 2006 the Bristol Bay Native Association, on behalf of the Nushagak-Mulchatna Watershed Council and one of its members, the Curyung Tribe of Dillingham, installed a hydrologic gauge on the Kuktuli River and began collecting flow data. A reservation of water application was filed with the Alaska Department of Natural Resources for the lower two reaches in July of 2007 and for nine reaches on the North Fork and South Fork of the Kuktuli River in February of 2009. BBHLT has helped raise funds to complete these applications. The Curyung Tribe is the applicant on these reservations. These pending reservations establish the annual flow requirements that should be maintained in order to assure the survival of healthy populations of salmon and other fish in the Kuktuli Watershed. We did not see in the EIS submitted by the Pebble Partnership a through [*sic*] analysis of the impact of upstream development related to the Pebble mine on the instream flow requirements for fish for the Kuktuli River recommended in the Curyung Tribe's pending application.

EPA Response

EPA agrees that mines of this type and size have the potential to result in unacceptable adverse effects on water resources. EPA's evaluation of streamflow impacts on anadromous fish streams does not extend downstream of the NFK and SFK confluence. Section 4 of the FD provides the basis for EPA's determination that certain discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

4.G Compliance with Relevant Portions of the 404(b)(1) Guidelines, Significant Degradation, and Direct and Secondary Effects of the 2020 Mine Plan

4.G.1 Trillium Asset Management LLC (Doc. #0162, p. 2)

But we are also acutely aware of the negative economic externalities related to natural resource extraction. Damage to ecosystem goods and services from land and water pollution related to mineral extraction can generate very real, but currently unpriced, economic, social and environmental externalities. [<https://tnfd.global/>]

EPA Response

EPA acknowledges this comment. See *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska (EPA 2023b)* (referenced in Section 4.4 of the FD) for more information about EPA’s consideration of these issues. Also, see EPA’s responses to comments in Topic 6.F.

4.G.2 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 46)

B. The Pebble Final EIS, Army Corps Record of Decision, and 404(b)(1) Guidelines Analysis Support Final 404(c) Action

EPA’s Section 404(c) regulations provide that in evaluating the “unacceptability” of effects, consideration should be given to the “relevant portions of the Section 404(b)(1) Guidelines.” [40 CFR 231.2(e)] EPA was closely involved in the three-year long Army Corps permitting process as a cooperating agency in development of the Final EIS, [Pebble ROD, p. 1 -1] in development of the LEDPA, [Id, attachment B2, pp. 1-3.] and in weekly discussions with the Army Corps regarding compliance with the 404(b)(1) Guidelines that led to the Army Corps’ Record of Decision. [Id.] As such, the 2022 PD analysis of compliance with the 404(b)(1) Guidelines is appropriately tailored to the Final EIS findings, EPA’s intimate knowledge of the Army Corps’ decisionmaking process and findings, and EPA’s close evaluation during the permitting and NEPA processes of PLP’s proposal. [2022 PD, Section 4.3.]

EPA’s lengthy 404(b)(1) Guidelines analysis supports the agency’s determination that direct and secondary impacts of the discharge of dredged or fill material from construction and routine operation from mining the Pebble deposit with effects similar or greater in nature and magnitude to the 2020 Mine Plan would result in significant degradation under the Guidelines. EPA’s finding, based on PLP’s permit application and associated NEPA process, confirms the Army Corps’ similar finding that the 2020 Mine Plan would result in significant adverse effects.

EPA Response

EPA considers the relevant portions of the CWA Section 404(b)(1) Guidelines in Section 4.3 of the FD.

4.H Cumulative Effects of Mine Expansion

4.H.1 World Wildlife Fund (WWF) (Doc. #0138, p. 2)

WWF also appreciates the discussion about other adverse effects of concern associated with discharges of material from the Pebble deposit. Adverse effects from accidents and failures such as a tailings dam failure are likely to persevere “in perpetuity” and have profound ecological ramifications for the entire area. The Final Environmental Impact Statement (FEIS) upon which the EPA Proposed Determination is made, finds it reasonably foreseeable that the 2020 mine plan would expand in the future to mine 8.6 billion tons of ore over 78 years, which would result in “extraordinary and unprecedented levels of anadromous fish habitat losses and degradation, dramatically expanding the unacceptable adverse effects identified for the 2020 Mine Plan”. WWF strongly agrees with the EPA’s conclusion that given the extensive scientific and regulatory record supporting this designation, it is not necessary to engage in another multi-year National Environmental Protection Act (NEPA) or CWA Section 404 review process for future plans that may propose to discharge dredged or fill material in the area that could result in effects that are similar or greater in nature and magnitude to effects of the 2020 Mine Plan.

EPA Response

Although not a basis for the FD, EPA discusses the cumulative effects of the Expanded Mine Scenario in Section 4.3.1.2 of the FD. See also EPA’s response to comment 4.B.3.

Adverse effects associated with accidents and failures are discussed in Section 6 of the FD.

4.H.2 National Wildlife Federation (Doc. #0129, p. 1)

{Indeed, even the impacts highlighted in the Proposed Determination for informational purposes clearly justify the need more stringent restrictions. These include:}

(...)

* Economic reality, which guarantees that approval of a smaller mine would lead to aggressive calls for its expansion

EPA Response

Although not a basis for the FD, EPA discusses the cumulative effects of the Expanded Mine Scenario in Section 4.3.1.2 of the FD. See also EPA’s response to comment 4.B.3.

4.H.3 Midgard Environmental Services LLC (Doc. #0616, p. 1)

Given that the 20-year mine plan evaluated in the FEIS only extracts ten percent of the ore body and it is likely not economically viable as a stand-alone project, a much larger mine would almost certainly be developed if the starter mine is allowed to proceed (see attached comment letter to the Army Corps of Engineers on EIS project economics dated March, 28 2019). Full development of the ore body would

result in cumulative impacts that are almost an order of magnitude larger than those predicted for the 2020 mine plan.

EPA Response

See EPA's response to comment 4.H.2.

4.H.4 World Wildlife Fund (WWF) (Doc. #1739, p. 2)

The Final Environmental Impact Statement (FEIS) upon which the EPA Proposed Determination is made, finds it reasonably foreseeable that the 2020 mine plan would expand in the future to mine 8.6 billion tons of ore over 78 years, which would result in "extraordinary and unprecedented levels of anadromous fish habitat losses and degradation, dramatically expanding the unacceptable adverse effects identified for the 2020 Mine Plan".

EPA Response

See EPA's response to comment 4.H.2.

4.H.5 Bee Long (Doc. #0165, p. 1)

EPA proposed restriction for Future Mine Plans. The Pebble permit applicants have publicly assured their current and future investors that this mine will be expanded. The U.S. Army Corps of Engineers Final Environmental Impact Statement under 404(c) finds a reasonably foreseeable expansion that would mine 8.6 Billion tons over 78 years. That expansion would result in a total loss of 430 miles of streams. This includes 43.5 miles of anadromous fish streams and 386 miles of additional streams that support anadromous fish streams. This would mean a total loss of 10,800 acres of natural wetlands and other waters that support wetlands. Thus future mine plans with their discharges of dredged or fill material could result in unacceptable adverse effects on anadromous fishery areas anywhere in these 3 aforementioned watershed if those discharge effects are similar to or greater in magnitude to the adverse effects from the 2020 mine plan footprint.

EPA Response

See EPA's response to comment 4.H.2.

4.H.6 National Association of Wetland Managers (NAWM) (Doc. #0606, p. 3)

Moreover, the projected impact of the "reasonable expansion" to the mine site would cause much greater devastation, resulting in total and permanent loss of 430 stream miles and over 10,800 acres of wetlands and other waters. [Ibid. pp. ES-16- ES-17] That roughly equals stream loss the same distance as driving from Washington, D.C. to Boston, MA and wetland loss that exceeds the combined area of Bethesda and Chevy Chase, MD or almost the size of Olympia, WA.

EPA Response

See EPA's response to comment 4.H.2.

4.H.7 Natural Resources Defense Council et al. (Doc. #0617, p. 3)

Yet the Pebble Mine would risk it all. If fully developed, the Pebble Mine would generate up to 10 billion tons of toxic mining waste. As proposed in the Pebble Limited Partnership's (PLP) 2020 mine plan, the 20-year mine would destroy approximately 100 miles of streams and 2,100 acres of wetlands, completely decimating areas critical to Bristol Bay's salmon fishery.[U.S. Army Corps of Engineers, POA-2017-271, Final Environmental Impact Statement for Pebble Mine (July 2020), Executive Summary at 93 and 98.] There is no question that the Pebble Mine would result in "unacceptable adverse effects" to fishery areas, recreational areas, and wildlife, satisfying the statutory trigger to invoke Section 404(c) of the Clean Water Act.

But the 20-year mine plan proposed in 2020 does not represent PLP's true intentions. Undercover videotapes of PLP and parent company Northern Dynasty Minerals top executives confirmed Pebble's real plan: to exponentially expand mining operations for the next 180 to 200 years.[Environmental Investigation Agency, Pebble Tapes 1 - Scale of Mine (2020), <https://vimeo.com/459804434>.]

EPA Response

See EPA's response to comment 4.H.2.

4.H.8 Mass Mailing Campaign (Doc. #2540, p. 1)

But the Pebble Limited Partnership has even larger plans. Undercover videotapes of top executives from the partnership and its parent company, Northern Dynasty Minerals, have confirmed Pebble's real plan: to exponentially expand mining operations in the region for the next 180 to 200 years. Compounding these threats is the fact that our mining laws have remained unchanged for 150 years and currently lack strong environmental and community protections.

EPA Response

See EPA's response to comment 4.H.2.

4.H.9 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 13)

Mining the Pebble deposit would cause future degradation to fishery areas by industrializing the Bristol Bay region

If the Pebble Mine—or any other large-scale porphyry ore mine—is built, it would inevitably attract additional mining and industrial development in the area, resulting in still larger impacts to the Bristol Bay region.

First, it is common in the mining industry to secure a permit for a smaller mine and then later request permits for expansion. [Ecology and Env't, Inc., 2010, *supra*, at 120-21.] All indications are that the

Pebble Mine will be no different. As former PLP CEO Tom Collier put it, “we’ll come in at some point in the future and request an extension of the time and probably an expansion of how much we are producing on a daily basis.” [Environmental Investigation Agency, Pebble Tapes 1 - Scale of Mine (2020), <https://vimeo.com/459804434>.] Similarly, the CEO of Northern Dynasty Minerals, Ronald Thiessen, said that “during [the first] 20 years, you’re going to make the application to continue for another 20... The first deposit that we’ve discovered at Pebble—and there will be more... lasts 180 years.” [Id.] As such, it is reasonably foreseeable—indeed highly probable—that the mine will expand far beyond the initial plan. Furthermore, once the mine is built—introducing critical infrastructure for development—it will open the region for industrial-scale mining even beyond the Pebble deposit. [Hauser, *supra*, at 16.]

Second, development of the mine, and the infrastructure associated with it, would open broader access to the region, through roads, pipelines, energy infrastructure, and port facilities. It is foreseeable that the proposed roads will generate a wide range of increased traffic in the area, in the form of industrial, commercial, and other development and attendant activities, including other major mining projects. These indirect effects will likely be cumulative and lead to the construction of still more roads and trails—which will in turn lead to more stream crossings, increased human and vehicle waste, increased competition for fish and wildlife, and increased demand for groundwater. [Id. at 14.]

The potential indirect impacts of mining the Pebble deposit pose additional, significant threats to the fishery areas and ecology of the region that Section 404(c) was enacted to protect.

EPA Response

See EPA’s response to comment 4.H.2.

4.H.10 National Wildlife Federation (Doc. #2067, p. 3)

1. Impacts associated with the construction of mine infrastructure located outside of the mine site justify more stringent restrictions to safeguard the Bristol Bay watershed from any large-scale mine.

EPA does not need to evaluate the impacts of constructing mine infrastructure located outside of the mine site (e.g., transportation corridors, port facilities, pipelines) to determine that the 2020 Mine Plan would cause unacceptable adverse effects to aquatic resources. However, it is clear that the off-mine site infrastructure required for the 2020 Mine Plan would cause severe and highly unacceptable adverse impacts. It is equally clear that this same type of off-mine-site infrastructure would be required for any large-scale mine in the Bristol Bay watershed.

The 2020 Mine Plan includes an 83-mile long transportation corridor that stretches from the mine site to a port on Cook Inlet. This transportation corridor includes a 30-mile road, a ferry terminal, an 18-mile crossing of Lake Iliamna, another ferry terminal, a 35-mile road, a port facility and jetty for lightering and supply barges, offshore lightering locations, a 188-mile gas pipeline, and associated facilities. The reasonably foreseeable 78-year mine plan would add an entirely new pipeline, road, and deep-water port.

EPA Response

See EPA's response to comment 4.B.50 regarding the scope of discharges and impacts evaluated in the FD, and EPA's response to comment 5.B.18 regarding how discharges associated with ancillary project components would be considered in any future proposals to develop the Pebble deposit.

4.H.11 H2T Mine Engineering Services, LLP (Doc. #0270, p. 1, 2)

The Corps of Engineers published an EIS for Pebble in 2020 with input from many agencies including the EPA that states that the project can be done without harm to the region's fisheries. The EIS further notes the tremendous economic opportunity the project represents for the communities around Iliamna Lake where year-round jobs are scarce, and the cost of living is very high.

(...)

EIS Findings

1. EPA was a full participant in the Environmental Impact Statement (EIS) process for the Pebble Project over the course of three years and never raised objections of this magnitude.
2. This effort is a blatant attempt to undermine the multi-agency EIS for Pebble that found no harm to the Bristol Bay fishery. The EIS specifically said that fishermen would see no reduction in fish values and that downstream waters would not see impacts beyond what would be expected to be seen in seasonal fluctuations.
3. EPA must acknowledge that the EIS for Pebble clearly states the mine can be developed without harm to the Bristol Bay fishery.
4. There would be no measurable change in the number of returning salmon and the historical relationship between ex-vessel values and wholesale values. (ES 87)
5. The mine site area is not connected to the Togiak, Ugashik, Naknek, and Egegik watersheds and is not expected to affect fish populations or harvests from these watersheds. (Table 4.6-1, P4.6-4)

EPA Response

Information and analysis in the FEIS and ROD support EPA's findings in the FD and both documents are cited extensively in the FD. Attachment 1 of Appendix B in the FD addresses FEIS conclusions that appear to be inconsistent with the FD (including those cited by the commenter). See EPA's response to comment 4.B.41. EPA did participate as a cooperating agency during the NEPA process and raised significant concerns regarding the proposed project throughout the EIS process (see for example, EPA's July 1, 2019 comments on the Section 404 permit public notice (EPA 2019a) and EPA's July 1, 2019 comments on the DEIS (EPA 2019b)). In addition, from March 12, 2020 through May 28, 2020, an interagency team of managers and scientific and technical staff from USACE,

EPA, and USFWS met weekly to evaluate the proposed project for compliance with the CWA Section 404(b)(1) Guidelines and discuss concerns. See EPA’s response to comment 2.C.6. EPA did not concur with the FEIS and nothing in the record supports the commenter’s contention that it did. In November 2020, USACE issued its decision to deny the Section 404 permit, in part due to the proposed project’s failure to comply with the Guidelines.

With respect to the commenter’s contention that the FEIS “notes the tremendous economic opportunity the project represents for the communities around Iliamna Lake where year-round jobs are scarce, and the cost of living is very high” see *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska (EPA 2023b)* (referenced in Section 4.4 of the FD) for more information about EPA’s consideration of these issues. Also, see EPA’s responses to comments in Topic 6.F.

4.H.12 Alaska Miners Association (AMA) (Doc. #0803, p. 2-3)

There is an established permitting process to evaluate any development project in our nation and it is rooted in science and follows dozens of laws and regulations. This process, despite having politics injected along the way, is still ongoing at Pebble. After submitting its permit application, the Pebble Project underwent scoping in which a comment period and many public meetings resulted in hundreds of thousands of comments outlining areas for an EIS to consider. A draft EIS also provided for public participation in the extensive science-based evaluation, of which EPA was a cooperating agency. During this time, EPA raised no major objections, and ultimately the Corps published an Environmental Impact Statement for the Pebble Project that shows it can be done without harm to the Bristol Bay fishery.

The following citations from the EIS demonstrate that project will not harm the fishery:

- * There would be no measurable change in the number of returning salmon and the historical relationship between ex-vessel values and wholesale values. In addition, there would be no changes to wholesale values or processor operations expected for Alternative 1a. Under normal operations, the Alternatives would not be expected to have a measurable effect on fish numbers and result in long-term changes to the health of the commercial fisheries in Bristol Bay. (ES 87)
- * Under normal operations, the alternatives would not be expected to have a measurable effect on fish numbers or result in long-term changes to the health of the commercial fisheries in Bristol Bay. (4.6-3)
- * The mine site area is not connected to the Togiak, Ugashik, Naknek, and Egegik watersheds and is not expected to affect fish populations or harvests from these watersheds. (Table 4.6-1, P4.6-4)
- * This alternative would not be expected to have measurable effects on the number of adult salmon, and therefore would have no impact to commercial fisheries. (Table 4.6-1, P. 4.6-4)

* As with Alternative 1a, Alternative 3 would not be expected to measurably affect the health or value of Bristol Bay salmon fishery, including permit holder earnings, permit holder value, crew earnings, fishery first wholesale values, processor earnings, or local fiscal contributions. (4.6-18)

* However, considering the physical characteristics and current fish use of habitat to be removed, the consequently low densities of juvenile Chinook and coho observed in the affected tributaries, and the few numbers of spawning coho observed (see Section 3.24, Fish Values), impacts to anadromous and resident fish populations from these direct habitat losses would not be measurable, and would be expected to fall within the range of natural variability. (4.24-46)

* Other salmon fisheries in Alaska exist in conjunction with non-renewable resource extraction industries. For example, the Cook Inlet salmon fisheries exist in an active oil and gas basin and have developed headwaters of Anchorage and the Matanuska-Susitna areas. The Copper River salmon fishery occurs in a watershed with the remains of the historic Kennecott Copper Mine and the Trans Alaska Pipeline System in the headwaters of portions of the fishery. Both fisheries average higher prices per pound than the Bristol Bay Salmon Fishery. (ES 86)

Following the EIS concluding the project could be done safely, the Corps changed its wetlands mitigation requirements and ultimately issued a final decision to deny the permit. The process to appeal that decision has been significantly delayed by the Corps, and today the appeal is still underway, making the Proposed Determination an unquestionable preemptive action.

EPA Response

See EPA's response to comment 4.H.11.

4.H.13 National Mining Association (NMA) (Doc. #0809, p. 4)

EPA's Proposed Determination Fails to Acknowledge Key Findings from the Multi-Agency Final EIS

The proposed determination also appears to be a sharp departure from the multi-agency final Environmental Impact Statement (EIS), which EPA contributed to, completed just two years ago. The EIS is not adequately discussed in the proposed determination, yet the findings in the EIS are critically important in the consideration of this project. For example, the EIS found the following:

* There would be no measurable change in the number of returning salmon and the historical relationship between ex-vessel values and wholesale values. In addition, there would be no changes to wholesale values or processor operations expected for Alternative 1a. Under normal operations, the Alternatives would not be expected to have a measurable effect on fish numbers and result in long-term changes to the health of the commercial fisheries in Bristol Bay. (ES 87)

* Under normal operations, the alternatives would not be expected to have a measurable effect on fish numbers or result in long-term changes to the health of the commercial fisheries in Bristol Bay. (4.6-3)

* The mine site area is not connected to the Togiak, Ugashik, Naknek, and Egegik watersheds and is not expected to affect fish populations or harvests from these watersheds. (Table 4.6-1, P4.6-4)

* This alternative would not be expected to have measurable effects on the number of adult salmon, and therefore would have no impact to commercial fisheries. (Table 4.6-1, P. 4.6-4)

* As with Alternative 1a, Alternative 3 would not be expected to measurably affect the health or value of Bristol Bay salmon fishery, including permit holder earnings, permit holder value, crew earnings, fishery first wholesale values, processor earnings, or local fiscal contributions. (4.6-18)

* However, considering the physical characteristics and current fish use of habitat to be removed, the consequently low densities of juvenile Chinook and coho observed in the affected tributaries, and the few numbers of spawning coho observed (see Section 3.24, Fish Values), impacts to anadromous and resident fish populations from these direct habitat losses would not be measurable, and would be expected to fall within the range of natural variability. (4.24-46)

* Other salmon fisheries in Alaska exist in conjunction with non-renewable resource extraction industries. (ES 86).

EPA Response

See EPA's response to comment 4.H.11.

4.H.14 Cook Inlet Tug & Barge, LLC (Doc. #1987, p. 1)

* EPA was a full participant in the Environmental Impact Statement (EIS) process for the Pebble Project over the course of three years and never raised objections of this magnitude.

(...)

* This preemptive veto sets a dangerous precedent which would undermine the multi-agency EIS that was recently completed for Pebble that found no harm would be done to the Bristol Bay fishery. The EIS noted that downstream waters would not see impacts beyond what would be expected to be seen in season fluctuations.

EPA Response

See EPA's response to comment 4.H.11.

4.H.15 United Tribes of Bristol Bay (UTBB) (Doc. #0823, p. 5-6)

The cumulative impacts multiple mines would have in the region confirms what many UTBB members already suspected—the Pebble deposit is so large, and will require so much infrastructure, that its development could serve as the impetus for a region wide mining district.[U.S ENVTL. PROT. AGENCY, AN ASSESSMENT OF POTENTIAL MINING IMPACTS ON SALMON ECOSYSTEMS OF BRISTOL BAY, ALASKA Ch. 13, at 13-6 (2014) (EPA 910-R-14-001C).] There are at least fifteen other large mining claims surrounding the Pebble deposit.[Id. at 13-4.] Many of these mines are too small to operate independently or provide the necessary infrastructure to profitably operate.[Id. at 13-6–13-18.] However, these smaller mines would be able to utilize many of the amenities that a fully developed

Pebble project would bring.[Id. at 13-27.] The possibility of a full scale mining district in the region would bring large power generation facilities, extensive road systems, and industrial facilities—features not yet seen in Bristol Bay.[Id. at 13-31–13-32.] With these “improvements” there will be, among other things, an increase in traffic, noise, and competition for hunting and fishing access between neighboring communities.[Id. at 13-32.] The cumulative effect of region wide mining will exacerbate those impacts from the Pebble deposit already being felt by the villages in the Nushagak and Kvichak watersheds.[Id. at 13-33. The authors estimate that at least 13 of the 14 villages in the watersheds would be affected. Id.] Region-wide mineral development would further decrease traditional hunting and fishing areas, while also reducing the amount of fish and game located within those areas.[Id.] No matter how many amenities mining brings to the region, the loss of subsistence fish and game species from cumulative mining-related stressors will be devastating to the Yup’ik, Dena’ina, and Alutiiq subsistence cultures.

EPA Response

See EPA’s responses to comments 4.H.2 and 6.E.2.

4.H.16 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 2)

The Final EIS clearly demonstrates that the Pebble Mine would have extensive, unacceptable adverse impacts on Bristol Bay’s wetlands and rivers. As the Final EIS states, “no other wild salmon fishery in the world exists in conjunction with an active mine of this size.” [Final EIS, at p. 4.6-9]

EPA Response

EPA agrees with the commenter that the FEIS demonstrates that the Pebble Mine would have extensive, unacceptable adverse impacts on certain aquatic resources in the Bristol Bay watershed. The FD also references the FEIS statement identified by the commenter.

4.H.17 National Fisheries Institute (NFI) (Doc. #0854, p. 3)

Development of Pebble Mine plainly threatens this fishery – and in turn the companies, communities, families, and consumers that rely on the fishery. Both EPA and the U.S. Army Corps of Engineers have determined that the project would irreparably harm the Bristol Bay fishery. If fully developed, Pebble Mine would generate billions of tons of toxic mining waste that would feed into the Bristol Bay waters.

EPA Response

See EPA’s responses to comments 1.A.1 and 1.B.2.

4.H.18 Owl Ridge Natural Resource Consultants, Inc. (Doc. #0865, p. 1)

The U.S. Army Corps of Engineers’ 2020 Final EIS (July 2020) concluded that the deposit located on state land can be responsibly developed meeting strict federal regulatory standards. It is alarming that EPA contradicts these conclusions in its 2022 PD and presumes levels of likely unacceptable impacts to

fisheries, affected watersheds, and the portfolio effect [The impact to the Portfolio Effect would not be discernable, with no measurable change in the number of returning salmon, nor a change in genetic diversity. (EIS 4.24.41)]. The 2022 PD would restrict, in a yet-to-be- determined manner, any discharges associated with future mining of the Pebble deposit whenever the discharges would be within approximately 309 square miles of the headwater drainages of the North Fork Koktuli River, South Fork Koktuli River, and Upper Talarik Creek. [With respect to future mine plans for the Pebble deposit, the 2022 PD at ES-13 and 5-2 states: [T]he Regional Administrator proposes to restrict the use of waters of the United States within the Defined Area for Restriction (Figures ES-5 and ES-6) for specification as disposal sites for the discharge of dredged or fill material for the construction and routine operation of any future plan to mine the Pebble deposit that would either individually or collectively result in adverse effects similar or greater in nature and magnitude to those described in Sections 4.2.1 through 4.2.4 of the 2022 Proposed Determination. Because each of the impacts described in Sections 4.2.1 through 4.2.4 could, independently, result in unacceptable adverse effects on anadromous fishery areas, a proposal that triggers any one of these four unacceptability findings would be subject to the restriction.]

EPA Response

Regarding the commenter’s first point, information and analysis in the FEIS and ROD support EPA’s findings in the FD and both documents are cited extensively in the FD. Attachment 1 of Appendix B in the FD addresses FEIS conclusions that appear to be inconsistent with the FD. See EPA’s response to comment 4.B.41.

Regarding the commenter’s second point, additional clarification has been added to the restriction and how it would be applied (see Section 5.2 of the FD).

4.H.19 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 12-13)

Cumulative impacts from mining the Pebble deposit would further degrade fishery areas

Each of the above impacts would occur simultaneously, reducing overall salmon resilience. These compounding effects, reduced habitat, lowered food resource availability, impaired water quality, and diminished genetic variability and weakened disease resistance, would have significant adverse effects on the world-class fishery in Bristol Bay. [Ecology and Env’t, Inc., 2010, supra, at 116.]

The temporal scope of these impacts is also likely to extend far into the future. Because Bristol Bay’s salmon fishery is comprised of many genetically distinct and locally adapted populations, [Ray Hilborn et al., Biocomplexity and Fisheries Sustainability, 100 PNAS 6564, 6564 (2003), available at <http://www.pnas.org/content/100/11/6564> [perma.cc/EZ4T-QLTV].] the long-term success of the fishery is dependent upon the maintenance and health of these discrete populations. [Christopher Habicht et al., Genetic and Ecological Divergence Defines Population Structure of Sockeye Salmon Populations Returning to Bristol Bay, Alaska, and Provides a Tool for Admixture Analysis, 136 Transactions of the American Fisheries Society 82, 82 (2007), available at

https://www.researchgate.net/publication/250020036_Genetic_and_Ecological_Divergence_Defines_Population_Structure_of_Sockeye_Salmon_Populations_Returning_to_Bristol_Bay_Alaska_and_Provides_a_Tool_for_Admixture_Analysis [perma.cc/MXZ4-6CJ2].] Studies have shown that Bristol Bay’s salmon return is more than twice as stable due to this diversity than if it were composed of a single population. [Daniel E. Schindler et al., Population Diversity and the Portfolio Effect in an Exploited Species, 465 Nature 609, 609 (2010), available at <http://www.nature.com/nature/journal/v465/n7298/abs/nature09060.html> [perma.cc/RT5M-TYCC]. (Population Diversity)] The cumulative impacts presented by mining the Pebble deposit greatly threaten that diversity—and warrant final 404(c) action to protect Bristol Bay.

EPA Response

See EPA’s response to comment 4.H.2. The literature cited by the commenter was considered by EPA in development of the FD.

4.H.20 Loren Karro (Doc. #0847, p. 1-2)

{ “[The] Mine Plane would also result in the permanent loss of approximately 2,113 acres (8.6 km) of wetlands and other waters at the mine site”. [sec 4.2.3] “There are no examples of other projects resulting in this level of permanent loss of anadromous fish streams in the CWA Section 404 regulatory program in Alaska.” [sec 4.3.1.2.4]}

Any attempt to claim that these losses would be reversed in subsequent mine reclamation attempts would be ridiculous. In its analysis of the proposed Chuitna Coal Project, Alaska Dept. of Fish and Game (ADF&G) stated that “If these streams and the genetically unique salmon demes that use them are destroyed or blocked by strip-mining . . . it is unlikely that these local salmon stocks could be restored to their former level of productivity even if a new stream channel could be successfully constructed. . . It is probably not possible to reconstruct a new stream with the same level of productivity . . . [The mining company] has not provided any examples of where a strip-mined salmon spawning and rearing drainage the size of [the stream at issue, 17.4 km] has been restored to premining productivity. An extensive search of the scientific literature and discussions with stream restoration experts in Alaska and elsewhere have not produced any examples. . . .” [Trasky, Lance, Report on Chuitna Coal Project Aquatic Studies and Fish and Wildlife Protection Plan pg 55–56 (2009)]

Another scientist was even more blunt. Dr. Margaret Palmer has noted that: “Wetlands and headwaters cannot be restored to ecological function if the very material that they rely on — deep sediment structure and long-entrained flow paths — are mined through, ground up, and replaced in the mining pit as a relatively homogenous pile of rubble and dirt. . . . While stream reconstruction has been done successfully by re-grading and re-vegetating banks, or adding or removing debris to create habitat, no one has simply created a new stream where none exists. A new ditch can be dug where the old stream used to be, and can have the same curves and shape. But it will not have the exchange of surface and groundwater at the streambed, upwelling areas for fish to lay their eggs in, biodiversity of insects that

headwater streams provide as food for fish, the purity of water and nutrients wetlands provided.”
[Palmer, Margaret A., Report on Chuitna Coal Project of PacRim Coal, Executive Summary (2009)]

EPA Response

Challenges associated with stream restoration are discussed in Appendix C of the FD.

4.H.21 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 22)

Pg. 4-59: “Many of the eliminated streams likely contain anadromous fish habitat that has not yet been documented (Sections 3.2.4 and 4.2.1) but may be particularly valuable for juvenile salmonids.”

Comment: Here, EPA acknowledges that surveys conducted to date are inadequate to thoroughly delineate anadromous fish streams, though this does not appear to be considered in the overall assessment of adverse effects of mine construction and operation.

EPA Response

Appendix B of the FD discusses how existing data collection efforts likely underestimate salmon use of potentially affected aquatic habitats.

4.I Compensatory Mitigation

4.I.1 National Association of Wetland Managers (NAWM) (Doc. #0606, p. 2-3)

EPA finds that Pebble Limited Partnership’s (PLP) 2020 Mine Plan would result in significant degradation to waterways and aquatic habitat and thus cause permanent and irreversible damage to local fisheries for which no known compensation measures would adequately mitigate the aquatic impact. [USEPA. 2022 Proposed Determination. p. ES-16]

EPA Region 10 evaluated two compensatory mitigation plans submitted in 2020 by the project proponent, PLP, and found that neither plan adequately mitigated the adverse impacts on anadromous fishery areas to an acceptable level. As an extra step, EPA Region 10 evaluated potential compensation measures not incorporated in the plan, including but not limited to ideas proposed in public comments to the 2014 Proposed Determination, but EPA still concluded that “available information demonstrates that known compensation measures are unlikely to adequately mitigate effects described in this proposed determination to an acceptable level.” [Ibid.]

In the Pebble Project Record of Decision, USACE concluded that the “proposed discharge does not comply with 404(b)(1) Guidelines [for Specification of Disposal Sites] because the proposed project will result in significant degradation of the aquatic ecosystem” and “the proposed project is contrary to the public interest.” [United States Army Corps of Engineers. November 20, 2020. Record of Decision for Application Submitted by Pebble Limited Partnership (Army Permit #POA-2017-00271). p.7-1]

Referencing the project alternatives analysis evaluated in the Final Environmental Impact Statement, USACE determined the project proponent's compensatory mitigation plan to be noncompliant with nine specific requirements of rule and therefore inadequate to make up for the substantial devastation of streams, wetlands, and other waters. [Ibid. p. 6-5] These findings resulted in USACE denying PLP's permit application.

EPA Response

As the commenter notes, and as discussed in Section 4.3.2 of the FD, EPA conducted its own review of the two compensatory mitigation plans submitted by PLP (PLP 2020a, PLP 2020b) during its CWA Section 404 permit review process and based its findings on its review. See Section 4.3.2. and Appendix C of the FD for EPA's discussion on compensatory mitigation.

4.1.2 Midgard Environmental Services LLC (Doc. #0616, p. 3)

Comment #7 - The compensatory mitigation plans provided by the Pebble Limited Partnership are grossly inadequate and clearly would only offset a small fraction of the wetlands and streams that would be lost to any mine development. In fact, given the pristine environment of the Bristol Bay region, it would be impossible for any mine developer to find sufficient restoration or enhancement projects within the immediate region to offset the large unavoidable impacts associated with mining. Furthermore, given that the lands within the watershed are unthreatened by imminent development other than from the Pebble Project itself, land preservation alone would not meet the broad intent of any compensatory mitigation program in general; or the specific legal requirement that "the [preserved] resources are under threat of destruction or adverse modification." (33 CFR Part 332.3(h)(1)(iv)); 40 CFR Part 230(h)(1)(iv)) and 2018 Memorandum of Agreement between Dept of the Army and USEPA).

EPA Response

EPA agrees with the commenter that the two compensatory mitigation plans submitted by PLP (PLP 2020a, PLP 2020b) would not mitigate the impacts described in the PD to an acceptable level. This is discussed in Section 4.3.2 of the FD.

4.1.3 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 13)

Comments on the potential for mitigation to be successful in reducing the impacts on aquatic resources from discharges of dredged or fill material associated with mining the Pebble deposit.

See detailed comments below specifically supporting Appendix C of the PD. I agree with EPA's conclusion regarding mitigation that best available science "demonstrates that known compensation measures are unlikely to adequately mitigate effects described in this proposed determination to an acceptable level" (PD pg. 4-73). In my opinion however, known compensation measures are not just unlikely to mitigate effects, but are incapable of mitigating effects. Countless mitigation, restoration, and

salmon recovery efforts in the Lower 48 have produced mixed results due to the complexity of natural systems. No studies that of which I'm aware demonstrate mitigation/restoration efforts successful enough to produce sustainable population-level increases in salmonids or other fishes. Indeed, a recent comprehensive investigative journalistic effort concludes that despite untold billions of dollars invested in salmon recovery throughout the Columbia River basin, two decades of fish tracking data indicate that at current rates, "salmon will never recover" (Schick, T., I. Hwang, and K. Wentz-Graff. 2022. The U.S. has spent more than \$2 Billion on a plan to save salmon. The fish are vanishing anyway. ProPublica in partnership with Oregon Public Broadcasting. May 24th, 2022.

<https://www.opb.org/article/2022/05/24/pacific-northwest-federal-salmon-hatcheries-declining-returns>). The nearly pristine nature of the project area and virtually all Bristol Bay watersheds additionally precludes habitat "improvement" throughout the drainage.

EPA Response

The additional information provided by the commenter provides further support for EPA's conclusions in Section 4.3.2 and Appendix C of the FD regarding the challenges of adequately mitigating impacts of the nature and magnitude described in the FD.

4.1.4 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 11-12)

Comments regarding any corrective action that could be taken to reduce adverse impacts on aquatic resources from discharges of dredged or fill material associated with mining the Pebble deposit.

While "corrective action" falls largely outside of my expertise, it is clear from the PD including Appendix C and from the extensive record of the failure of salmon recovery and habitat restoration efforts in the Lower 48, that mitigation and compensation efforts can not sufficiently negate impacts of mining in the Bristol Bay region.

EPA Response

The additional information provided by the commenter provides further support for EPA's conclusions in Section 4.3.2 and Appendix C of the FD regarding the challenges of adequately mitigating impacts of the nature and magnitude described in the FD.

4.1.5 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 22)

Pg. 4-69: "The Kaktuli River watershed is an almost entirely roadless area and, thus, offers few, if any, viable culvert replacement or removal opportunities (none are identified in the January 2020 CMP)." And also "69 The UTC watershed is also an almost entirely roadless area, thus this compensation measure would suffer from the same deficiencies if it were applied to address impacts in the UTC watershed."

Comment: Despite dozens of hour of flight time in the watershed, I'm not aware of ANY roads in the Kuktuli drainage.

EPA Response

The additional information provided by the commenter provides further support for EPA's conclusions in the FD regarding the dearth of opportunities to perform culvert replacement and removal in the potentially affected watersheds.

4.1.6 Trustees for Alaska et al. (Doc. #0831, p. 18-19)

Comments on the potential for mitigation to be successful in reducing the impacts on aquatic resources from discharges of dredged or fill material associated with mining the Pebble deposit.

The impacts of large-scale mining of the Pebble deposit to the aquatic resources would be impossible to mitigate, and PLP's efforts to propose mitigation to date have been woefully inadequate to offset aquatic losses.[See, e.g., Thomas G. Yocom, The Pebble Project Draft Compensatory Mitigation Plan (January 2020) provides no habitat replacement or preservation to offset thousands of acres of wetland and aquatic habitats that the Pebble Mine Project would destroy, degrade, or fragment (Aug. 19, 2020) (Ex. 19); Thomas G. Yocom, The Pebble Project DEIS provides no substantive proposals of compensatory mitigation for losses of wetlands and aquatic areas (June 6, 2019) (Ex. 41).] Designing and locating a large hardrock mine in the headwaters of Bristol Bay poses insurmountable challenges that cannot be solved via the avoidance and minimization stages of mitigation[See supra Section 2.] or through compensatory mitigation.[See, e.g., Ex. 161 at 10 ("Despite the consideration of mitigation measures in modern impact assessment processes, mining continues to harm watersheds.").]

Compensatory mitigation could not successfully reduce the impacts to aquatic resources from mining the Pebble deposit, as in-kind and in-watershed opportunities are rare to non-existent. EPA correctly notes that "known compensation measures are unlikely to adequately mitigate effects . . . to an acceptable level." [Revised PD at 4-68 & C-1.] Compensatory mitigation for unavoidable impacts of mining the Pebble deposit would be "most appropriate[ly]" within the South Fork Kuktuli (SFK), North Fork Kuktuli (NFK), and Upper Talarik Creek (UTC) watersheds "as these locations would offer the greatest likelihood that compensation measures would replace the 'suite of functions typically provided by the affected aquatic resource.'" [Revised PD at C-7, quoting 40 C.F.R. § 230.93(c)(2), citing Yocom and Bernard 2013].] But these watersheds are already pristine, such that there is virtually no opportunity for such mitigation. And compensatory mitigation in adjoining watersheds "would likely fail to ensure that wetland, stream, and associated fish losses in the SFK, NFK, and UTC watersheds would be addressed" and "would not address impacts to the subsistence fishery where users depend on a specific temporal and spatial distribution of fish to ensure nutritional needs and cultural values are maintained." [Id. at C-7, citing EPA 2014: Chapter 12.]

After evaluating a myriad of potential EPA compensatory mitigation options, including those advanced by PLP, [Id. at 4-67, 4-68, 4-73.] EPA has reached the only reasonable conclusion: they are all "unlikely to

adequately mitigate effects described in this proposed determination to an acceptable level.”[Id. at C-33.]

EPA Response

The additional information provided by the commenter provides further support for EPA’s conclusions in Section 4.3.2 and Appendix C of the FD regarding the challenges of adequately mitigating impacts of the nature and magnitude described in the FD.

4.1.7 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 46-48)

C. Impacts from the Proposed Pebble Mine Cannot Be Avoided, Minimized, or Mitigated

Throughout the permitting process, Army Corps closely involved EPA in the development and assessment of potential avoidance and minimization measures for PLP’s 2020 Mine Plan. [Pebble ROD, attachment B2, p. 3 (“USFWS and EPA were invited to recommend additional avoidance and minimization measures. These measures were considered by the applicant, and those that the applicant agreed to adopt were considered [in the ROD].”). See also, EPA Memorandum to File, Subject: EPA’s decision to termination Clean Water Act Section 404(q) dispute resolution process regarding proposed Pebble Mine, Bristol Bay watershed, Alaska (POA-2017-00271)(June 12, 2020), enclosed at Appx. C, at pp. 2686 to 2701.] Despite these efforts, as properly determined by the Army Corps, the avoidance and minimization measures incorporated into PLP’s 2020 Mine Plan “do not reduce the levels of impact to below significant.” [Id, p. 2.] As the Army Corps explained in its Record of Decision:

After consideration of the proposed avoidance and minimization measures, as well as the remaining unavoidable impacts, and based upon the determination that the discharge of dredged or fill material would cause significant degradation to the aquatic ecosystem, specifically at the mine site, USACE determined that compensatory mitigation is required to offset the remaining unavoidable temporary and permanent impacts to the aquatic environment. [Id, p. 3.]

As such, the Army Corps closely assessed PLP’s Final Compensatory Mitigation Plan and concluded that the plan was “inadequate to overcome the significant degradation identified in the 404(b)(1) analysis rendering the permit application noncompliant with the 404(b)(1) Guidelines.” [Pebble ROD, at p. 6-5.] Specifically, according to the Army Corps, PLP’s Final Compensatory Mitigation Plan submitted to the agency in November 2020 failed to satisfy regulatory standards and criteria for nine separate reasons. PLP’s plan (1) lacked sufficient detail commensurate with the scale and scope of impacts; (2) failed to propose restoration or enhancement and failed to obtain a waiver using a preservation approach; (3) the amount of compensatory mitigation was insufficient to offset impacts; (4) failure to include a site protection instrument and baseline data necessary to utilize a preservation approach; (5) failure to submit a maintenance plan; (6) failure to submit ecological performance standards; (7) failure to submit sufficient monitoring plan; (8) failure to submit a detailed plan for long-term management; and (9) failure to provide financial assurances. [Pebble ROD, attachment B-6, Memorandum for the Record (Nov. 9, 2020).]

In its 2022 PD, EPA codifies the Army Corps' finding that PLP's compensatory mitigation plan "is inadequate to overcome the significant degradation identified in the 404(b)(1) analysis rendering the permit application noncompliant with the 404(b)(1) Guidelines." [Pebble ROD, at p. 6-5.] As EPA correctly states, PLP's plans "fail to adequately mitigate the adverse effects that are the subject of this proposed determination to an acceptable level." [2022 PD at p. 4-67.] BBNC agrees with EPA's analysis of PLP's compensatory mitigation and the conclusion that Pebble's impacts cannot be mitigated. [2022 PD at pp. 4-67 to 4-73.]

Moreover, we agree with EPA's conclusion, based on the permitting record and the 2014 Watershed Assessment, that additional potential compensatory mitigation measures are also unlikely to adequately mitigate the effects of mining the Pebble deposit to an acceptable level. [2022 PD at p. ES-16.] EPA correctly notes that "known compensation measures are unlikely to adequately mitigate effects . . . to an acceptable level." [2022 PD at 4-68 & C-1.] Adequate compensatory mitigation for unavoidable impacts of mining the Pebble deposit would be "most appropriate" within the South Fork Koktuli (SFK), North Fork Koktuli (NFK), and Upper Talarik Creek (UTC) watersheds "as these locations would offer the greatest likelihood that compensation measures would replace the 'suite of functions typically provided by the affected aquatic resource.'" [2022 PD at C-7, (quoting 40 C.F.R. § 230.93(c)(2), citing Yocum and Bernard 2013).] But these watersheds are already pristine, such that, as EPA has noted in the 2014 Watershed Assessment, there is virtually no opportunity for mitigation. Instead, as EPA correctly concludes, compensatory mitigation in adjoining watersheds "would likely fail to ensure that wetland, stream, and associated fish losses in the SFK, NFK, and UTC watersheds would be addressed" and "would not address impacts to the subsistence fishery where users depend on a specific temporal and spatial distribution of fish to ensure nutritional needs and cultural values are maintained." [Id. at C-7, citing BBWA, Chapter 12.]

EPA Response

As discussed in Section 4.3.2 of the FD, EPA conducted its own review of the two compensatory mitigation plans submitted by PLP (PLP 2020a, PLP 2020b) during its CWA Section 404 permit review process and based its findings on its review. The commenter expresses agreement with a number of EPA's conclusions in the PD regarding compensatory mitigation.

4.1.8 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 2)

On August 24, 2020, the Army Corps announced publicly that PLP's 2020 mine plan mine "could not be permitted," among other things, because of an inadequate compensatory mitigation plan. [U.S. Army Public Affairs, Army finds Pebble Mine project cannot be permitted as proposed (Aug. 24, 2020), https://www.army.mil/article/238426/army_finds_pebble_mine_project_cannot_be_permitted_as_proposed.] On November 20, 2020, the Army Corps formally denied PLP's permit application, finding that the proposed Pebble Mine project cannot be permitted under the Clean Water Act because its location, size,

and type pose unavoidable adverse impacts to Bristol Bay's pristine waters, salmon fisheries and the economic and subsistence benefits those fisheries provide.

EPA Response

See EPA's response to comment 4.I.1.

4.I.9 National Wildlife Federation (Doc. #2067, p. 10)

C. The inability to effectively mitigate the adverse effects of mining the Pebble deposit, as clearly documented in the revised PD, justifies more stringent restrictions to safeguard the Bristol Bay watershed from any large-scale mine.

The revised PD "provides a detailed technical evaluation" of the extensive array of mitigation measures suggested by Pebble Limited Partnership and other commenters "as having the potential to compensate for the nature and magnitude of adverse impacts on wetlands, streams, and fish from the discharge of dredged or fill material associated with mining the Pebble deposit." [Revised PD at C-1.] The technical evaluation examined the "likely efficacy, applicability, and sustainability" of these suggested mitigation measures. [Revised PD at C-8.]

Based on that detailed evaluation, the revised PD concludes that the "[a]vailable information demonstrates that known compensation measures are unlikely to adequately mitigate effects described in this proposed determination to an acceptable level." [Revised PD at C-1, C-33 (emphasis added).] The inability of these measures to effectively mitigate adverse impacts in the Bristol Bay watershed is not based solely on the magnitude of harm from the 2020 Mine Plan. To the contrary, the measures were found to be ineffective for a variety of reasons ranging from the lack of mitigation opportunities because of the pristine nature of the watershed to proposed measures not providing meaningful habitat improvements to other proposed measures that would harm salmon habitat.

The documented inability to effectively mitigate the adverse effects of large-scale mining in the pristine Bristol Bay watershed, in combination with the many unacceptable adverse impacts that any size mine would create, justifies more stringent restrictions to safeguard the Bristol Bay watershed from any large-scale mine.

EPA Response

Rather than focusing on the size of the mine, the FD focuses on the environmental effects on anadromous fishery areas from discharges of dredged or fill material associated with developing the Pebble deposit. Compensatory mitigation is discussed in Section 4.3.2 and Appendix C of the FD.

4.I.10 Dan Dunaway (Doc. #2667-29, p. 68-69)

One of the things that have concerned me from the beginning is Northern Dynasty was trotting out a bunch of solutions and, and, and apparent mitigating things that, at the time I happened to reading,

weren't working in Canada. And they continue to bring out supposed solutions that sometimes don't hold up under scrutiny. So I have a deep distrust.

EPA Response

Appendix C of the FD references a number of studies done in Canada that document the challenges encountered in that country in efforts to attempt to mitigate adverse impacts to fish habitat.

4.I.11 Bee Long (Doc. #0165, p. 1)

Compensatory mitigation will NOT solve the problems resulting from the impacted resources. Compensatory mitigation will not work to restore the land. We, the public, know this from past restoration efforts. Experience and research leads to the conclusions that the attempted restoration of wetlands may NEVER reach the same level of function as the natural wetlands that they replace. So the actions must be prevented

EPA Response

EPA agrees with the commenter that the two compensatory mitigation plans submitted by PLP (PLP 2020a, PLP 2020b) would not mitigate the impacts described in the PD to an acceptable level. This is discussed in Section 4.3.2 of the FD. Appendix C of the FD summarizes challenges encountered in efforts to attempt to mitigate adverse impacts to wetlands and other types of fish habitat.

4.I.12 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 17-18)

Comments on the potential for mitigation to be successful in reducing the impacts on aquatic resources from discharges of dredged or fill material associated with mining the Pebble deposit.

When denying PLP's Clean Water Act permit application, the Army Corps appropriately concluded that the Pebble Mine would cause significant degradation of the aquatic ecosystem and was not in the public interest. [U.S. Army Corps of Engineers, Record of Decision for Application Submitted By Pebble Limited Partnership (Nov. 20, 2020) [hereinafter PLP ROD].] The Army Corps also rejected PLP's proposed compensatory mitigation plan, correctly determining that, among other fatal flaws, "the level and detail of the mitigation plan is not commensurate with the scale and scope of the impacts." [U.S. Army Corps of Engineers, Memorandum for the Record, Compliance Review of Final Report, Pebble Project Compensatory Mitigation Plan in accordance with 33 C.F.R. 332, POA-2017-00271 (Nov. 9, 2020) (Available as attachment B6 in the PLP ROD).]

There is no question that, if built, the Pebble Mine would cause or contribute to significant degradation of the aquatic system and violations of water quality standards. The Pebble Mine would result in unacceptable adverse effects, including destroying over 2,113 acres of wetlands and 99.7 miles of streams in a pristine watershed. [Revised Proposed Determination at ES-10.] Under these

circumstances, mitigation is impossible. According to mining expert Richard Borden, “given the pristine environment of the Bristol Bay region, it would be impossible for any mine developer to find sufficient restoration or enhancement projects within the immediate region to offset the large unavoidable impacts associated with mining.” [Borden letter (Aug. 12, 2022) at 3.] Human intervention cannot recreate a pristine ecosystem, and no compensatory mitigation measures can adequately compensate for the destroyed aquatic resource.

Indeed, PLP has not demonstrated—and cannot demonstrate—that it could adequately mitigate the unacceptable adverse effects of the project. [Revised Proposed Determination at 4-68 & C-1.] The compensatory mitigation plans provided by PLP are, according to Borden, “grossly inadequate and clearly would only offset a small fraction of the wetlands and streams that would be lost to any mine development.” [Borden letter (Aug. 12, 2022) at 3.] EPA properly concluded that compensatory mitigation is “unlikely to adequately mitigate effects...to an acceptable level.” [Revised Proposed Determination at C-33.]

EPA Response

EPA agrees with the commenter that the two compensatory mitigation plans submitted by PLP (PLP 2020a, PLP 2020b) would not mitigate the impacts described in the PD to an acceptable level. This is discussed in Section 4.3.2 of the FD.

4.I.13 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 36-52)

VI. EPA Overstates Adverse Effects by Failing to Fully Consider Mitigation

EPA overstates the potential impacts of the Pebble Project by omitting key mitigation that would be required for any future development. First, because EPA is proposing to act before USACE has indicated its intent to issue a permit and before the state permitting agencies completed their review processes on the proposed permit application, the mitigation that would have been imposed by USACE and under the state permits and CWA Section 401 decisions was omitted from EPA’s consideration. Second, because EPA rejected all potential compensatory mitigation, no compensatory mitigation was factored into the analysis. EPA’s failure to factor in mitigation that would be required under state and federal permitting means the Revised Proposed Determination is based on future development that could never be authorized under any current permitting regime. In essence, EPA has manufactured another hypothetical project doomed to fail at the outset. This is improper.

A. EPA Failed to Factor in the Mitigation that would be Imposed by State Permitting

The State of Alaska has a robust permitting program for mines, which would have imposed significant mitigation on any mine plan for the Pebble Deposit, including mitigation for protecting aquatic resources. The ADF&G has permitting authority over activities potentially impacting fishery resources, including activities in anadromous streams. ADF&G is the expert agency on anadromous fish habitat in Alaska and the agency’s expertise includes determining the appropriate mitigation for impacts to anadromous or resident fish waterbodies. For example, any discharge permit issued by ADF&G would

include conditions to ensure that the temperature of the discharge would not have a negative effect on fish. EPA ignores this basic fact of permitting and asserts that water treatment plant (“WTP”) discharges would significantly alter downstream water temperatures. [Id. at 4-40.] By failing to account for the mitigation that would be required by ADF&G, EPA overstates the potential impacts of the project to achieve its desired outcome.

In addition, EPA’s findings fail to include the State’s input under Section 401 of the Clean Water Act. The State of Alaska’s Section 401 certification would include conditions that would have further reduced any adverse impacts to aquatic resources. The conditions imposed by the State under Section 401 would further mitigate any potential downstream impacts from the mine site. Thus, for example, in Donlin, the USACE Alaska District factored in the permit conditions established by the State of Alaska in assessing the compliance of the Project with Section 404. [Donlin ROD at 6-19 to 6-21.] Based in part on the Section 401 conditions, the District found that, “[w]ith Applicant design features and inclusion of special conditions, the proposed Project would comply with this factor of the Guidelines.” [Id. at B2-22.] In this case, EPA has failed to explain why potential fishery impacts support any 404(c) action, since the FEIS found no such impact, and the Section 401 certification would even further ensure aquatic resources were protected. This highlights the premature nature of EPA’s Revised Proposed Determination. By acting now, with an incomplete picture of the conditions that would be imposed by USACE and the State if the Corps issued a notice of intent to grant the permit, EPA has manufactured a hypothetical project with overstated impacts that it can invoke to justify its Revised Proposed Determination.

B. EPA Failed to Incorporate Any Compensatory Mitigation into its Analysis

EPA claims that 404(c) “does not direct EPA to consider mitigation.” [Revised Proposed Determination at 4-67.] EPA also asserts that mitigation is not “relevant” because “there is no permit requiring mitigation and ... USACE expressly rejected PLP’s proposed mitigation.” [Id.] However, any future permit for development of the Pebble Deposit would include compensatory mitigation. And since EPA’s Revised Proposed Determination restricts future development that might be permitted by USACE, EPA must factor in compensatory mitigation. EPA’s failure to do so improperly stacks the deck against the Pebble Project – EPA assesses project impacts without factoring the countervailing mitigation that would be imposed by any future permit. EPA’s failure to develop and assess the net effects of a scientifically credible compensatory mitigation program designed to address residual impacts on aquatic habitat and wetlands invalidates the Agency’s proposed regulatory action. See *Motor Vehicle Mfrs.*, 463 U.S. at 43 (agency action is arbitrary and capricious where agency “entirely failed to consider an important aspect of the problem”). [To the extent that EPA’s rejection of any compensatory mitigation is based on the “pristine nature” of the Bristol Bay Region, EPA’s contention that, if nothing needs restoration, then mitigation opportunities do not exist is not supported by law, precedent, or policy.]

Compensatory mitigation is a critical component of the Section 404 program, with a long history of demonstrated ecological value. EPA and USACE issued a final rule on compensatory mitigation in 2008, based on a directive for such a regulation in the National Defense Authorization Act For Fiscal Year

2004, Pub. L. 108–136 § 314(b) (2003) (“NDAA”). In that Act, Congress instructed the USACE to maximize the opportunities for compensatory mitigation:

To the maximum extent practicable, the regulatory standards and criteria shall maximize available credits and opportunities for mitigation, provide flexibility for regional variations in wetland conditions, functions and values, and apply equivalent standards and criteria to each type of compensatory mitigation.

NDAA § 314(b)(1) (emphasis added). In the subsequent rulemaking issued jointly by EPA and the USACE, the agencies explained, “compensatory mitigation is a critical tool in helping the federal government to meet the longstanding goal of ‘no net loss’ of wetland acreage and function.” USACE & EPA, Compensatory Mitigation for Losses of Aquatic Resources, 73 Fed. Reg. 19594, 19594 (Apr. 10, 2008) (“2008 Mitigation Rule”). Therefore, based on the statute and EPA’s own regulations and policy, EPA must fully consider the potential for compensatory mitigation to offset unavoidable project effects on aquatic habitat and wetlands for the Pebble Project.

In addition, USACE and EPA also have specifically recognized that there must be particular flexibility in compensatory mitigation policy for Alaska, given its unique physiographic characteristics.

[Memorandum from Robert H. Wayland, III, to Alvin L. Ewing, Alaska Operations Office, Env’tl. Prot. Agency Region X, Statements on the Mitigation Sequence and No Net Loss of Wetlands in Alaska at 2 (May 13, 1994), <https://dec.alaska.gov/media/13267/1994-wetlands-initiative.pdf>.] The agencies clarified the regulatory flexibility that would be applied to reflect unique circumstances in Alaska, including that “avoiding wetlands may not be practicable where there is a high proportion of land in a watershed or region which is wetlands”:

The Clean Water Act Section 404 regulatory program provides a significant degree of flexibility in making permit decisions to reflect circumstances throughout the Nation, including Alaska. Where it is not practicable to avoid wetlands, or to restore or create wetlands, such measures are not required under the Section 404 program. . . . Given this flexibility, Alaskans should be assured that discharges of dredged or fill material into wetlands will be evaluated in a reasonable manner, consistent with the National goal of fair, flexible, and effective protection of the Nation’s wetlands resources. [Id. at 5 (emphasis added).]

In other words, USACE and EPA recognized that Alaska is a unique ecological setting, where avoiding wetlands would rarely be possible and where compensatory mitigation would require more flexibility. The point of the memorandum was to be clear that the fact that Alaska’s wetlands are largely intact would not mean that development would be precluded or that Section 404 permits could not be approved. Instead, the Section 404 program requirements would need to be applied more flexibility in Alaska to ensure that Section 404 permits could be evaluated “reasonably.”

The preamble to the 2008 Mitigation Rule explicitly recognized the continuing applicability of the May 13, 1994 guidance regarding Alaska. 73 Fed. Reg. 19594, 19619. In addition, the preamble to the 2008 Mitigation Rule noted that:

Flexibility in compensatory mitigation requirements is needed to account for regional variations in aquatic resources, as well as state and local laws and regulations. There also needs to be flexibility regarding the requirements for permittee-responsible mitigation. Practicability is an important consideration when determining compensatory mitigation requirements.

Id. at 19617. This policy of flexibility was further solidified with the 2018 “Memorandum of Agreement Between the US Environmental Protection Agency (EPA) and the Department of the Army Concerning Mitigation Sequence for Wetlands in Alaska under Section 404 of the Clean Water Act” (“2018 Alaska MOA”). [The 2018 Alaska MOA replaced the 1992 and 1994 Guidance. 2018 Alaska MOA at 1.]The 2018 Alaska MOA provides guidance regarding flexibilities that exist in the mitigation requirements for 404 permits, and how those flexibilities should be applied in Alaska:

Given the unique climatological and physiographic circumstances found in Alaska, it is appropriate to apply the inherent flexibility provided by the guidelines to proposed projects in Alaska. Applying this flexibility in a reasoned, commonsense approach will lead to effective decision-making and sound environmental protection in Alaska. [Id. at 3.]

The Alaska District’s Compensatory Mitigation Thought Process further explains the District’s approach to compensatory mitigation. The Thought Process document provides that “it may be appropriate to identify compensatory mitigation options over a larger watershed scale given that compensation options are frequently limited at a smaller watershed scale” in Alaska. [Compensatory Mitigation Thought Process at 10.]

Ignoring legal precedent and its own past practice, EPA asserts that it can make a Section 404(c) determination without factoring in compensatory mitigation. However, Congress has directed that compensatory mitigation be fully and flexibly considered under Section 404. See NDAA § 314(b). And EPA and USACE have implemented that requirement in their Section 404 regulations and policies. See 33 C.F.R. § 325.1(d)(7) (404 application to include compensatory mitigation statement); 33 C.F.R. § 332.1(c)(3) (“Compensatory mitigation for unavoidable impacts may be required to ensure [compliance] with the Section 404(b)(1) Guidelines.”); see also 40 C.F.R. § 231.2(e) (incorporating “relevant portions of the section 404(b)(1) guidelines” into the definition of adverse effect in EPA’s Section 404(c) regulations). Given Congress’s clear direction, and EPA’s own regulatory requirements, the Agency cannot claim that Section 404(c) is exempt from Congress’s mandate to consider compensatory mitigation in the context of Section 404.

EPA’s argument that it can ignore compensatory mitigation also ignores its own longstanding practice of evaluating compensatory mitigation in past 404(c) actions. See, e.g., EPA, Modification to the 1985 Clean Water Act Section 404(c) Final Determination for Bayou aux Carpes at 11 (May 28, 2009) (“Based on the minimum mitigation that the Corps has committed to . . . EPA believes that any discharges . . . would not result in unacceptable adverse effects.”); EPA, Modification of the March 21, 1988, Russo Development Corporation Section 404(c) Final Determination at 3 (Sept. 7, 1995) (amending final determination based on compensatory mitigation plan). EPA’s argument that it can ignore compensatory mitigation in this case is therefore baseless.

C. EPA's Reasons for Rejecting PLP's Proposed Compensatory Mitigation Plans are Baseless

EPA's identification of alleged deficiencies in PLP's CMP does not mean that EPA can assume no compensatory mitigation would be imposed in a future permit. At a minimum, EPA should have factored in some mitigation into the analysis.

EPA evaluated two compensatory mitigation plans submitted by PLP to USACE. [PLP actually developed a series of six different CMPs during the three-year 404 permitting process in an attempt to respond to changing direction from the USACE Alaska District. Since EPA only discusses two of the CMPs in the Revised Proposed Determination, we will only respond regarding those two specific plans.] EPA asserts that "both plans fail to adequately mitigate the adverse effects . . . to an acceptable level." [Revised Proposed Determination at 4-67.] Based on this erroneous position, EPA based the Revised Proposed Determination on the unmitigated impacts of the 2020 Mine Plan, and the unmitigated impacts of any future mine plan. However, EPA's basis for failing to factor in any compensatory mitigation is entirely unsupported.

1. EPA's Reasons for Rejecting the January 2020 CMP Are Baseless

PLP spent significant time and resources developing compensatory mitigation options for the Section 404 permitting process, including a series of mitigation plans to respond to changing direction from the USACE Alaska District. In January 2020, PLP submitted a draft CMP that was developed in response to District guidance and precedent. Since no on-site compensatory mitigation opportunities are available due to the Pebble site's remoteness and the lack of disturbance in the watersheds, the January 2020 CMP focused on off-site opportunities that benefit anadromous streams and water quality in the larger watersheds associated with the Project. The CMP identified three compensatory mitigation opportunities that were available and practicable for the Project in the larger affected watersheds:

Community wastewater improvement projects: off-site, out-of-kind water quality restoration opportunities that would enhance water quality in the Bristol Bay region by improving wastewater collection and treatment systems in drainages with identified needs. Discharges from properly designed systems could improve the quality of water in poorly functioning drainages downstream of the discharges, improving regional water quality. [PLP, Pebble Project Draft Compensatory Mitigation Plan at 30, Dkt. ID EPA-R10-OW-2022- 0418-0014 (Jan. 2020).]

Removing Pacific salmon fish passage barriers: removing Pacific salmon fish passage barriers associated with undersized or damaged culverts in the Cook Inlet and Bristol Bay areas. A large amount of Pacific salmon habitat can be restored through a single fish passage improvement. The proposed plan would compensate the Project's riverine wetlands losses by rehabilitating up to 8.5 miles of streams containing Pacific Salmon habitat through replacement of undersized or damaged culverts with a substantial multiplier. [Id. at 30-31.]

Removing marine debris from Kamishak Bay: removing marine debris accumulated on beaches in Kamishak Bay in Cook Inlet. Marine debris pose hazards to wildlife through entanglement and ingestion

and can damage habitat. The proposal would result in the rehabilitation of 7.4 miles of coastal marine wetlands and marine habitat in Kamishak Bay. [Id. at 31.]

PLP's proposed combination of wastewater facility improvement projects, restoration of fish habitat, and cleanup of coastal habitats constituted a robust and practical mitigation approach that fully met Section 404's requirements.

EPA faults the January 2020 CMP because much of the work would occur in other watersheds. [Revised Proposed Determination at 4-69.] But as discussed above, USACE and EPA guidance specifically recognize that off-site and out of kind mitigation is often appropriate in Alaska, given the limited restoration opportunities. Since no on-site compensatory mitigation opportunities are available (other than preservation) due to the Pebble site's remoteness and the lack of disturbance in the watersheds, the January 2020 CMP appropriately focused on off-site opportunities that benefit anadromous streams and water quality in the larger watersheds associated with the Project.

The CMP's off-site and out-of-kind compensatory mitigation proposal was also consistent with mitigation proposed and approved for other major development projects in Alaska, including:

* Oil Search Alaska's CMP for oil exploration and development activity in the North Slope includes a project to improve village wastewater treatment facilities in the native village of Nuiqsut. [USACE, Record of Decision & Permit Evaluation, Nanushuk Development Project at 31, POA-2015-00025 (May 14, 2019).]

* Alaska LNG's CMP includes wastewater treatment improvement projects. [Alaska LNG, Wetlands Compensatory Mitigation Plan at 23 (Nov. 8, 2019), <https://www.poa.usace.army.mil/Portals/34/docs/regulatory/publicnotices/2019/Attachment%206%20-%20Wetlands%20Compensatory%20Mitigation%20Plan.pdf?ver=2019-12-26-182619-223>.]

* Donlin Gold's CMP includes permittee-responsible mitigation preservation outside of the impact watershed and far from the project site because of the lack of sufficient available mitigation bank and in-lieu fee program credits. [See Donlin ROD § 6.2.]

* For the Greater Mooses Tooth Two Development Project, Alpine Satellite Development, USACE determined that mitigation in the form of avoidance and minimization measures were sufficient and compensatory mitigation was not required for the project. Nonetheless, the applicant requested USACE include, as a special condition to the permit, a project to help restore stream flow at culverts located south of Nuiqsut. [USACE, Proposed Greater Mooses Tooth Two Development Project Joint Record of Decision and Permit Evaluation at D5.1 (Oct. 2018), https://eplanning.blm.gov/projects/nepa/65817/160123/195768/Record_of_Decision_with_cover_page.pdf.]

EPA did not initiate a Section 404(c) veto in these instances and EPA has not articulated any reason why the mitigation proposed by PLP is insufficient when it failed to veto these other large development proposals in Alaska.

EPA has therefore failed to justify its complete rejection of the January 2020 CMP. Even if EPA found some elements of the plan inadequate, EPA should have factored in some combination of compensatory mitigation into its analysis in the Revised Proposed Determination. EPA's failure to do so is arbitrary as it is without question that compensatory mitigation would be required for any future mine plan in the area.

2. EPA's Reasons for Rejecting the November 2020 CMP Are Equally Baseless

EPA's complaints about the November 2020 CMP are equally unavailing. The November 2020 CMP was developed based on USACE's direct guidance. In an August 20, 2020 letter, the District informed PLP that "...in-kind compensatory mitigation within the Kaktuli River watershed will be required to compensate for all direct and indirect impacts caused by discharges into aquatic resources at the mine site." [Letter from D. Hobbie, USACE Regional Regulatory Division Chief, to J. Fueg, PLP (Aug. 2020) ("USACE August 2020 CMP Letter").]

PLP's November 2020 CMP was compiled based on the input from the District, as well as the 2008 Compensatory Mitigation Rule, 33 C.F.R. 332, and Alaska-specific compensatory mitigation guidance. To compensate for the permanent and unavoidable impacts to aquatic resources associated with the mine site, transportation corridor, and port site, PLP proposed preservation of a 112,445-acre Kaktuli Conservation Area in the Kaktuli River watershed. [November 2020 CMP at 7.] The preservation of the Kaktuli Conservation Area would allow the long-term protection of a large and contiguous ecosystem that contains highly valuable aquatic and upland habitats, including 31,026 acres of aquatic resources within the national importance-designated Kaktuli River watershed. Preservation of the Kaktuli Conservation Area would also remove the threat to, and prevent the decline of, aquatic resources in the Kaktuli River watershed from potential future actions, therefore ensuring the sustainability of fish and wildlife species that depend on these aquatic resources, while protecting the subsistence lifestyle of the residents of Bristol Bay and commercial and recreational sport fisheries. In response to the District's direction, the mitigation work plan included implementation of Site Protection through a deed restriction, rather than a lease, and also included additional detail on monitoring, long-term management, and costs/financial assurance. [Id. at 9-12, 30.]

The 129-page CMP was submitted to the District on November 4, 2020. It took the District just five days to review the document and deem it "insufficient." PLP was not informed of the rejection of the CMP until it received the permit denial decision on November 25, 2020. Thus, PLP was never given an opportunity to address any of the alleged deficiencies listed by the District.

EPA states that it "agrees" with the bases cited by USACE for rejecting the November 2020 CMP. However, if EPA had taken a closer look at the slap-dash "deficiencies" listed by USACE in the ROD, it would have readily seen that they are counter to USACE guidance and precedent. In fact, some of the "deficiencies" are factually incorrect or are based on a failure to review the entire CMP. As explained below, none of the alleged deficiencies listed by USACE or EPA justify rejection of the November 2020 CMP.

Port Site Mitigation: EPA cites USACE's finding that "[n]o compensatory mitigation was proposed by the applicant to offset impacts from the port site." [Revised Proposed Determination at 4-70.] However, the proposed mitigation in the November 2020 CMP included the port impacts. On the very first page, the November 2020 CMP states "[f]or the purposes of this document, the port, road corridor, and the natural gas pipeline are collectively referred to as transportation infrastructure." [November 2020 CMP at 1.] Directly thereafter it provides that the proposed mitigation is to compensate for "the mine site and transportation corridor." [Id. at 2.] The November 2020 CMP therefore included the port site as part of the transportation corridor and impacts from the port site are included within the transportation facility impact numbers. [Id. at 1.] Section 6 of the November 2020 CMP describes how all project impacts, including transportation facility impacts, would be mitigated through preservation of the Koktuli Conservation Area. [Id. at 21.]

Preservation Waiver: EPA repeats the USACE District's assertion that a waiver is required since preservation is the sole form of compensatory mitigation in the November 2020 CMP. [Revised Proposed Determination at 4-70.] However, a preservation-only CMP was required based on the District's direction in its August 20, 2020 letter, which stated that "in-kind compensatory mitigation within the Koktuli River Watershed will be required to compensate for all direct and indirect impacts caused by discharges into aquatic resources at the mine site." [USACE August 2020 CMP Letter at 1.] Since it was well understood that opportunities for wetland restoration, creation or enhancement would not be reasonable due to existing conditions within the Koktuli watershed, the only option left was a preservation CMP. The August 20 letter thus documented that the District had already decided that preservation was the appropriate mitigation mechanism.

EPA fails to explain why PLP would need to specifically request a waiver after having been informed by USACE that preservation was required for compensatory mitigation. The regulations do not require that an applicant specifically request a waiver for a preservation-only CMP, instead providing:

Where preservation is used to provide compensatory mitigation, to the extent appropriate and practicable the preservation shall be done in conjunction with aquatic resource restoration, establishment, and/or enhancement activities. This requirement may be waived by the district engineer where preservation has been identified as a high priority using a watershed approach described in paragraph (c) of this section, but compensation ratios shall be higher.

33 C.F.R. 332.3(h)(2) (emphasis added). The regulations make no mention at all of requesting a waiver or the mechanism for making such a request. Instead, the regulation simply provides that the District can issue a waiver, without a specific request from the applicant, where preservation has been identified as a high priority using a watershed approach. That is exactly what occurred here – after multiple discussions with PLP concerning mitigation, the District directed PLP to use preservation based on a watershed approach.

Moreover, contrary to EPA's suggestion, the November 2020 CMP contains more than sufficient information to demonstrate the appropriateness of preservation. Section 332.3(h)(1) provides the criteria for when preservation may be used, and each is specifically addressed in the November 2020

CMP. [November 2020 CMP at 3-4.] To the extent a waiver request was necessary, the CMP therefore provided the basis for the request.

Level of Detail: EPA cites the USACE's assertion that the November 2020 CMP lacked sufficient detail. However, the detail required in a preservation-only CMP is significantly less than a CMP based on restoration or enhancement. For example, out-of-kind restoration like waste water treatment plant modifications may require significant detail to explain the existing status and conditions, the technical rehabilitation and improvement work proposed, and how the work will result in improved water quality. Preservation is a simpler mechanism that requires less explanation – the conservation area is being preserved from future disturbance to protect existing aquatic resources. While the scale of PLP's proposed preservation project is large, the fundamental details of the preservation-only plan are no different than for a smaller site – that is, what is the ecological value of the site, how is it threatened, and how the site will be protected and monitored. Furthermore, PLP's CMP does not skim on facts or detail – the 129-page CMP contains significant information and technical details, including all of the elements required under the regulations. The appendices to the CMP offer even greater detail. For example, the CMP includes a Kuktuli Conservation Area Wetlands and Waterbodies Delineation Report, which describes and delineates aquatic resource boundaries within the entire 112,445-acre conservation area.

Performance Standards: EPA also cites the District's finding that the CMP failed to include ecological performance standards, such as a functional assessment. [Revised Proposed Determination at 4-72.] In 2013, years before an application was even filed, PLP inquired about potential functional assessment methodologies that could be applied to the Pebble Project. The District responded in 2014, noting that there was no functional assessment methodology approved for Alaska. [See also FEIS Comment Response Matrix, Response to EPA Comments on DEIS § 4.22 at 1 (“A functional assessment will not be prepared for this proposed project or this EIS.”); FEIS Comment Response Matrix, Response to EPA Comments on DEIS § 3.22 at 9 (“There 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.”).] Thus, for consistency with the FEIS impacts analysis, and based on the unimpacted nature of the proposed preservation area, the metric of acres was used as an ecological performance standard in the CMP. The CMP also included acres of regionally important wetlands protected under the CMP for consistency with the FEIS.

Using acres as a performance standard is consistent with Section 332.5, which provides “[t]he approved mitigation plan must contain performance standards that will be used to assess whether the project is achieving its objectives ... so that the project can be objectively evaluated to determine if it is ... attaining any other applicable metrics (e.g. acres).” 33 C.F.R. § 332.5. The Preamble to the 2008 Mitigation Rule states that “[p]erformance standards will vary by aquatic resource type and geographic region” and “must be developed on a project-by-project basis.” 73 Fed. Reg. 19594, 19643. Because no functional assessment methodology had been approved, PLP was forced to rely on other means for valuation. Based on the unprecedented scale of the Kuktuli Conservation Area preservation project, and the unimpacted nature of the preserved wetlands, acres are an appropriate metric for ecological performance.

Indeed, other Alaska projects have been approved by the District, and not vetoed by EPA, where no functional assessment was required and acres were used as an appropriate substitute. For example, the Ambler Road ROD provides: “The implementing regulations do not require that a functional assessment be used to evaluate a permit application nor to determine compensatory mitigation...When no functional assessment is available ..., other measures such as acres, may need to be used.” [U.S. Dep’t of Interior et al., Ambler Road Joint Record of Decision at F-10 (July 2020), https://eplanning.blm.gov/public_projects/57323/200091317/20022329/250028533/Ambler%20Road%20Record%20of%20Decision.pdf.] Thus, EPA’s allegation that the CMP’s performance standards were “not compliant” is baseless.

Monitoring: EPA repeats USACE’s erroneous statement that only one monitoring event was included in PLP’s November 2020 CMP. [Revised Proposed Determination at 4-72.] In fact, PLP’s plan included monitoring every five years. The CMP provides:

To meet the requirements of 33 CFR 332.4(c)(11), a third party will conduct monitoring activities and submit reports to confirm compliance with the Site Protection Instrument. These activities will occur every 5 years following the completion of monitoring activities described in Section 10, Monitoring Requirements (33 CFR 332.4(c)(10)), starting in Year 10 (5 years after completion of the monitoring period) and continuing through Year 95. [November 2020 CMP at 28.]

The five-year schedule is based on the lack of expected change in the remote KCA area, balanced with safety considerations and an attempt to minimize noise disturbance from helicopter-supported site visits. The assertion that only one monitoring event was included in the November 2020 CMP is just plain wrong and demonstrates the lack of care EPA took in evaluating PLP’s proposed mitigation elements.

Site Protection Instrument and Length of Protection: EPA adopts the District’s allegation that a 99-year deed restriction is not “permanent protection.” [Revised Proposed Determination at 4-73.] However, the approach proposed by PLP is consistent with USACE regulations, guidance and precedent.

A deed restriction is specifically listed in the Site Protection Instrument Handbook as a suitable instrument for protection and has been used on other Alaska projects. [USACE, Compensatory Mitigation Site Protection Instrument Handbook for the Corps Regulatory Program at 6-7 (July 2016) (“Site Protection Instrument Handbook”), https://www.epa.gov/sites/production/files/2017-01/documents/site_protection_instrument_handbook_august_2016.pdf.] Deed restrictions are also listed in the Compensatory Mitigation Thought Process as appropriate preservation instruments. See Compensatory Mitigation Thought Process at 16.] For example, a deed restriction was deemed adequate for the preservation projects approved for the Donlin project – a CMP that the District provided to PLP as a model. [See Donlin ROD at 6-9 (“The applicant proposes to protect this area long term through deed restriction.”).] And, significantly, EPA did not seek to veto the Donlin project based on its use of a deed restriction.

Moreover, the CMP regulations contemplate that preservation of governmental land can be treated differently than private land. See 33 C.F.R. § 332.7(a). There are good reasons for this. Governmental agencies often have the resources to actively manage and police lands under a CMP as well or better than third parties enforcing rights under a conservation easement. Governmental agencies may also be restricted in their ability to assign or delegate management authority to third parties. This flexibility with respect to compensatory mitigation on governmental lands is recognized in the regulation governing the site protection instrument. See *id.* Because the Kuktuli Conservation Area would be on state land, the District and EPA are incorrect in singling out the absence of a third-party conservation holder as a reason for deeming the CMP “non-compliant.”

The suggestion that a deed restriction for 99 years is non-compliant because it is not “permanent” is also misplaced. The regulations require that the site protection instrument provide “long term” protection. *Id.* And more fundamentally, the relevant regulations contemplate different approaches for governmental lands than private lands. On governmental lands, CMPs can be effectuated through a wide variety of restriction, including land management plans, which by their very nature are not “permanent.” The regulations appropriately recognize that the goal of “long term protection” can be achieved through a range of options on governmental lands, recognizing the different tools available to federal, state, and local governments. *Id.* The Site Protection Instrument Handbook makes clear that deed restrictions are one of these options. [Site Protection Instrument Handbook at 6-7.] PLP had engaged in preliminary discussions with the State and identified a presumptive path, subject to State review and approval, to obtain an interest in the affected lands and impose the restrictions contained in the CMP through a deed restriction achieving “long term” site protection (for at least 99 years). The November 2020 CMP thus fully met applicable requirements for a preservation plan for governmental lands.

In the end, many of the “deficiencies” identified by EPA in the November 2020 CMP are actually implementation and documentation steps that are generally developed later in the process. For example, EPA faults the CMP for failing to provide a site protection instrument and supporting real estate information like title insurance, performance standards, support for the cost estimate, and financial assurance. [See Revised Proposed Determination at 4-70 to 4-73.] In point of fact, a description of all of these elements is included in the November 2020 CMP, including the site protection instrument (deed restriction), Maintenance Plan, Long-Term Management Plan, and Financial Assurance. [November 2020 CMP at 9-12, 25, 28-30.] The CMP properly describes the necessary elements and provides that some components will be submitted for approval closer to construction. The regulations provide that CMPs should include “a description” of the site protection instrument, maintenance plan, long-term management plan, and financial assurances. 33 C.F.R. § 332.4(c). The regulations do not require that these elements be finalized and approved at the time of the CMP or permit issuance, but instead “in advance of, or concurrent with, the activity causing the authorized impacts.” 33 C.F.R. § 332.7(a)(5). That is exactly the approach taken in PLP’s November 2020 CMP.

The rejection of the CMP on this basis is also contrary to precedent. In the Donlin ROD, for example, the District approved, and EPA did not veto, a project with a CMP that included a preservation component and specifically allowed the site protection instrument and other information to be developed and

submitted post-permit. [Donlin ROD at 6-16.] Instead of rejecting the Donlin CMP as “non-compliant,” the Donlin ROD includes special conditions that require the submission “prior to initiation of construction” of draft performance standards, a site protection instrument and supporting real estate information like title insurance, detailed cost estimates, draft financial assurance, and a long-term management plan. [Id. at 6-16 to 6-17.] The lack of these components did not preclude approval of the CMP in past cases like Donlin, and did not cause EPA to initiate the Section 404(c), yet somehow became fatal with respect to Pebble.

EPA also asserts the November 2020 CMP does not meet the requirements for preservation because it does not involve removal of threat. [Revised Proposed Determination at 4-72 to 4-73.] However, the CMP clearly documents the threat to the area to be preserved:

Development trends could result in a demonstrable threat of loss or substantial degradation due to human mineral extraction activities in both active and inactive claims that might not otherwise be expected to be restricted. Flour gold in the gravel bars has been documented in the lower Koktuli River at two inactive placer deposits (USGS 2020a). The upper reaches of the watershed include seven mineral prospects, including the Pebble deposit location, for copper, gold, molybdenum, silver, lead, and zinc (USGS 2020a). The U.S. Geological Survey (USGS) has identified the conservation area as having potential for the discovery of porphyry copper deposits, epithermal vein deposits, intermediate-level intrusion-related gold deposits, and a variety of other types of mineral deposits. [November 2020 CMP at 9.]

Active State mining claims held by PLP currently occupy 38,520 acres (34 percent) of the conservation area, while lapsed claims held by other parties previously occupied an additional 25,709 acres (23 percent) (Figure 3-2). ... Except for 17 privately owned Native allotments, all the lands in the watershed are owned by the State of Alaska, and are managed for multiple uses, including mining. The Koktuli Conservation Area will preserve 112,445 acres within the Koktuli River watershed and remove the threat of development from the protected areas. [Id.]

The November 2020 CMP also includes a full explanation of why preservation of the Koktuli Conservation Area is appropriate for preservation under the criteria of 33 C.F.R. 332.3(h). EPA’s assertion that the area to be preserved is not threatened is baseless.

EPA asserts the November 2020 CMP is deficient because “preservation does not replace lost ecological functions or area.” [Revised Proposed Determination at 4-73.] But preservation is a long-recognized compensatory mitigation strategy that is specifically identified as an option in USACE and EPA regulations and guidance. And preservation by design involves preserving other natural resources in the watershed, not replacing aquatic resources, functions or area directly impacted by the project. [See, e.g., EPA, The Mitigation Sequence Methods of Compensatory Mitigation at 1 (preservation appropriate “when the resources to be preserved contribute significantly to the ecological sustainability of the watershed”), <https://www.epa.gov/sites/default/files/2015->

[08/documents/compensatory_mitigation_factsheet.pdf](https://www.epa.gov/08/documents/compensatory_mitigation_factsheet.pdf).] The regulatory definition of “preservation” makes this clear, noting that “preservation does not result in a gain of aquatic resource area or functions.” 33 C.F.R. § 332.2.

Moreover, PLP proposed preservation of a 112,445-acre area would protect a large and contiguous ecosystem that contains highly valuable aquatic and upland habitats, including 31,026 acres of aquatic resources within the national importance-designated Koktuli River watershed. [November 2020 CMP at i.] This preservation area would protect resources, including streams and wetlands, with similar ecological functions to those impacted by the Pebble Project. EPA’s finding that preservation is inadequate in this case therefore appears to be another example of EPA applying a new standard to Pebble: preservation may be an option for other projects but not for Pebble. Moreover, as discussed above, a preservation CMP was developed based on the District’s direction. It rings hollow for EPA to assert that PLP’s plan was deficient for relying on preservation when PLP was specifically directed to undertake that approach.

Finally, EPA states that the November 2020 CMP is somehow deficient because impacts at the mine site could degrade the downstream resources proposed for preservation. [Revised Proposed Determination at 4-73.] These alleged impacts rely on the same faulty line of speculation regarding downstream impacts discussed above – the FEIS did not find significant downstream impacts from the project in any watershed, including in the Koktuli River watershed where the preservation area was proposed. [See, e.g., FEIS at 4.24-1 (“Mine site development would permanently remove approximately 22 miles of fish habitat in the North Fork Koktuli and South Fork Koktuli drainages. The loss of habitat is not expected to have a measurable impact on fish populations based on physical habitat characteristics and fish density estimates in the affected reaches.”) (emphasis added).] Moreover, even if there were some minor downstream impacts in the preservation area, this does not invalidate the preservation plan. The plan would still preserve the natural resources in the preservation area from any development, thus precluding any impacts from mining or other development in that area. In point of fact, there is always the potential for some indirect impacts to preservation areas, such as air deposition, noise or light pollution from nearby development. A preservation plan can never remove all potential impacts that might occur from adjacent development, and that is not a legal requirement. EPA’s efforts to impose more stringent requirements on the Pebble Project than are required under their own regulations and guidance render the Revised Proposed Determination arbitrary.

D. EPA’s Position that There are No Other Adequate Compensatory Mitigation Measures is Unsupported

EPA provides “for informational purposes” an Appendix C that cursorily addresses other potential compensatory mitigation. Based on its cursory review, EPA concludes that “known compensation measures are unlikely to adequately mitigate effects . . . to an acceptable level.” [Revised Proposed Determination at 4-68, 4-73, C-1.]

Section 4 of Appendix C provides an overall critique of compensatory mitigation for offsetting impacts to fish habitat. EPA characterizes research as finding that “simply achieving compliance with all regulatory

requirements does not ensure that ecological functions are replaced.” [Id. at C-31 to C-32.] Section 4 of Appendix C concludes with the following quote:

It is important to acknowledge that it is simply not possible to compensate for some habitats. Therefore, the option to compensate for HADDs [harmful alteration, disruption or destruction to fish habitat] may not be viable for some development proposals demanding careful exploration of alternative options including redesign, relocation, or rejection. [Id. at C-32.]

This sounds an ominous note for future projects – regulatory compliance may no longer be adequate and permit applications may be rejected because fishery habitat impacts cannot be adequately compensated for. But if current regulatory requirements are inadequate to meet the CWA’s intent, EPA and USACE must amend the applicable regulations and apply those new requirements prospectively. EPA’s attempt to instead apply new standards in a project-specific decision violates basic principles of administrative law. See, e.g., *Ford Motor Co. v. FTC*, 673 F.2d 1008 (9th Cir. 1981) (“To allow the order to stand ...would create a national interpretation [] and in effect enact the precise rule the FTC has proposed, but not yet promulgated.”); *Environmental Integrity Project v. EPA*, 425 F.3d 992, 996-97 (D.C. Cir. 2005) (unannounced reinterpretation of regulatory authority amounts to “a surprise switcheroo on regulated entities” and such a “flip-flop complies with the APA only if preceded by adequate notice and opportunity for public comment”); *W. States Petroleum Ass’n v. EPA*, 87 F.3d 280, 284 (9th Cir. 1996) (“EPA must clearly set forth the ground for its departure from prior norms so that we may understand the basis of the EPA’s action and judge the consistency of that action with the EPA’s mandate.”).

The upshot of EPA’s position appears to be that no compensatory mitigation, alone or in combination, could ever be adequate for impacts within the Bristol Bay watershed. But the Bristol Bay region is not a designated wilderness area that has been set aside from development and EPA does not have authority under the CWA to prevent all development in the region simply because it believes the area is a “high-quality habitat.” [Id.]

Moreover, EPA’s argument that the Bristol Bay watershed is too pristine for appropriate compensatory mitigation opportunities to be successfully permitted and implemented is contrary to practice and precedent. In Appendix C, EPA describes the kinds of compensatory mitigation techniques that are commonly used to offset residual project effects on fishery habitat and then, without any scientific basis, goes on to dismiss these techniques as “unlikely to adequately mitigate effects described in this proposed determination to an acceptable level.” [Id. at C-33.] EPA arrives at this conclusion despite decades of documented success of aquatic habitat enhancement projects in salmon ecosystems and regulations that permit both on- and off-site locations for compensatory mitigation as well as in-kind and out-of-kind mitigation measures. Many examples exist where human intervention has been proven to enhance fish productivity and abundance: by moderating extreme low or high flows, by enhancing naturally poor water quality conditions, by re-watering naturally de-watered habitat areas or re-connecting barren streams and ponds with otherwise high-quality conditions to existing habitat, etc. As fishery experts Bailey and Buell found:

The track record for successful mitigation of potential impacts to salmon and resident fish species in settings like that surrounding the Pebble deposit is very long, very comprehensive and very clear. Methods are available, they are appropriate, they do work, states and federal agencies are firmly committed to implementation of these methods over a wide array of landscapes, and outcomes are demonstrable and have been demonstrated. [Ex. 7, J.W. Buell & R.E. Bailey, Mitigation and EPA's Bristol Bay Watershed Assessment Final Assessment at 15-16 (Apr. 23, 2014).]

In fact, EPA itself has supported fish passage and habitat restoration projects. For example, EPA is part of the inter-agency Puget Sound Federal Task Force. The Task Force issued an action plan in May 2022 that "reflects high mutual interest and substantial coordination and collaboration in several areas, including, for example: riparian protection and restoration; fish passage restoration; restoration project permit streamlining; green infrastructure and stormwater; science and monitoring; and habitat protection and restoration." [Puget Sound Federal Task Force, Action Plan 2022-2026 at 2-3 (May 2022), <https://www.epa.gov/system/files/documents/2022-06/puget-sound-federal-task-force-action-plan-2022-2026.pdf>.] Thus, EPA's sudden complaints about fish passage and habitat restoration projects ring hollow.

EPA erroneously asserts that well-established and time proven aquatic habitat enhancement techniques just won't work in the Bristol Bay area and has refused to consider any benefits that might accrue from any compensatory mitigation plan. EPA's biased conclusions on compensatory mitigation result in a gross exaggeration of impacts and are thus an invalid basis for the proposed prohibition and restrictions. Any attempt to take regulatory action based on the existing record, and without full consideration of mitigation, would be arbitrary and capricious. See *Motor Vehicle Mfrs.*, 463 U.S. at 43 (agency action is arbitrary and capricious where agency "entirely failed to consider an important aspect of the problem").

In the end, EPA's position that no compensatory mitigation measures are adequate, even in combination, flies in the face of applicable mitigation guidance, which recognize that compensatory mitigation measures must be applied flexibly in Alaska given its high percentage of unimpacted wetlands. EPA's refusal to apply such flexibility sets a dangerous precedent that effectively precludes development, even on state lands specifically designated for mineral development. Moreover, it reverses years of work by the State, USACE and EPA to ensure a reasonable path forward for future development. The challenges regarding 404 permitting in Alaska are in no way unique to the Pebble Project, or even the Bristol Bay Region, and EPA's attempt to hold the Pebble Project to a stricter standard on compensatory mitigation will create significant regulatory uncertainty that will impact development throughout the State.

EPA Response

EPA reviewed both mitigation plans submitted by PLP as part of its Section 404 permit application; EPA also reviewed all other compensatory mitigation measures proposed by PLP over the past decade. Thus, EPA considered all compensatory mitigation measures proposed by PLP over the past decade in the PD and found that these measures would not mitigate the adverse effects described in the PD to an acceptable level (PD Section 4.3.2

and Appendix C). Despite EPA's specific request in the PD to provide comment regarding additional potential mitigation measures, neither PLP nor the State of Alaska proposed any additional potential mitigation measures as part of their review of the PD that were not already considered. For example, PLP and the State were fully engaged in the process to develop the FEIS and contributed extensively to the suite of mitigation measures included in the FEIS. Those mitigation measures were considered by EPA in the development of the PD.

Regarding its January 2020 CMP (PLP 2020a), PLP argues that off-site and out-of-kind compensatory should be acceptable in this case because such compensatory mitigation measures were acceptable in some other cases. This point fails to recognize that each project permitted under CWA Section 404 involves a different set of aquatic resource impacts, including differences in the amounts, types, and locations of aquatic resources being impacted as well as differences in the magnitude and permanence of the impacts. For this reason, as noted in Appendix C, decisions regarding the appropriate type, amount, and location of compensatory mitigation are made on a case-by-case basis and depend on a number of case-specific factors, including the type, amount, and location of aquatic resources being impacted. The PD explains why the proposed wastewater infrastructure projects would not mitigate the impacts described in the PD to an acceptable level. The PD notes that 94 percent of the 2020 Mine Plan's impacts on wetlands, streams, and other aquatic resources occur in the Koktuli River watershed. However, all of these infrastructure projects would occur in other watersheds, and none would address the substantial impacts in the Koktuli River watershed that are the subject of the PD.

Regarding its November 2020 CMP (PLP 2020b), PLP asserts that EPA's PD relies in part on USACE's rationale for rejecting the November 2020 CMP. This is not the case, and the FD is clear that EPA conducted its own review of the November 2020 CMP and based its findings exclusively on its own review. However, for informational purposes only, the FD does continue to include USACE's rationale for its rejection of the November 2020 CMP. Because EPA does not speak for USACE and did not rely on USACE's rationale for rejecting the November 2020 CMP, EPA cannot and need not respond to PLP's critiques of USACE's rationale.

Also, regarding its November 2020 CMP, PLP asserts that the regulations allow preservation that is not permanent. However, as discussed in the PD, while the general provisions for site protection in the regulations provide that the "overall compensatory mitigation project must be provided long-term protection through real estate instruments or other available mechanisms" (40 CFR 230.97(a)(1)), preservation can only be used in "certain circumstances," including when the resources to be preserved would be "*permanently protected* through an appropriate real estate or other legal instrument" (emphasis added) (40 CFR 230.93(h)(1)(iv)).

Also, regarding its November 2020 CMP, PLP argues that EPA claims the proposed Conservation Area to be preserved is not under threat. On the contrary, the PD recognizes that the proposed Conservation Area is indeed under threat and that the primary “threat of destruction or adverse modification” for the proposed Conservation Area comes from the destruction and degradation of streams, wetlands, lakes, and ponds upstream of the Conservation Area at the proposed mine site for PLP’s 2020 Mine Plan.

EPA agrees with PLP that preservation is a long-recognized compensatory mitigation strategy that is specifically identified as an option in USACE and EPA regulations and guidance, but that does not mean that preservation is appropriate in every case or that this particular preservation proposal must be acceptable in this case. As discussed in the FD, the discharges of dredged or fill material associated with construction and routine operation of the 2020 Mine Plan would result in significant aquatic resource losses and degradation. PLP’s November 2020 preservation proposal would not adequately mitigate the adverse effects on anadromous fishery areas to an acceptable level because discharges of dredged or fill material at the mine site would result in secondary effects that would degrade the aquatic resources proposed for preservation and thus would not adequately protect or maintain them.

PLP raises concerns regarding a reference in Appendix C of the PD to a study from Canada that found that achieving regulatory requirements does not always ensure desired ecological outcomes. To avoid any unnecessary confusion, EPA removed this reference since it was not essential to any of the findings in the PD, RD, or FD. The FD, including Appendix C, focuses on CWA Section 404 regulatory requirements regarding compensatory mitigation.

PLP describes Appendix C of the PD as providing a “ cursory review” of other potential compensatory mitigation measures, however PLP provides no specific comments on Appendix C’s review of any of these additional compensation measures. As part of its comments on the 2022 PD, PLP did attach a set of comments it submitted to EPA in 2014 as part of its review of the 2014 BBA and 2014 PD (i.e., Buell and Bailey 2014). EPA was in possession of these comments, had reviewed them as part of developing the 2022 PD, and addressed them in the 2022 PD. As part of developing Appendix C, EPA reviewed and considered every publication cited in Buell and Bailey (2014). Rather than explaining how the 2022 PD failed to address these comments from 2014, PLP simply re-submitted them.

As discussed in Appendix C, PLP relies heavily on the findings of Roni et al. (2008) and BPA (2013) in its comments to EPA regarding the 2014 BBA and the 2014 PD (including Buell and Bailey 2014), to support the following positions.

- The effectiveness of the stream rehabilitation techniques PLP had proposed at that time for use at the Pebble site is unequivocal and “settled science.”

- **These stream rehabilitation techniques should be expected to effectively rehabilitate streams permanently lost or degraded by mining at the Pebble deposit.**
- **These stream rehabilitation techniques should also be expected to result in demonstrable improvements in fish habitats in unaltered/undegraded streams that are currently part of an ecosystem that supports some of the world's most productive wild salmon runs.**

While PLP ultimately did not propose any of these measures during the CWA Section 404 permit review process (PLP 2020a, 2020b), its application of the findings of Roni et al. (2008) and BPA (2013) is inaccurate or oversimplified for the following reasons.

- **Type of restoration is different.** The effectiveness of the stream rehabilitation techniques reviewed in these papers is not settled science, and the success of these approaches is highly variable and context-dependent (Roni 2019); can be difficult to quantify (Richer et al. 2022, Rogers et al. 2022); and must address the suite of factors influencing fish populations (e.g., water quality, connectivity, hydrology, sediment).
- **Impact is different.** A large majority of the stream rehabilitation studies reviewed in these papers were conducted in moderate climates, for streams that had been impacted by forestry, agriculture, roads, or human activities other than mining. The papers were not a review of rehabilitation of streams impacted by mining. Where reviews of mined stream mitigation success have occurred in Appalachia, monitoring revealed that 97 percent of the projects reported suboptimal or marginal habitat (Palmer and Hondula 2014). These papers do not support use of these techniques to rehabilitate streams permanently lost or degraded by mining at the Pebble deposit.
- **Magnitude of restoration is likely not enough.** There is little evidence that unaltered and high-functioning habitats such as those in the affected watersheds can be made substantially better. Roni and Beechie (2012) observed that when and where positive responses to restoration have been observed, it has primarily been in systems where habitat had been greatly simplified due to land clearing, road building, channelization, or other human activities (e.g., Ogston et al. 2015). Furthermore, with the exception of downstream barrier removal (e.g., Pess et al. 2012) or barrier modification, EPA is aware of no instances where restoration approaches yielded significant improvements in fish populations in highly functional watersheds with minimal human modification. These papers do not support the position that existing unaltered/undegraded fish habitats could somehow be improved by use of these techniques.
- **Population response is not demonstrated.** Even in watersheds where significant habitat rehabilitation efforts have been undertaken, a corresponding salmon response at the population scale has been elusive (Bennett et al. 2016).

- **It is preferable to protect than to restore.** Many authors have stated that based on lessons learned regarding the difficulty of restoring fish habitat once it has been degraded, priority should always be given to protecting existing high-quality habitat because it is much more effective and efficient to protect than to restore (Beechie et al. 2008).

PLP asserts that “EPA’s position appears to be that no compensatory mitigation, alone or in combination, could ever be adequate for impacts within the Bristol Bay watershed.” This is not EPA’s position. The FD finds that neither of PLP’s two compensatory mitigation plans would adequately mitigate the adverse effects described in the FD to an acceptable level, and after reviewing additional potential compensation measures for informational purposes, available information demonstrates that known compensation measures are unlikely to adequately mitigate effects described in the FD to an acceptable level. Information and analysis in the FEIS and ROD support EPA’s findings in the FD and both documents are cited extensively by the FD. Attachment 1 of Appendix B in the FD addresses FEIS conclusions that appear to be inconsistent with the FD. Also see EPA’s responses to comments 9.0.1, 4.B.41, and 4.J.18.

4.I.14 Alaska and 13 other States (Doc. #0810, p. 5)

{In the course of this project, Region 10 has}

(...)

* failed to provide the project proponent a meaningful opportunity to work toward achieving an acceptable compensatory mitigation plan; [The Corps denied the project proponent’s revised compensatory mitigation plan a mere four days after it was received, strongly suggesting a lack of meaningful consideration by the Corps.]

EPA Response

For more than a decade, PLP has been exploring potential compensatory mitigation measures to address potentially unavoidable impacts associated with developing the Pebble deposit. The measures proposed by PLP over the past decade are reviewed by EPA in the compensatory mitigation section of the FD, as well as in Appendix C of the FD. See EPA’s response to comment 4.I.14.

4.J Basis for Proposed Determination

4.J.1 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0136, p. 1-4)

The 2022 PD makes factual findings that (1) fine scale habitat diversity produces fine scale genetic diversity and fine scale population structures that result in the portfolio effect which stabilizes

salmon returns, and (2) the 2020 Mine Plan would result in the following adverse effects: (a) loss of 8.5 miles of anadromous streams, (b) loss of 91.2 miles of tributaries and others streams that support anadromous streams, (c) loss of 2113 acres of wetlands, lakes and ponds that support anadromous streams, and (d) adverse changes in monthly average streamflows greater than 20 percent in 29 miles of anadromous streams.

The 2022 PD then proposes a two-part 404(c) determination which applies (1) post-application to the Pebble Limited Partnership's 2020 Mine Plan for the Pebble deposit, for which the U.S. Army Corps of Engineers has already denied a permit, and (2) pre-application to future mine plans yet to be submitted for mining the Pebble deposit.

First, with respect to the 2020 Mine Plan, the 2022 PD proposes to find that those adverse effects are "unacceptable" and to prohibit discharges associated with the 2020 Mine Plan. Such a finding of unacceptability and the resulting prohibition arise from the nexus of the findings about the portfolio effect and the amounts of harm (adverse effects) caused by the 2020 Mine Plan. Therefore, the finding of unacceptability and the resulting prohibition are rationally connected to the findings about the portfolio effect and the levels of harm surpassing what might be acceptable in light of the findings about the portfolio effect.

Second, with respect to future mine plans for the Pebble deposit, the 2022 PD proposes to use the levels of harm caused by the 2020 Mine Plan as, in effect, a dividing line, such that (1) if the adverse effects are similar or greater in nature and magnitude compared to those of the 2020 Mine Plan, then the 2022 PD would restrict, in some manner that remains unclear, the discharges in a larger defined area, and (2) if the adverse effects are not similar or greater in nature and magnitude compared to those of the 2020 Mine Plan, then the 2022 PD would not restrict the discharges, in which case, an application for a discharge permit could proceed in the normal permitting process on the assumption that such lesser adverse effects might be acceptable, or at least that the permitting process would determine whether that is so.

With respect to adverse effects similar or greater in nature and magnitude compared to those of the 2020 Mine Plan, the 2022 PD would restrict discharges because their adverse effects would be unacceptable for the same reasons they are unacceptable for the 2020 Mine Plan. Hence, the finding of unacceptability and the resulting restriction arise, likewise, from the nexus of the findings about the portfolio effect and the amounts of harm (adverse effects) caused by meeting or exceeding the harms caused by the 2020 Mine Plan. Therefore, the finding of unacceptability and the resulting restriction (whatever forms it may take is unclear) are rationally connected to the findings about the portfolio effect and the levels of harm surpassing whatever could be acceptable levels of harm in light of the findings about the portfolio effect.

However, with respect to adverse effects not similar or greater in nature and magnitude to those of the 2020 Mine Plan, the 2022 PD implies that the restriction(s) would not apply because such effects might be acceptable under the permitting process. This aspect of the 2022 PD is not rationally connected to the

findings about the portfolio effect, because (1) this aspect of the 2022 PD is based solely on the adverse effects being less, by some indeterminate measure, than those of the 2020 Mine Plan, and (2) nothing in the 2022 PD addresses whether any future mine plan that causes less harm than the 2020 Mine Plan would result in acceptable or unacceptable effects.

It is one thing for EPA to decide to restrict discharges associated with future mine plans when the harms meet or exceed those of the 2020 Mine Plan. It is another thing for EPA to decide, with respect to all future mine plans, to use the levels of harm caused by the 2020 Mine Plan as a dividing line that separates unacceptable adverse effects (those that meet or exceed the harms of the 2020 Mine Plan) from potentially acceptable adverse effects (those that do not meet or exceed the harms of the 2020 Mine Plan). Such a dividing line lacks a rational connection to the factual findings about the portfolio effect, and is in fact contrary to those findings, because those findings stress the importance of maintaining habitat diversity, genetic diversity, and population structure at far finer scales than the levels of harm caused by the 2020 Mine Plan. For example, the 2022 PD at 3-47 - 3-48 says, and the evidence (professional literature cited) in the record shows -

The potential for fine-scale population structuring of salmon fisheries, particularly in terms of Sockeye and Coho salmon, exists throughout the entire Bristol Bay watershed. Finer-scale habitats can sustain unique, genetically distinct populations, each of which helps to maintain the integrity of overall salmon stocks across the Bristol Bay watershed and contributes to the overall resilience of these stocks to perturbation. For example, Sockeye Salmon that use spring-fed ponds and streams as close as approximately 0.6 mile (1 km) apart exhibit differences in traits (e.g., spawn timing, spawn site fidelity, and productivity) that suggest they may comprise discrete populations (Rand et al. 2007, Ramstad et al. 2010, Quinn et al. 2012). Genetic population structure also occurs at a fine geographic scale for Coho Salmon, with many populations found in small first- and second-order headwater streams (Olsen et al. 2003). The ability of Bristol Bay to sustain diverse salmon populations is, therefore, dependent on sustaining the viability of the vast network of unique habitats at small spatial scales across the landscape. This suggests that even the loss of a small population within the Bristol Bay watershed's overall salmon populations may have more significant effects than expected, due to associated loss of genetic and phenotypic diversity of a discrete population (Schindler et al. 2010, Moore et al. 2014, Waples and Lindley 2018).

In summary, a substantial body of research supports the conclusion that a diversity of habitats is necessary for maintaining locally adapted populations that create a stock portfolio of individual species. The multiple, genetically distinct populations of Sockeye Salmon that have been documented in the SFK, NFK, and UTC watersheds contribute to the region's wild salmon portfolio. It is clear from the evolving understanding of the stabilizing effects of the salmon portfolio that the conservation of habitat diversity, which leads to locally adapted population diversity across the landscape, is critical to achieve and maintain the sustainability of Bristol Bay's salmon populations.

Therefore, EPA Region 10's proposed decision in the 2022 PD to use the levels of harm caused by the 2020 Mine Plan as a dividing line appears to be arbitrary and capricious, because (1) that proposed

decision lacks a rational connection to the factual findings related to the portfolio effect, and (2) that proposed decision is contrary to the evidence in the record.

Accordingly, near the end of the conference, I read the following questions and observations from the agenda.

If the 2020 Mine Plan would have resulted in levels of adverse effects 50 percent higher than assessed for each of the four types of harm, then would the levels of each of the restrictions be 50 percent higher? Would the same hold true if the levels were 50 percent less? If the answer is "Yes," then the levels of the restrictions are not connected to the findings about the portfolio effect and [virtual] impossibility of replacing lost resource functions. If the answer is "No," please point to findings that support the levels being set where they are proposed. To the best of our knowledge, that information is not in the 2022 PD.

EPA Response

See EPA's responses to comments 7.0.1 and 7.0.2. EPA reviewed the adverse effects associated with the 2020 Mine Plan. Section 4 of the FD provides the basis for EPA's determination that certain discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

4.J.2 Enerwise (Doc. #0320, p. 1)

The resulting harm and deleterious effects on the Bristol Bay Salmon Fishery would be self-evident and irreversible. In the words of the late Republican Senator Ted Stevens of Alaska said of Pebble Mine "This is the wrong mine in the wrong place." That is why many interests including both Republicans and Democrats are opposed to this particular mine as mining this area is incompatible with other sustainable uses. It's a political decision that begs for bi partisan opposition. The Bristol Bay region is unlike any other intact natural ecosystem on the planet. The short-term gain to US interests from the Pebble Mine poses irreversible harm to the sustainable Bristol Bay Salmon fishery and ecosystem that supports it and its use for future generations of Americans.

EPA Response

See EPA's responses to comments 1.A.1 and 1.B.2.

4.J.3 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 33)

V. THE ADMINISTRATIVE RECORD CONFIRMS THE PROPOSED PEBBLE MINE PROJECT WOULD HAVE AN UNACCEPTABLE ADVERSE EFFECT ON FISHERY AREAS

EPA has firmly based the 2022 PD analysis of unacceptable adverse effects to PLP's 2020 Mine Plan and the associated administrative record from the Army Corps permitting process. The factual record, for which EPA assisted the Army Corps in compiling and analyzing during the permitting process, confirms EPA's finding of unacceptable adverse effects on fishery areas (including spawning and breeding areas)

and alone is sufficient to support final 404(c) action. In addition, as described below, the Army Corps record supports findings of unacceptable adverse effects on wildlife, recreational areas, and drinking water supplies. [33 USC 1344(c) (“The Administrator is authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and he is authorized to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.”).] The Army Corps 404(b)(1) Guidelines analysis in its 2020 Record of Decision, confirmed by EPA’s 404(b)(1) Guidelines analysis in the 2022 PD supports EPA’s findings of unacceptable adverse effects. Finally, as determined by the Army Corps and confirmed by the EPA, the avoidance and minimization measures incorporated into PLP’s 2020 Mine Plan “do not reduce the levels of impact to below significant” [U.S. Army Corps of Engineers Record of Decision for Application Submitted by Pebble Limited Partnership (DA Permit # POA-2017-00271)(Nov. 20, 2020) [hereinafter “Pebble ROD”], attachment B2, p. 2.] while the compensatory mitigation measures were “inadequate to overcome the significant degradation identified in the 404(b)(1) analysis.” [Pebble ROD, attachment B-6, Memorandum for the Record (Nov. 9, 2020).] In short, the proposed Pebble Mine Project cannot meet the requirements of the CWA and thus EPA’s 404(c) action is well-founded.

EPA Response

See EPA’s responses to comments 1.A.1. and 4.I.1.

4.J.4 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 2)

The proposed Pebble Mine Project, as detailed in the 2020 Mine Plan and analyzed in the Pebble Project Final EIS, would be by far the largest and most damaging hard rock mine project in the history of Alaska. The proposed 2020 Mine Plan is also more damaging to anadromous waters and aquatic habitat than any other project on record in Alaska.

EPA Response

EPA agrees with the commenter that the proposed mine would have adverse effects on anadromous fishery areas. Section 4 of the FD provides the basis for EPA’s determination that certain discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

4.J.5 Patagonia (Doc. #2061, p. 1)

Specifically, risks to salmon fisheries include those arising from the Pebble Project footprint, indirect effects of stream and wetland losses, leakage of toxins during routine operations, acid mine drainage

from pyritic waste, risks from transportation corridors, potential wastewater treatment plant failures, spillage due to dam failures and spillway releases during flood events.

EPA Response

Section 4 of the FD provides the basis for EPA’s determination that certain discharges of dredged or fill material from developing the Pebble deposit will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

Section 6 of the FD provides a discussion of spills and failures; water quality effects are discussed in Appendix B of the FD.

4.J.6 National Wildlife Federation (Doc. #2067, p. 2)

B. The “Other Adverse Effects of Concern on Aquatic Resources” highlighted in the revised PD “solely for informational purposes” justify more stringent restrictions to safeguard the Bristol Bay watershed from any large-scale mine.

EPA does not need to rely on the “other adverse effects of concern on aquatic resources” [Revised PD at ES-16 and Section 6.] documented in the revised PD “solely for informational purposes” [Revised PD at ES-16.] to determine that the 2020 Mine Plan would cause unacceptable adverse effects to aquatic resources. However, these effects are highly relevant to the Clean Water Act 404(c) criteria and, in combination with the many other adverse effects, unquestionably justify the imposition of more stringent restrictions to safeguard the Bristol Bay watershed from any large-scale mine. As a result, the National Wildlife Federation urges EPA to rely on these known and documented “other adverse effects of concern on aquatic resources” to impose more stringent restrictions in both the Recommended and Final Determinations.

The impacts highlighted in the revised PD, but not relied upon as “a basis for” the revised PD, [Revised PD at ES-16 and Section 6.] include among others, the significant and highly unacceptable impacts associated with:

Required construction and operation of a major transportation corridor;

Virtually certain toxic leaks and spills, even with ongoing maintenance;

Unquestionable impacts to non-anadromous fish species and other wildlife;

The high risk of a tailings dam failure; and

The “reasonably foreseeable expansion of the 2020 Mine Plan.” [Revised PD at ES-16 to ES-17, and 6-1 to 6-25.]

These identified impacts are not speculative. They either will happen—or they have a high likelihood of happening.

EPA Response

EPA agrees that the additional resources described in Section 6 of the FD may be affected by the construction and routine operation of the 2020 Mine Plan. Section 4 of the FD provides the basis for EPA’s determinations that certain discharges of dredged or fill material associated with developing the Pebble deposit will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. EPA discusses the cumulative effects of the Expanded Mine Scenario in Section 4.3.1.2 of the FD (Compliance with Relevant Portions of the 404(b)(1) Guidelines). Adverse effects associated with spills and failures are discussed in Section 6.2 of the FD. EPA discusses potentially adverse effects on wildlife in Section 6.1.1 of the FD. See also EPA’s responses to comments 1.B.1, 4.B.50, 6.F.11, and 7.0.1.

4.J.7 Delores Larson (Doc. #2667-34, p. 79-80)

Our children - our children’s dependence on us to provide for them is the same dependence we have, we have on our lands and waters to provide for us. The 2014 Bristol Bay Watershed Assessment plainly states that even if the proposed Pebble Mine were to run as planned, that it would still have unacceptable adverse effects on our salmon habitat. Impacts like this threaten our culture, our way of life, our primary food sources, and our long term, sustainable economy.

Please recognize the importance of listening to the people in the tribes in this area who have great insight to the natural processes at work. We have a great state in Bristol - stake in Bristol Bay’s future. Our connection to the land - to the land and the dependence on it are factors you should consider when making decisions on EPA’s Proposed Determination. I speak on behalf of my family, community, and Bristol Bay.

The risks from large scale mining development are far too great for the Native people of this land. I choose salmon. I choose Bristol Bay.

EPA Response

EPA has listened to and respects the diverse perspectives of all Alaska Natives and stakeholders in the Bristol Bay area. Section 6 of the FD discusses EPA’s efforts to consult with tribal governments. A summary of EPA’s tribal consultations can be found at [regulations.gov](https://www.regulations.gov) at Docket No. EPA-R10-OW-2022-0418. See EPA’s response to comment 6.E.2.

4.J.8 Les Gara (Doc. #0132, p. 1-2)

This proposed project poses what the law considers “unacceptable adverse effects” to the area’s world’s greatest salmon runs, the people who rely on them, and the waters in Bristol Bay. Not only are its size and danger exceptional, but it is a project that involves dams that pose an additional risk of breach given that region, and much of Alaska, are earthquake-prone. That adds to the risk that any dam will breach.

EPA Response

See EPA's responses to comments 1.A.1 and 1.B.58, as well as Section 6 of the FD, which includes EPA's discussion regarding spills and failures.

4.J.9 Portage Creek Village Council (Doc. #2667-6, p. 23)

The effects at the - has to start with the mine, it can't start with 20 miles downstream, and it has to start at the mine. The reason I say that is because they're going to put a dam - when they did that pour, they're going to put a dam around that mine to stop the water from going in. And it will affect - it starts there.

And if we - if we - if we don't say nothing, it'll, it'll happen, we'll lose our - we'll lose everything. We'll lose the fish. We'll lose our economy, and the fish.

EPA Response

The FEIS and the FD consider the construction of dams as part of the mine site. Section 4 of the FD provides the basis for EPA's determination that certain discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. Adverse effects associated with accidents and failures are discussed in Section 6 of the FD.

4.J.10 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 12)

Comments regarding recreational uses that could be affected if discharges of dredged or fill material associated with mining the Pebble deposit were to occur.

As described above in general comments and below in specific comments, in my opinion, adverse effects to fishes and their habitat are underestimated in the PD because of its failure to address a number of issues including impacts of infrastructure and development of adjacent mines, many pollutants including copper, impacts to lower trophic levels, etc. Consequently, adverse effects to recreational fishing is accordingly underestimated.

EPA Response

See EPA's response to comment 4.D.4. Adverse effects on the recreational fishery are discussed in Section 6 of the FD.

4.J.11 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 20)

Section 4 General Comments

Language throughout Section 4 describes impacts as "possible" or "likely" rather than inevitable despite extensive support for the latter conclusion throughout Section 3.

Section 4 and consequently the prohibitions described and conclusions of the PD are overly focused on the Nushagak drainage and specifically NFK and SFK. The same principals apply to all salmon species present in other Nushagak tributaries as well as UTC and other Kvichak River drainages, with certain adverse effects to fishery areas of mine construction and operation in that watershed. This is another example of overlooking impacts of road construction, maintenance, and use. Consideration of adverse effects to fishery areas must extend to at least the extent of mining infrastructure (including the road corridor and the port), but also should consider the full extent of mine claims adjacent to and nearby the Pebble deposit that would likely be developed with establishment of infrastructure to support Pebble.

EPA Response

See EPA's responses to comments 4.A.3, 4.B.50, 5.B.18, and 5.B.19.

4.J.12 Sitka Conservation Society (Doc. #0464, p. 3)

Allowing mining in Bristol Bay would be permanently sacrificing a sustainable industry for temporary, unsustainable gains. The seafood industry in Bristol Bay is nearly 140 years old, providing valuable jobs in the region for longer than Alaska has been a state. Because of Bristol Bay's status as one of the most well-managed fisheries in the world and one of the last remaining completely wild fisheries, it will continue to provide for the people of Alaska for generations to come so long as it is not imperiled by industrial mining development. Pebble Mine may provide economic benefit in the short term, but it will only be temporary. Mining isn't a sustainable industry; eventually the mine will be stripped of all its minerals and only toxic mining waste will remain. Any jobs created by the project will leave, the open-pit will no longer generate revenue, and the seafood industry in Bristol Bay will be forever scarred, unable to provide for Alaskans in the way it once did. If Bristol Bay is protected from mining development, the fishing industry can sustain prosperity in Alaska over a foreseeably infinite timescale, far beyond what Pebble Mine could ever offer to Alaskans.

EPA Response

See EPA's response to comment 1.B.2 and EPA's responses to comments in Topic 6.F.

4.J.13 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 17, 24-25)

{III. PROMPT AGENCY AND LEGISLATIVE ACTIONS ARE NECESSARY TO KEEP THIS SITUATION FROM BEING COUNTERPRODUCTIVE.

A. EPA should issue a revised 2022 PD that rewrites Chapters 4 and 5 to be much stronger, and engage in a renewed public process that corrects EPA's errors and omissions and their consequences, and allows the public to comment more usefully.

(...)

BBFA and EVC offer ten suggestions for how EPA should rewrite Chapters 4 and 5 of the 2022 PD to be much stronger, issue a revised 2022 PD, and engaged in a renewed public process.}

(...)

2. EPA should base some, if not many, of the prohibitions and restrictions expressly but not exclusively on the importance of how fine-scale habitat diversity, fine-scale genetic diversity, and fine-scale immunological diversity produce fine-scale population structures that create the "portfolio effect" which stabilizes salmon returns.

Our letters of June 10 and June 23, 2022 quote extensively from the 2022 PD§ 3.3.3 (pp. 3-38 - 3-48) and§ 4.2 (pp. 4-2 - 4-44) to show that it relies on professional literature to explain that scientific understanding has progressed, and continues to progress, with respect to the importance of how fine-scale habitat diversity, fine-scale genetic diversity, and fine-scale immunological diversity produce fine-scale population structures that create the "portfolio effect" which stabilizes salmon returns. That keeps the commercial and recreational fishing industries and subsistence afloat. And, our letter of June 10 adds citations to parallel professional literature on immunological diversity.

That progress and the reasonable expectation of more progress in the same direction is a reasonable basis for stricter limits and prohibitions than in the 2014 PD, let alone the 2022 PD.

EPA Response

See EPA's responses to comments 7.0.1 and 7.0.2.

4.J.14 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (BBFA) (Doc. #0830, p. 11-13)

C. EPA should base its limits applicable to future mine plans for the Pebble deposit on the amount harms that EPA determines constitute "unacceptable adverse effects" regardless of whether PLP has proposed a mine plan or not.

For two reasons, it should be obvious that the 2022 PD errs by proposing limits, applicable to future mine plans for the Pebble deposit, based on the amount of harms caused by PLP's 2020 Mine Plan, rather than on the amount harms that EPA determines constitute "unacceptable adverse effects" regardless of whether or not someone has proposed a mine plan.

1. EPA's explanation for its weaker standards in the 2022 PD runs counter to the evidence before the agency.

Appendix A of the 2022 PD is styled as a "Summary of Key Changes from the 2014 Proposed Determination." However, that summary, and the entire 2022 PD, do not even acknowledge what the limits were in the 2014 PD, let alone explain why EPA Region 10 is proposing to raise the limits to make them more permissive of harms caused by future mine plans to mine the Pebble deposit. Instead, the 2022 PD explains that EPA Region 10 is proposing to restrict the use of waters for specification as disposal sites for any future plan to mine the Pebble deposit that would either individually or

collectively result in adverse effects "similar or greater in nature and magnitude to those described in Sections 4.2.1 through 4.2.4." [2022 PD at 5-2 (emphasis added).] Sections 4.2.1 through 4.2.4 of the 2022 PD describe the effects of the 2020 Mine Plan. So, EPA's explanation of its proposed limits is that they approximate the amounts of each of the four types of harms that would have been caused by PLP's 2020 Mine Plan.

It should now be clear why we, in Part B above, we quote at length portions of the 2022 PD which cite recent professional publications related to how scientific understanding has progressed since the 2014 PD with respect to the role that fine-scale population structure, due to habitat diversity and genetic diversity, plays in producing the portfolio effect. Those quoted portions, and the citations therein, not only justify stricter limits, rather than weaker limits. Those quoted portions also demonstrate that EPA Region 10 appears to have "offered an explanation for its decision," to propose weaker limits than it proposed in 2014, that runs "counter to the evidence before the agency," and therefore it is vulnerable to a claim that it is arbitrary and capricious. See *Motor Vehicle Manufacturers Association v. State Farm Mutual Automobile Insurance Company*, 463 U.S. 29, 43 (1983) (citation omitted).

EPA should promptly revise and re-issue this proposed determination with a defensible explanation for why it would set the limits as it does. Otherwise, EPA Region IO is simply proposing weaker standards in a legally vulnerable determination. That does not serve the conservation purposes of § 404(c).

2. Definitionally, a pre-application proposed determination cannot depend on an application.

The "whenever" clause in § 404(c) authorizes EPA to act in the absence of an application for a discharge permit. [See the "whenever" clause in footnote 1, above. See also 40 CFR 231.1 ("The Administrator may also prohibit the specification of a site under section 404(c) with regard to any existing or potential disposal site before a permit application has been submitted to or approved by the Corps or a state."). (Emphasis added)] With respect to future mine plans, the 2022 PD proposes limits in the absence of an application for those future mine plans.

If an "unacceptable adverse effect" depends on the amount of harms that would be caused under an application for permit, then § 404(c) would not provide pre-application authority - i.e., "whenever" the EPA Administrator determines that discharges would have an unacceptable adverse effect. Therefore, EPA should base its limits on the amount harms that EPA determines constitute "unacceptable adverse effects" regardless of the levels of harms that would have been caused by PLP's 2020 Mine Plan.

However, that is not what the 2022 PD does with respect to future mine plans. It proposes limits based on the amount of harm that would occur under PLP's 2020 Mine Plan. If "unacceptable adverse effect" were determined by such means, then PLP could have submitted a mine plan that would have increased the harms, and that would have increased the limits. That approach to determining an unacceptable adverse effect is absurd, but that approach cannot be distinguished from the 2022 PD. It weakens the limits, from those in the 2014 PD which were based on a 0.25-billion-ton Pebble mine, to those of the 2022 PD which are based on PLP's 2020 Mine Plan for a 1.3-billion-ton Pebble mine. By that approach, if

PLP had applied for a permit for its reasonably foreseeable 78-year, 6.5-billion-ton mine, then the limits would be even higher and more permissive of harm.

In effect, EPA is letting PLP set the standards for what is unacceptable. That is obviously an incorrect approach. When proposing numerical limits, a better approach is to rely directly on the scientific publications related to the role that fine-scale population structure, due to habitat diversity and genetic diversity, plays in producing the portfolio effect. Hence, when we propose numerical limits stricter than the 2014 PD, we focus on 0.6-mile measurement and the progress and evolving nature of the science related to the portfolio effect.

EPA Response

See EPA's responses to comments 7.0.1 and 7.0.2. CWA Section 404(c) requires EPA to make a determination that certain discharges of dredged or fill material in certain waters of the United States would result in unacceptable adverse effects on one or more enumerated resources, including fishery areas (including spawning and breeding areas). Section 4 of the FD provides the basis for EPA's determination that certain discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. EPA's approach in the FD is authorized by and consistent with statutory and regulatory requirements.

4.J.15 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 25)

{III. PROMPT AGENCY AND LEGISLATIVE ACTIONS ARE NECESSARY TO KEEP THIS SITUATION FROM BEING COUNTERPRODUCTIVE.

A. EPA should issue a revised 2022 PD that rewrites Chapters 4 and 5 to be much stronger, and engage in a renewed public process that corrects EPA's errors and omissions and their consequences, and allows the public to comment more usefully.

(...)

BBFA and EVC offer ten suggestions for how EPA should rewrite Chapters 4 and 5 of the 2022 PD to be much stronger, issue a revised 2022 PD, and engaged in a renewed public process.}

(...)

4. EPA must abandon using levels of harm caused by the 2020 Mine Plan as a dividing line between unacceptable and potentially acceptable adverse effects.

If EPA cannot articulate a justification for using the levels of harms of the 2020 Mine Plan as a dividing line that putatively separates unacceptable adverse effects (those that meet or exceed harms of the 2020 Mine Plan) from potentially acceptable adverse effects (those that do not meet or exceed the harms of the 2020 Mine Plan), then that approach is arbitrary and capricious because it lacks a rational

connection to the factual findings about the portfolio effect and is contrary to those findings because they stress the importance of maintaining habitat diversity, genetic diversity, and population structure at far finer scales than the levels of harm caused by the 2020 Mine Plan. As I wrote in my letters of June 10 and June 23, the lengthy discussion in the 2022 PD of the portfolio effect, and pages of citations about it, support limits stricter than those proposed of the 2014 PD and is contrary to the weaker standards of the 2022 PD.

EPA Response

See EPA's response to comment 4.J.14.

4.J.16 Alaska Department of Environmental Conservation (Doc. #0814, p. 42-46)

f. Region 10 “relie[s] on factors which Congress has not intended it to consider[.]”

Agency action is arbitrary and capricious if the agency “relie[s] on factors which Congress has not intended it to consider[.]” [State Farm, 463 U.S. at 43.] A veto under § 404(c) must be based on effects from “discharge[s]” of dredged or fill material from point sources into WOTUS associated with the proposed project. [33 U.S.C. § 1344(c), (a) (referent for “such materials”).]

In Section 6 (“Other Concerns and Considerations”) and throughout its proposed veto, Region 10 discusses a slew of effects that do not result from the discharge of dredged or fill material from a point source into a WOTUS. Region 10 states that several of these do not serve as bases for its proposed veto, [PD at 6-6 (“This proposed determination does not consider impacts from potential accidents and failures as a basis for its findings[.]”).] but fails to explain why such considerations are included in a publication whose very purpose is to provide the public with notice of EPA’s proposed decision and the bases underlying it. For purposes of this Letter, Alaska has no option but to assume Region 10 relied on these additional considerations and address them as such.

i. Expanded Mine Scenario

Consideration of the Expanded Mine Scenario is inappropriate. Region 10 admits that “[t]he Expanded Mine Scenario is not part of the 2020 Mine Plan, has not otherwise been proposed, and would require additional and separate permitting[.]” [PD at 4-53.] That is correct. There is a process: proposed developments must obtain all the necessary permits before construction, and satisfy all permitting agencies that the project will comply with applicable law and adequately protect the environment. The only project that stands to be vetoed here is the project that PLP has requested a permit for: the proposed mine. A hypothetical expansion of the mine in the future cannot inform the issue of whether EPA can or may veto the proposed mine.

If Region 10 is going to consider costs of the Expanded Mine Scenario, it must also consider its benefits. As previously detailed, [See supra Section 1(d) of the Legal Section of this Letter.] the mine’s expansion could generate as much as \$5.39 billion in revenue to the State, to be used for the benefit of all Alaskans.

Jobs and infrastructure would be created. Ignoring these benefits and presenting only the costs is inappropriate.

ii. Secondary and Indirect Effects Resulting from Project Aspects Other Than Discharges

Region 10's proposed veto considers the "secondary" or "indirect" effects of fugitive dust and other effects of nondischarge activities. [PD at 4-3.] Although the Corps may have the power to consider secondary and indirect effects in the permitting process, EPA does not enjoy the same power in making veto decisions. EPA's power is limited to assessing whether discharges of dredged and fill material from point sources will have unacceptable adverse effects on specified resources including fisheries. Region 10's consideration of effects resulting from other aspects of the proposed mine plan exceed the lawful scope of its determination.

Region 10's proposal also contains extensive discussion of the effects of discharges on groundwater, the regulation of which falls squarely within States' purview. [See *Coldani v. Hamm*, No. CVS07 660RRB EFB, 2007 WL 2345016, at *8 (E.D. Cal. Aug. 16, 2007) (stating that "an allegation of groundwater pollution coupled with an assertion of a general hydrological connection between all waters, is insufficient to come within the purview of the CWA[.]").] Alaska does an excellent job of protecting its groundwater. [Alaska's Department of Environment Conservation ("ADEC") has broad regulatory authority to protect State waters. AS § 46.03.020 (powers of ADEC). The Alaska legislature has authorized ADEC to adopt all regulations "necessary . . . for . . . control, prevention, and abatement of air, water, or land or subsurface land pollution[.]" AS § 46.03.020(10)(A)&(C). ADEC's authority extends to requiring "the owner or operator of a facility to undertake monitoring, sampling, and reporting activities described in 33 U.S.C. 1318 (sec. 308, Clean Water Act)" for waters. AS 46.03.020(14). This authority extends over all waters within Alaska, including WOTUS. ADEC has been aggressive in exercising this authority to protect Alaska's waters.] Region 10's intrusion into this sphere of traditional state authority is neither wanted nor warranted.

iii. Risk of Spills and Accidents

Region 10 warns of dire consequences that would befall were a major spill or accident to occur. However, Region 10 has not established that accidents and spills are "discharges" as required by § 404(c), so may not lawfully consider this factor as a basis for its decision.

First, Region 10 has not pointed to a single catastrophic mine failure in Alaska. Nor can it: thanks to our robust laws, excellent management, and close scrutiny of the industry, Alaska has never experienced such a failure. Nor is Alaska likely to, given all the safeguards the State has in place.

Second, it is erroneous to equate spills reported in Alaska to environmental harm. Alaska has a very stringent reporting policy (requiring all spills to be reported—even if the spilled amounts are minimal, and even if the spills occur into a contained area) and ADEC staff does an excellent job of ensuring spills are promptly and fully cleaned up. [The Prepared Prevention and Response and Contaminated Sites Programs of the Spill Prevention and Response Division of ADEC coordinates response and cleanup activities.] To the extent the Earthworks April 2022 report suggests otherwise, it is seriously misleading.

Third, catastrophic spills are utterly speculative and do not rise to the level of something that reasonably “will” be expected to have an unacceptable adverse effect, as required by § 404(c).

Lastly, the Corps has found that a catastrophic failure has a “very remote” probability of occurring with this proposed project. [PD at 6-12.] As mentioned, Alaska’s management of its mines is better than most, and should serve as a model for the Nation. Region 10 has failed to establish that the likelihood of a catastrophic failure occurring is anything more than “very remote.”

iv. Previous Commenter Approval or Disapproval

Region 10 goes out of its way to note that “[a]pproximately 99 percent of commenters expressed opposition to the withdrawal of the 2014 Proposed Determination.” [PD at 2-11.] But a 404(c) veto should be based on science, reason, and the limits imposed by Congress—not a comment head count.

v. Importance of Bristol Bay

Section 3 of the proposed veto trumpets the importance of Bristol Bay, a 41,900 square mile area. [FEIS at 3.16-1.] EPA’s press releases chime in: “[If finalized, EPA’s Section 404(c) determination would help protect the Bristol Bay watershed’s rivers, streams, and wetlands that support the world’s largest sockeye salmon fishery and a subsistence-based way of life that has sustained Alaska Native communities for millennia.” See May 25, 2022 Press Release, available at <https://www.epa.gov/newsreleases/epa-proposes-protect-bristol-bays-salmon-fishery-subsistence-fishing-alaska-natives-0>.] the Administrator himself espouses “[t]he Bristol Bay watershed” [Notably, Bristol Bay is not technically considered a watershed. Alaska watersheds are coded by United States Geological Survey, at https://water.usgs.gov/GIS/new_huc_rdb.txt. There is no listing for “Bristol Bay” in the HUC coding. The “newer HUC” coding lists Southwest Alaska as “1903” as the 4-digit HUC. The two 6-digit HUCs are Kvichak-Port Heiden (190302) and Nushagak (190303).] as a “shining example of how our nation’s waters are essential to healthy communities, vibrant ecosystems, and a thriving economy.” [EPA.gov Press Releases, EPA Proposes to Protect Bristol Bay’s Salmon Fishery, Subsistence Fishing for Alaska Natives (May 25, 2022), retrieved from <https://www.epa.gov/newsreleases/epa-proposes-protect-bristol-bays-salmon-fishery-subsistence-fishing-alaska-natives>.] If EPA’s rhetoric is to be believed, this veto is about saving Bristol Bay—from Alaskans.

Region 10 has not identified what in § 404(c)’s statutory text or implementing regulations allows a veto based on a broader area’s “importance.” Were an area’s importance a legitimate factor for Region 10 to consider, Region 10 should have also vetoed the expansion of Washington’s SeaTac airport, which was approved by the Corps in 2002. This expansion negatively impacted three watersheds (Miller Creek, Walker Creek, and Des Moines Creek) and three fish-bearing creeks that were classified as Class AA water of the state—the highest and most protective category for Washington state waters. [See *Airport Communities Coalition v. USACE*, 2003 WL 25760707 (W.D. Wash. 2003).] Washington, of course, is the State with the salmon most in need of saving. [As Washington State explains its dire salmon situation: “We have damaged their habitat, hindered their migration, and polluted their waters. We’ve overfished, forced them to compete for limited resources, and made their journey home that much harder.”

Washington State Recreation and Conservation Office, Salmon and Orca Recovery: Problem, retrieved from <https://rco.wa.gov/salmon-recovery/problem/>. The same cannot be said for Alaska.] Failing to veto that project, but attempting to veto this project, is inexplicable. Or, rather, it is explainable only by an impermissible factor: favoring certain types of development over others.

Alaska agrees that the Bristol Bay area is important. It is important for its development potential and for its fishery resources. It is important for its beauty, its majesty, its magic. And it is important to all Alaskans. This is why Alaska law provides ample protection over the land and streams in the Bristol Bay area. [See supra Section 5(c)(i)–(iii) (detailing protections).] Indeed, most of the streams in the Bristol Bay area are legislatively designated as fishery reserves. [AS § 38.05.140(f).] Region 10 disregards this all. Alaska understands better than anyone the importance of Bristol Bay: it is Alaska, not EPA, who is charged with its management and protection.

vi. Additional Factors

Region 10 discusses several additional factors that may not lawfully be considered because they are not effects of discharges from point sources into WOTUS. These include the “cultural stability” of Native populations; [PD at 6-18.] “behavioral disorders” potentially resulting from the mine; [PD at 6-18.] “mental health degradation” resulting from the mine; [PD at 6-18.] “dietary” considerations, including the mine’s effect on “processed simple carbohydrates and saturated fats” [PD at 6-18.] and the intake of “protein and certain nutrients” by locals; [PD at 6-24.] “tension and discord” that could be “provoked” among natives by the mine; [PD at 6-18.] “stress and anxiety”; [PD at 6-19.] “language” [PD at 6-19.] including “defin[ition of] a ‘wealthy person’”; [PD at 6-23.] “spirituality”; [PD at 6-19.] “social relations”; [PD at 6-19.] “family cohesion”; [PD at 6-20.] “rituals”; [PD at 6-20.] “folklore”; [PD at 6-20.] “equitable fishing opportunities”; [PD at 6-21.] and “people with disabilities,” [PD at 6-24.] among others.

These factors are not listed in the statutory text of § 404(c), or EPA’s implementing regulations. EPA’s environmental engineers, trained as they are, simply lack the expertise to opine on spirituality, diets, or mental health. The Supreme Court recently chastised OSHA for its involvement in matters far less afield than these. [NFIB v. Dep. of Lab., OSHA, 142 S. Ct. 661 (2022) (per curiam) (concluding that the “‘lack of historical precedent,’ coupled with the breadth of authority that the Secretary now claims, is a ‘telling indication’ that the [vaccine] mandate extends beyond [OSHA]’s legitimate reach”).]

vii. Conclusion

To the extent the proposed determination relies on any of the factors discussed above, it is invalid because those factors are not properly considered under § 404(c).

EPA Response

The FD expressly states that “[t]he basis for EPA’s final determination is the unacceptable adverse effects on fishery areas from certain discharges of dredged or fill material associated with proposed mining at the Pebble deposit, which is discussed in detail in Section 4.” The FD further states that Section 6 “describes additional concerns and

information that, while not the basis for EPA’s final determination, are related to discharges of dredged or fill material associated with developing the Pebble deposit.”

4.J.17 Competitive Enterprise Institute et al. (Doc. #0838, p. 2)

There are reasons to believe that the Army Corps may reverse its rejection of the mine, especially given the key findings in the FEIS that its environmental impacts would be minimal, and especially those on the salmon fishery. [Army Corps of Engineers, “Pebble Project Environmental Impact Statement, Executive Summary,” July 2020, <https://www.arlis.org/docs/vol1/Pebble/Final-EIS/Pebble-FEIS-summary.pdf>.] This includes the conclusion that “there would be no measurable change in the number of returning salmon....” [Ibid. at 87.] In any event, the appeal should be Army Corps’ decision, free from EPA interference in the form of the 2022 Proposed Determination.

EPA Response

Information and analysis in the FEIS and ROD support EPA’s findings in the FD and both documents are cited extensively by the FD. Attachment 1 of Appendix B in the FD addresses FEIS conclusions that appear to be inconsistent with the FD. See EPA’s response to comment 4.B.41. EPA explains its CWA Section 404(c) authority, the relationship between CWA Section 404(c) and the CWA Section 404 permitting process, as well as the Agency’s rationale for acting now, in Section 2 of the FD. Section 404(c) of the CWA provides EPA with independent authority, separate and apart from the USACE permitting process, to review and evaluate potential discharges of dredged or fill material into waters of the United States. See also EPA’s response to comment 2.C.34.

4.J.18 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 34-36)

E. EPA Overstates the Significance of the Impacts by Unduly Narrowing the Watershed Scale

EPA attempts to question the FEIS findings on fishery impacts by arguing that the FEIS “does not disclose impacts at the smaller, more relevant and appropriate scale where impacts would be measurable.” [Revised Proposed Determination at B-6.] But the approach taken in the FEIS was based on USACE and EPA guidance, which direct that watershed impacts should be evaluated at a larger scale for remote areas:

Watershed Scale. Certain environmental factors in Alaska suggest that larger watershed scales than are commonly used in the lower 48 states may be appropriate. These factors include, but are not limited to: (1) large areas where wetlands remain relatively free from human alteration and opportunities for wetland restoration and enhancement are limited; and (2) large wetland dominated areas where there is a lack of upland sites appropriate for establishing wetlands. [Memorandum of Agreement Between the U.S. Environmental Protection Agency and the Department of the Army Concerning Mitigation Sequence for Wetlands in Alaska under Section 404 of the Clean Water Act at 5 (June 15, 2018) (“2018 Alaska MOA”) (emphasis added), https://www.epa.gov/sites/production/files/2018-06/documents/epa_army_moa_alaska_mitigation_cwa_404_06-15-2018_0.pdf.]

It is undisputed that the Pebble Deposit is in a large area where wetlands remain relatively free from human alteration and opportunities for wetland restoration and enhancement are limited. Thus, the approach taken in the FEIS is more appropriate, and consistent with EPA's prior policy statements.

In 2018, the Alaska District issued a "Compensatory Mitigation Thought Process" document, which also directs that HUC 10 or larger may be used for such remote locations:

As a starting point, all project managers should review the 10 digit watershed for the purposes of cumulative impacts and the determination of compensatory mitigation. There are reasons for expanding or reducing the area of analysis from the 10 digit HUC. For example, in populous areas such as the Municipality of Anchorage, it may not be possible to determine project impacts caused by a particular discharge at the 10 digit HUC level due to other activities and/or development within that same sub-watershed. In that instance, a project manager should review the 12 digit HUC (this should be an exception, not a standard). In extreme cases, the project manager may determine that it is only possible to identify specific project direct, indirect, and cumulative impacts at the individual reach level due to multiple overlapping impacts within the watershed. In instances where the project is located in a more rural area without interference from other impacts, the project manager may expand the analysis to the 8 digit HUC. [U.S. Army Corps of Engineers, Alaska District Compensatory Mitigation Thought Process at 9 (Sept. 18, 2018) ("Compensatory Mitigation Thought Process"),

<https://www.poa.usace.army.mil/Portals/34/docs/regulatory/2018MitigationThoughtProcess.pdf>]

Thus, the use of smaller scale HUC 12 is the exception in Alaska, and is only appropriate for urban, developed areas like Anchorage. Indeed, HUC 10 is the usual scale used to assess impacts and the adequacy of compensatory mitigation for projects outside the Anchorage or North Slope areas. [See, e.g., USACE, Donlin Gold Project Joint Record of Decision and Permit Evaluation at 6- 12 (Aug. 13, 2018) ("Donlin ROD") ("All four restoration projects are located in the same 10- digit HUC watershed as the majority of the permanent aquatic resources impacts from the Project."),

<https://www.poa.usace.army.mil/Portals/34/docs/regulatory/Donlin%20Gold%20Corps-BLM%20Joint%20Record%20of%20Decision.pdf?ver=2018-08-13-191053-293>.] For remote,

undeveloped areas like the Pebble location, agencies are instructed to use a larger HUC, such as HUC 8 or 10. [Compensatory Mitigation Thought Process at 9.] The FEIS adheres to this approach, analyzing mine site impacts in the context of the two HUC 10 watersheds affected (Headwaters Kaktuli River and Upper Talarik Creek). [FEIS at ES 92.] EPA's attempt to discredit the FEIS's findings based on the watershed scale utilized is therefore baseless, as the FEIS's use of HUC 10 scale directly adheres to applicable USACE guidance.

To reach its desired result, EPA ignores applicable guidance and precedent by utilizing the narrow HUC 12 scale in the Revised Proposed Determination despite the remote context of the Pebble Deposit. For example, EPA finds that the permanent loss of 8.5 miles of anadromous fish streams "represents approximately 13 percent of the anadromous waters in the NFK watershed." [Revised Proposed Determination at 4-47.] The NFK watershed is not an officially designated US Geological Survey ("USGS") watershed, and therefore is not designated by a USGS HUC. The NFK is instead is the combined area of

the Groundhog Mountain HUC 12 and an unnamed HUC 12 (19030321104). EPA has failed to justify why the HUC 12 level was utilized in the Revised Proposed Determination, especially in this remote Alaskan context. EPA's unexplained decision to restrict the watershed scale considered causes it to overstate impacts throughout the Revised Proposed Determination and renders the proposal arbitrary and unsupportable.

EPA Response

The first guidance document cited by the commenter is the 2018 Alaska MOA developed jointly by the Department of the Army and EPA. EPA acknowledges that the guidance notes that when making decisions regarding compensatory mitigation in Alaska, certain environmental factors in Alaska suggest that larger watershed scales than are commonly used in the lower 48 states may be appropriate. However, it also discusses the need to look at a more refined watershed scale in certain circumstances, such as those encountered with the proposed project. Crucially, the commenter omits the sentence that follows the quoted material. This sentence states that “[t]he size of watershed addressed using a watershed approach should not be larger than is appropriate to ensure that the aquatic resources provided through compensation activities will effectively compensate for adverse environmental impacts resulting from activities authorized by Section 404 permits.” This important consideration informed EPA's decisions regarding the appropriate analysis scale. See Sections 4.2 and 4.3.2 and Appendix C of the FD. Regarding the second document cited by the commenter, USACE's “Compensatory Mitigation Thought Process” document, this document was not developed with any input from EPA. EPA's review was informed by the 2018 Alaska MOA issued jointly by EPA Headquarters and the Department of Army national programs rather than the guidance issued by the USACE Alaska District without input from EPA.

4.J.19 Choggiung Limited (Doc. #0815, p. 1)

The EPA's action must protect several critical sub watersheds: the North Fork Koktuli, South Fork Koktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon and are under threat from Pebble and large- scale mines like it. The 404(c) must provide true protections to the headwaters, not just limitations based on past mine plans.

EPA Response

See EPA's response to comment 1.B.1.

4.J.20 Daniel Schindler (Doc. #2667-31, p. 71-72)

Second point, the EPA should be commended for the rigor with which they produced a scientific assessment of risks of Pebble Mine. It is a good piece of work. It has been peer reviewed. You have responded to peer reviews, and you have produced an assessment that will stand up to scientific assessment.

But, we have known this for over 10 years. We've known this for probably 15 years. The facts, the scientific facts have not changed. The only thing that's changed are the Mine Plans. And what we've been involved with is playing games with different ways to mine this resource.

And the, the point I want to make is it doesn't matter. Any mine of the scale that's going to be required to make this profitable is going to harm water quality. It's going to harm fish. And it's going to harm people.

EPA Response

See EPA's response to comment 1.A.1.

4.J.21 Earthjustice, Earthworks, Friends of the Earth U.S., and the Center for Biological Diversity (Doc. #0835, p. 3-5)

II. The proposed prohibition and restriction are amply justified.

EPA's proposed prohibition and restriction are amply justified by over a decade of scientific analysis showing that large-scale porphyry copper mining is incompatible with the sustainability of the Bristol Bay ecosystem and the fisheries that ecosystem supports. In 2014, after conducting a thorough, public, peer-reviewed assessment of the potential impacts of large-scale porphyry copper mining on Bristol Bay, [EPA, An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska (Jan. 2014) (Watershed Assessment).] EPA found that even the smallest plausible copper mine at the Pebble deposit ("Pebble 0.25") "could cause or contribute to significant degradation of the aquatic ecosystem." [2014 PD at 4-56.] EPA explained that irreversible "unacceptable environmental effects would result from such mining," including the "complete loss of fish habitat due to elimination, fragmentation, and dewatering of streams, wetlands, and other aquatic resources" and "significant[] impair[ment of] the fish habitat functions of other streams, wetlands, and aquatic resources." [79 Fed. Reg. 42,314, 42,315-16 (July 21, 2014).] "In simple terms, the infrastructure necessary to mine the Pebble deposit jeopardizes the long-term health and sustainability of the Bristol Bay ecosystem." [Id. at 42,316.] The impacts of even the 0.25 scenario mine "would be inconsistent with the requirements of the Section 404(b)(1) Guidelines" in "a number of ways." [2014 PD at 4-31.] EPA's analysis was conservative in many ways, such as by relying only on the impacts of three major mine components [Id. at 2-16 to 2-17 ("By only considering the footprint impacts associated with the mine pit, [tailings storage facilities], and waste rock piles" to the exclusion of a mine transportation corridor and other essential mine support facilities, the agency "recognizes that it has underestimated potential adverse effects on resources.....").] and considering the least impactful potential configuration of those components. [Id. at 4-13 (noting that placing the tailings storage facilities or waste rock piles in other locations "likely would result in even greater impacts, in terms of spatial extent and/or the number of salmon species affected").]

To date, nothing has undermined the findings in the Watershed Assessment and 2014 PD. PLP, other owners of record, the State of Alaska, the Corps, and members of the public have all had opportunities to refute this science, and have failed to do so. The environmental impact statement prepared by the Corps, which was not peer reviewed, [It is not typical for environmental impact statements to be peer reviewed, as there is no legal requirement that agencies conduct such a review. Typical or not, however,

the lack of peer review indicates the Corps' analysis was prepared to a less rigorous standard than the Watershed Assessment.] minimized impacts to Bristol Bay fish only by inappropriately underestimating the impacts of the 2020 Mine Plan. [See, e.g., Revised PD, App. B at B-1.] Therefore, while the Corps was correct to conclude that the 2020 Mine Plan would cause unacceptable adverse impacts to aquatic resources, [See id. at ES-5.] many of the Corps' other conclusions about the 2020 Mine Plan's impacts in its environmental impact statement are not supported.

In fact, as documented at length in other comments filed on the Revised PD, [See, e.g., Trustees for Alaska, Comments on the Revised PD (Sept. 6, 2022).] research conducted following the 2014 PD has only underscored that large scale porphyry copper mining is a serious threat to the integrity of the Bristol Bay watershed. For example, in a report evaluating information on fifteen operating open-pit copper mines representing 99 percent of all U.S. copper production in 2015, 14 out of 15 mines (93 percent) "failed to capture and control wastewater, resulting in significant water quality impacts." [Gestring, B., U.S. Operating Copper Mines: Failure to Capture & Treat Wastewater at 1 (May 2019).] "These unauthorized wastewater releases occurred from a number of different sources including uncontrolled seepage from tailings impoundments, waste rock piles, open pits, or other mine facilities, or failure of water treatment facilities, pipeline failures or other accidental releases." [Id.]

A 2022 report analyzed the Alaska Department of Environmental Conservation spill database and found more than 8,150 total spills associated with Alaska's five major operating hardrock mines between 1995-2020, or approximately 300 spills each year. [Lubetkin, S., Alaska Mining Spills: A comparison of the predicted impacts described in permitting documents and spill records from five major operational hardrock mines (April 2022).] These spills accounted for the release of more than 2.3 million gallons and 1.9 million pounds of hazardous materials during that 26-year span. The report determined that the mine permitting process severely underestimated spill risk at all five mines.

A 2022 review of the impacts of mining on salmonid bearing watersheds in North America concluded that "[d]espite impact assessments that are intended to evaluate risk and inform mitigation, mines continue to harm salmonid-bearing watersheds via pathways such as toxic contaminants, stream channel burial, and flow regime alteration." [Sergeant, C. J., et al., Risks of mining to salmonid-bearing watersheds. 8 SCI. ADV. 26 at 1 (July 1, 2022).] It further concluded that "[t]he body of knowledge presented here supports the notion that the risks and impacts of mining have been underestimated across the watersheds of northwestern North America." [Id. at 13.]

There has also been further confirmation that impacts to individual salmon streams are significant for overall fishery resilience. EPA notes that "even populations in relatively close proximity can exhibit high degrees of differentiation" and "occur at localized spatial scales." [Revised PD at 3-41.] EPA cites the example of sockeye salmon that use spring-fed ponds and streams approximately 1 kilometer apart, which "exhibit differences in spawn timing, spawn site fidelity, productivity, and other traits that are consistent with discrete populations." [Id.; id. at 4-9.]

Even as underreported by the Corps, [See, e.g., id., App. B at B-1 ("[T]he predicted impacts reported in the FEIS likely underestimate the actual impacts that the 2020 Mine Plan would have on the region's

aquatic resources.”); Fennessy, S., Memorandum to E. Anderson, Wild Salmon Center, Re. Comments on the Final Environmental Impact Statement on the Impacts to Wetlands and Other Waters at 3-4 (Aug. 21, 2020).] the impacts of the 2020 Mine Plan far exceed the impacts of the Pebble 0.25 scenario that EPA proposed to prohibit in the 2014 PD. [Compare Revised PD at ES-12 with 2014 PD at ES-6.] Therefore, for the same reasons the 2014 PD was fully supported and its conclusions remain valid, the proposed prohibition and restriction in the Revised PD are fully supported. However, the proposed restriction should be broadened and clarified to provide better protection for Bristol Bay.

EPA Response

See EPA’s response to comment 7.0.1. The impacts associated with an unplanned release of mine tailings and other spills into the environment are discussed in the FEIS and Section 6.2 of the FD; see EPA’s responses to comments in Topic 6.D, specifically 6.D.1. Section 4 of the FD provides the basis for EPA’s determination that certain discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

4.J.22 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 32-34)

D. EPA Has Not Demonstrated That the Portfolio Effect Will Have an Unacceptable Adverse Effect Sufficient to Justify a Veto

EPA asserts that “a substantial body of research supports the conclusion that a diversity of habitats is necessary for maintaining locally adapted populations that create a stock portfolio of individual species.” [Id. at 3-48.] While the connection between this portfolio effect and the bases for the Revised Proposed Determination is unclear, EPA seems to argue that the portfolio effect justifies taking a precautionary approach here. Thus, EPA assumes that any fish habitat loss in the area could be detrimental to salmon. However, this speculation regarding a potential portfolio effect is not supported by the record. [EPA’s statement that salmon can use diverse habitats because of “microevolution” supports the concept that salmon can adapt to changes in their environment. Id. at 3-46.] The FEIS found that there would be no discernable impact to the portfolio effect from the Project:

given the vast breadth and diversity of habitat (and salmon populations) in the Bristol Bay watershed, impacts on the Portfolio Effect are certain but not likely to be noticeable in context of the Bristol Bay watershed. [FEIS at 4.24-47 (emphasis added).]

The Portfolio Effect is an observation that the Bristol Bay salmon run is produced from an abundance of diverse aquatic habitat; this diversity allows for a harvestable surplus even when some systems experience low abundance. . . . The term “Portfolio Effect” is taken from the concept of investment portfolios, where adding to the diversity of investments is thought to reduce risk (or the likelihood of occurrence of losses to the overall investment portfolio, even if some individual investments do not do well). Any loss of salmon production would have an effect on the Bristol Bay “portfolio,” similar to the

way that financial losses by individual investments would have an effect on an investor's portfolio. In this EIS, the effect to the Bristol Bay portfolio is considered by evaluating the amount of habitat and salmon production that would be lost. No long-term measurable changes in the number of returning salmon are expected, nor is genetic diversity expected to change; therefore, the impact to the Portfolio Effect would not be discernable. [Id. at 4.24-47 n.1 (emphasis added).]

Similarly, in response to DEIS comments on this issue, the District stated:

Given the breadth and diversity of habitat (and salmon populations) in the Bristol Bay watershed, the expected impacts of localized mine and transportation corridor development on the Portfolio Effect are not likely to be discernible; rather, the Portfolio Effect may help to minimize expected impacts of the mine development on Bristol Bay's salmon fishery. [Id. at D-88.]

EPA's discussion of the portfolio effect in the Revised Proposed Determination does nothing to contradict the conclusions in the FEIS. The FEIS demonstrates that fish habitat in the upper North Fork Kuktuli reaches is proportionally small, and that the mine would not directly impact returning salmon numbers nor their ability to spawn/rear. The FEIS found that overall impacts would not be measurable and would fall within the range of natural variability. [Id. at 4.24-46.] The FEIS acknowledges some flow-related impacts to habitat quantity, but many of those impacts are actually positive changes to habitat acreage. In mainstem reaches, "81 to 90 percent of expected changes in suitable spawning habitat would be positive, or within 2 percent of pre-mine conditions, with more predicted increases in habitat than decreases, for both anadromous and resident fish species in an average water year scenario." [Id. at 4.24-14.] EPA's discussion of the portfolio effect does not question or undermine these conclusions.

In EPA's May 28, 2020 letter informing the District that EPA would not be pursuing the 404(q) elevation process, EPA states that the permit record should reflect that the sockeye salmon in the Kuktuli River is a genetically distinct population, citing an unpublished report from the Alaska Department of Fish and Game ("ADF&G"). [See EPA 3(b) Decline Letter.] However, ADF&G took exception to this characterization, responding that EPA's conclusion is not accurately based on the ADF&G report, but instead is "an EPA interpretation." [Ex. 5, Letter from D. Vincent-Lang, Comm'r, ADF&G, to C. Hladick, EPA Regional Administrator (June 1, 2020).] ADF&G clarified that the Kuktuli River population "represents one of four closely-related Nushagak River populations with a river-type life history in the baseline." [Id.] Thus, this population contributes to the overall diversity of the Bristol Bay portfolio. But neither ADF&G nor USACE identified a risk from the Project to the fishery based on the portfolio effect. [See id.; FEIS at 4.24-47 n.1 ("No long-term measurable changes in the number of returning salmon are expected, nor is genetic diversity expected to change; therefore, the impact to the Portfolio Effect would not be discernable.").]

PLP retained R2 Resource Consultants in 2020 to evaluate that potential of a portfolio level effect on upper Kuktuli Chinook and Coho salmon populations associated with the direct loss of freshwater salmon habitat due to Pebble mine development. [Ex. 6, R2 Resource Consultants, Inc., The Portfolio Effect on Upper Kuktuli River Coho and Chinook Salmon, White Paper (June 2020).] R2 concluded:

Specific to this analysis, we see evidence of habitat heterogeneity expressed in the variation of physical and chemical habitat conditions within these headwater tributary habitats . . . In accordance with the portfolio strategy, this habitat diversity will provide a basis for differential tributary responses to future environmental perturbations, will reduce the risk that these habitats will be unsuitable for salmon use in the future, and thus will be able to dampen potential effects on the upper Kuktuli River Chinook and Coho salmon populations. [Id. at 17.]

Therefore, the portfolio effect does not justify EPA's proposed approach of assuming that any fish habitat loss in the defined area could be detrimental to salmon. [The statement that even the loss of one small discrete population of the hundreds they say exist "may" have more significant impacts than expected is an example of EPA's speculative reasoning that pervades the document. If the applicable standard is that habitat in the Bristol Bay region which effects even one distinct population of salmon cannot be impacted, then developments like the proposed hydroelectric project near Dillingham will never come to fruition. In addition, it is highly likely that natural events such as the 1912 Novarupta volcano eruption have eliminated some discrete populations in the past without affecting the overall fishery. Moreover, the commercial fishery harvests millions of salmon each year, likely a much greater threat to "discrete populations" than any mine plan for the Pebble Deposit could ever be.] The FEIS correctly found that there would be no discernable impact to the portfolio effect from the Project.

EPA Response

EPA does not assume that "any fish habitat loss in the area could be detrimental to salmon," as the commenter states; rather, EPA concludes that habitat losses of the magnitude predicted to occur under the 2020 Mine Plan would constitute an unacceptable adverse effect on fishery areas. See EPA's response to comment 4.A.1 regarding the definition of fishery areas for the purposes of the FD. There is an extensive body of scientific evidence supporting EPA's conclusion that the productivity of salmon populations in the Bristol Bay region depends on the complexity of the region's aquatic habitats and the biological complexity of its salmon species (Section 3.3.3 of the FD), and that losses of such a magnitude would adversely affect habitat complexity and biological complexity in the SFK, NFK, and UTC watersheds. For comments specifically related to Exhibit 6 (R2 Resource Consultants Inc. 2020), see EPA's response to comment 4.J.23. Attachment 1 of Appendix B in the FD addresses FEIS conclusions that appear to be inconsistent with the FD.

4.J.23 The Pebble Limited Partnership (PLP) (Doc. #1912, Exhibit 6, p. 3-22)

1. INTRODUCTION

The portfolio effect, a common strategy used in financial investing, is founded on the premise that diversification across investment assets results in emergent properties of the portfolio that are different than the sum of the parts, and will minimize risk to the performance of the portfolio over

time. This financial strategy was adopted by ecologists as a new hypothesis late in the last century to theorize how ecological community stability could be achieved through increased species diversity (Doak et al. 1998). The application of the portfolio effect concept to ecology has been used to explain how a community with a diversity of ecological “assets” can develop emergent properties, that result from statistical averaging across all assets (Lhomme and Winkel 2002), and that may increase community stability in a dynamic environment. In this way, local habitat conditions are “uncoupled” from larger, regional ecological dynamics (Schindler et al. 2015).

Ecologists have used the portfolio hypothesis to describe the stabilizing properties of ecological systems across multiple scales including ecosystems, communities, and single species populations (Schindler et al. 2010). At the species level, genetic diversity expressed as discrete populations and/or different population dynamics are important aspects of the portfolio hypothesis (Schindler et al. 2015). In addition, these authors have theorized that interactions between animals and their habitats create a portfolio of species-specific habitat assets that vary in quality over space and time. Similar to a financial portfolio, the diverse assets in an ecological portfolio should be asynchronous; that is, they should be different enough from one another that they respond in different ways to a common environmental driver. Such asynchronous habitat assets should offer a wide variety of conditions that can support animal populations both now and into the future. Because of the uncertainty associated with future conditions, habitat that appears to be optimal or suboptimal habitat under current conditions, could well change in the future; thus, maintaining a variety of different quality asynchronous habitats has been postulated as helpful for ensuring the availability of future habitats for animal populations (Schindler et al. 2015).

This paper uses existing information to evaluate that potential of a portfolio level effect on upper Kuktuli Chinook and Coho salmon populations associated with the direct loss of freshwater salmon habitat due to Pebble mine development. The first step in such an evaluation would be the assessment of the homogeneity of habitat assets. For the upper Kuktuli River, potential salmon portfolio assets in freshwater would include discrete habitat units representing migratory/holding, spawning/incubation and/or rearing habitat. Because the direct impact of the proposed Pebble Mine would include the loss of two headwater tributaries, we will focus for this assessment on understanding the heterogeneity of headwater tributary rearing habitat. Specifically, we will focus on headwater tributary assets in the North and South forks of the Kuktuli River (NFK and SFK, respectively) that support varying levels of Chinook and Coho salmon rearing.

One underlying assumption when applying the portfolio strategy to fish ecology is that fish use of habitat will change over time as habitat conditions change in response to landscape or regional environmental drivers. Thus, it is important to conserve habitats with varying levels of fish use, even if they do not appear to have value under current conditions. As Schindler et al. (2015) explain, maintaining a network of connected habitats is a better strategy than conserving only the best habitats as it is more likely to provide habitat options for organisms in the face of environmental change.

Consistent with this assumption, our analysis of headwater tributary assets includes upper Kuktuli River tributaries known to support anadromous Chinook and Coho salmon, as well as tributary assets currently identified as only supporting nonanadromous fish and those with unknown fish use, due to a lack of survey data.

2. METHODS

Publicly available data and information about hydrography, physical habitat, water quality, and fish distribution in the North and South forks of the Kuktuli River have been incorporated into this analysis. The Pebble Environmental Baseline Document (EBD; PLP 2011), the Supplemental Environmental Baseline Document (SEBD; PLP 2018), and the Alaska Anadromous Waters Catalog (Johnson and Blossom 2019) were the primary source, although supplemental data from other sources has been incorporated where possible as described below.

2.1 Hydrography

The upper Kuktuli River basin is composed of two forks, North and South, that come together to form the mainstem river. Much of surface water in the forks drains from numerous distinct first to third order streams that can be classified as headwaters of the Kuktuli River, the remainder coming from groundwater. Headwater tributary assets were delineated and described using the USGS National Hydrography Dataset (NHD) in a GIS framework. Hydrography data was comprehensive, per the NHD flowline content, within the North and South Fork Kuktuli watersheds and allowed for review of all headwater tributaries (Table 2.1-1). Watershed delineations and drainage area estimates were developed using Project digital elevation models and Esri ArcGIS Spatial Analyst 10.71 hydrology tools.

[Table 2.1-1. Summary of data availability for headwater tributary assets in the North and South Fork Kuktuli rivers included in submission here]

2.2 Physical Habitat

Because the value of habitat for fish use may change over time, the objective of the physical habitat descriptions was to compare the physical habitat in anadromous tributary assets that would be directly impacted by the mine footprint (NFK 1.190 and NFK 1.200) with the habitat available in all unimpacted tributary assets regardless of tributary asset type. The Pebble EBD summaries of stream habitat surveys provided the primary source for stream physical habitat data. Habitat data in ADF&G's Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes and its associated Atlas were also included. Habitat survey data were available for 17 headwater tributaries, 11 of which have documented use by anadromous salmon (Table 2.1-1).

While physical habitat data collection varied across the headwater tributaries, there were seven key measures of habitat variability that were consistent enough to be used in this comparative analysis of tributaries assets. These seven attributes included: bankfull depth and width, stream channel gradient, beaver habitat frequency, pool frequency, substrate type, and riparian habitat. When available, habitat survey length is reported to provide context for habitat characterization.

2.3 Water Quality

Similar to physical habitat, the objective of the water quality analysis was to compare water quality attributes in one of the anadromous tributary assets directly impacted by the mine footprint (NFK 1.190) with the attributes of all unimpacted headwater assets. Differences in the NFK 1.200 water quality data collection precluded comparative analysis of this tributary. The Pebble EBD provided the primary source for water quality data.

Comparable water quality data sets were available at 7 sites in 6 tributaries, 3 of which have documented use by anadromous salmon (Table 2.1-1). A comparative analysis of variability for 12 water quality measures is presented. In addition, graphical presentation of select water quality measures relevant to salmon productivity were included for: pH, hardness, nutrient levels (phosphorus, nitrogen), and dissolved organic carbon (DOC).

Fish Assemblage Fish use of habitat and tributary asset type were both determined from existing fish distribution data (PLP 2011, 2018) and ADF&G's Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes (Johnson and Blossom 2019). Fish species richness (number of species) and assemblages were then compared between directly impacted and unimpacted tributary assets.

3. ANALYSIS

3.1 Asset Number and Area

Our review of available hydrography identified 78 headwater tributary assets that drain into the North and South forks of the Kaktuli River. This included 32 tributaries with documented fish rearing, 23 of those tributaries with documented rearing of Chinook and/or Coho salmon and 45 tributaries with unknown fish presence (Figure 3.1-1). Of the 23 tributaries known to support salmon rearing, 15 drain into the North Fork and 8 into the South Fork of the Kaktuli River. Two of these tributaries, 1.190 and 1.200 would be lost due to siting of mine facilities.

[Figure 3.1-1. Headwater tributaries in the North and South Fork Kaktuli Rivers included in submission here]

Using a systematic approach, we estimated that the drainage area for each of the headwater tributary assets ranged from 46.4 acres to 8,668 acres. The drainage areas for non-anadromous and unknown tributaries ranged from 46.4 acres to 1601.4 acres while the drainage area of anadromous tributary assets was generally larger, ranging from 227 acres to 8,668 acres. However, 39 percent of the anadromous tributaries had a similar drainage area size distribution as the non-anadromous tributaries. The estimated drainage areas of the two impacted tributary assets varied. The estimated area for NFK 1.190 was larger than all but 1 of the other anadromous tributaries and the estimated area for NFK 1.200 was larger than 5 and smaller than 17 anadromous tributaries (Table 3.1-1).

3.2 Physical Habitat

One coarse measure of the physical habitat variability in salmon habitat tributaries is channel size (bankfull depth and width). Smaller channels with closed deciduous canopies may provide higher relative allochthonous inputs of nutrients and prey items (Vannote et al. 1980), higher predation risk by avian or terrestrial predators (Quinn et al. 2001; Armstrong et al. 2019), and a higher probability of channel altering beaver activity (Naiman et al. 1986). Measures of Bankfull depth and width were collected in 13 headwater tributaries (Figure 3.2-1, Table 3.1-1). Tributaries NFK 1.190 and NFK 1.200 were intermediate in both depth, and width (Table 3.1-1,

Figure 3.2-1).

[Figure 3.2-1. Measures of channel size in headwater tributaries to the North and South Fork Koktuli Rivers included in submission here]

Beaver complexes are dynamic habitat features that were commonly observed during surveys of anadromous and non-anadromous tributary assets (in 12 of 15 tributaries) and comprised 1 to 59 percent of the stream length surveyed and 5 to 98 percent of the wetted habitat area. In [Table 3.1-1. Stream habitat in select tributaries of the Nork and South Fork Koktuli rivers included in submission here] 2005, surveys of all aquatic habitats near the proposed mine documented 113 active colonies at an average frequency of 0.27 lodges/km (PLP 2011). Impacted streams had varied frequencies of beaver complex habitats present. Beaver habitat frequency in NFK 1.190 was low at 1 percent of habitat length and 5 percent of wetted area; while, the frequency in NFK 1.200 was intermediate at 14 and 48 percent of stream length and wetted area, respectively.

Stream gradients provide another indication of channel form in headwater habitats. Higher gradient streams provide fewer slow-water habitats for rearing salmonids. Gradients in the 16 headwater tributaries ranged from 0 to 7.2 percent (Table 3.1-1). Impacted tributaries are intermediate in gradient with the 9th and 13th steepest channels at 3.2 and 1.7 percent gradient (Figure 3.2-2).

[Figure 3.2-2. Channel gradient in headwater tributaries to the North and South Fork Koktuli rivers included in submission here] Pool frequency is a measure of stream habitat used to describe rearing habitat quality. Pools provide thermal refugia, velocity refugia during high flow events, and rearing habitat for juvenile salmonids. Pool frequency in headwater tributaries ranged from 0 to 4.8 pools per 100 meters in the 15 streams with mesohabitat unit data (Table 3.1-1). Impacted streams had intermediate pool frequencies of 0.6 and 1 pool per 100 meters (Figure 3.2-3).

[Figure 3.2-3. Pool frequency in headwater tributaries to the North and South Fork Koktuli rivers included in submission here]

Salmon survival and production are generally reduced as fine sediment increases due to negative effects on incubating salmon eggs, reduced production of benthic invertebrates, reduced pool volumes. In addition, during freshwater rearing, juvenile salmon rely upon a diversity of substrate classes to provide camouflage, cover, and for overwintering. Of the 17 tributaries with substrate data, 9 were dominated by sand, silt or organic substrates; gravel or cobble was the dominant substrate in 8 tributaries. The two

impacted tributaries included NFK 1.190 with a dominant substrate of sand/silt and NFK 1.200 where gravel was the dominant substrate classification.

The health of riparian habitat, particularly forests as a source for large woody debris, is also often described as an important aspect of salmon rearing habitat. None of the headwater tributaries included riparian vegetation that would provide sources of large woody debris. Alder, willow and other herbaceous shrubs were the most common riparian vegetation types (Table 3.1-1). The riparian vegetation in NFK 1.190 and 1.200 were similar to vegetation in other tributaries.

3.3 Water Quality

Overall, the water quality attributes of NFK 1.190 were similar to that from the 7 other tributary assets (Table 3.3-1). The only attribute that stood out as outside the range of variation seen for other assets was pH in tributary NFK 1.190.

3.3.1 pH and Total Alkalinity

The Alaska Department of Environmental Conservation (ADEC) standard for pH for aquatic life is between 6.5 and 8.5. Of the 7 tributaries sampled, NFK 1.190 had the lowest pH, with a median value of 6.2 and 58 percent of 19 measurements below the 6.5 standard (Figure 3.3-1; Table 3.3-1). All other tributaries had median values of at least 6.5.

Alkalinity refers to the capability of water to neutralize acid. The rationale that alkalinity is related to stream productivity is based on the idea that carbon, derived from bicarbonate and carbonate alkalinity, is an algal macronutrient. Kwak and Waters (1997) showed that, at a broad geographic scale, alkalinity and salmonid biomass were positively and significantly correlated. Alkalinity is also important for fish and aquatic life because it protects or buffers against rapid pH changes. For the protection of aquatic life, the buffering capacity should be at least 20 mg/L.

Five of the 7 tributaries sampled, including NFK 1.190, had median alkalinity values less than 20 mg/L (Figure 3.3-2). These values are consistent with low levels of primary production.

[Figure 3.3-1. pH in headwater tributaries to the North and South Fork of the Kaktuli River included in submission here]

[Table 3.1-3. Select water quality measures representative of habitat conditions for seven Kaktuli River headwater tributary assets, July-October 2004-2008 (PLP 2011) included in submission here]

[Figure 3.3-2. Alkalinity in headwater tributaries to the North and South Fork of the Kaktuli River included in submission here]

3.3.2 Nutrients

The concentration of nitrate nitrogen (NO₃) is also an indicator of tributary potential to support biological productivity. Median nitrate nitrogen concentrations ranged between 0.016 and 0.134 mg/L

in the 7 tributaries with water quality data; NFK 1.190 was intermediate with a median concentration of 0.016 mg/L (Figure 3.3-3).

Total phosphorus data also shows generally low concentrations of phosphorus (Dodds et al. 1998). Median total phosphorus concentrations ranged between 0 and 0.029 mg/L in the 7 tributaries with water quality data; NFK 1.190 was at the higher end of the range with a median concentration of 0.016 mg/L (Figure 3.3-4).

These data suggest that headwater tributaries to the North and South Fork Kaktuli Rivers are oligotrophic and nutrient limited.

[Figure 3.3-3. Nitrate nitrogen in headwater tributaries to the North and South Fork of the Kaktuli River included in submission here]

[Figure 3.3-4. Total Phosphorus in headwater tributaries to the North and South Fork of the Kaktuli River included in submission here]

3.3.3 Dissolved Organic Carbon

In boreal streams, wetlands are known to be primary sources of dissolved organic carbon (DOC) (Robbins et al. 2017). The United Nations Environmental Programme reported a mean and range of DOC concentration for small Arctic rivers and alpine areas (Tundra) as 2 mg/L, 1-5 mg/L, respectively (Spitzky and Leenheer 1991). Median tributary concentrations in the North and South Fork Kaktuli rivers were consistent with that reported variation, ranging from 0.8 mg/L to 2.6 mg/L (Table 3.3-1). Tributary NFK 1.190 had intermediate DOC concentrations with a median of 1.3 mg/L (Figure 3.3-5). Relatively small differences in organic carbon levels (about 20%) can have measurable buffering impacts on aquatic systems, especially in areas where metals concentrations are elevated (Simonin et al. 1993; Baldigo and Murdoch 1997) or there are nearby acid inputs (Brakke et al. 1988).

[Figure 3.3-5. Dissolved Organic Carbon in headwater tributaries to the North and South Fork of the Kaktuli River included in submission here]

3.4 Fish Assemblage

The fish species richness for NFK 1.190 and 1.200 was six and included Chinook and Coho salmon and four non-anadromous fish species. Richness was similar across all 33 streams with documented fish use, where the median fish richness was 5 and the range was three to nine (Table 3.4-1). Furthermore, the salmon-specific richness in NFK 1.190 and NFK 1.200 was similar to that of other anadromous tributary assets with an overall range from one to four and a median of two. The two salmon species present in potentially impacted tributaries, Coho and Chinook salmon, were also the most frequently documented salmon in surveys between 2004 and 2018, with occurrences in 22 and 17 anadromous tributary assets, respectively (Table 3.4-1).

There was a large variation in fish assemblage documented in the 23 anadromous headwater tributaries sampled (Table 3.4-1). Sculpin (*Cottus* sp.) were the most common found in all 23 stream followed by

Coho Salmon (22), Dolly Varden (19), Chinook Salmon (17), Arctic Grayling (9), stickleback sp. (9), Sockeye Salmon (7), Northern Pike (4), Chum Salmon (3), Rainbow Trout (2) and whitefish (2). The fish assemblage in two anadromous tributaries that would be directly impacted by mine development was similar to other anadromous habitats that have been surveyed in North and South Koktuli River forks.

The most frequent fish assemblage observed in the anadromous tributaries included Coho Salmon, Dolly Varden, and sculpin which co-occurred in 19 of 24 (79 percent) tributaries including the two NFK 1.190 and 1.200. The next most frequent fish assemblage included Chinook Salmon co-occurring with Coho Salmon, Dolly Varden, and sculpin and was found in 14 of the 24 drainages (58 percent) including NFK 1.190 and 1.200.

[Table 3.4-1. Anadromous and resident fish documented in tributaries to the North and South Fork Koktuli River supporting anadromous salmon, 2004-2018 included in submission here]

4. DISCUSSION

This analysis demonstrates two conclusions relevant to an ecological portfolio perspective for upper Koktuli River Chinook and Coho salmon rearing habitat. First, the data demonstrate that there currently exists a diversified set of headwater tributary assets within the North and South Fork Koktuli River drainages. Second, review of the variability of 8 physical habitat attributes and 11 water quality attributes across current (with NFK 1.190 and 1.200) and potential future (without NFK 1.190 and 1.200) asset portfolios indicates that loss of these two directly impacted tributaries would not be expected to reduce the variation associated with habitat conditions in the potential future portfolio (Figures 4-1 and 4-2). The 76 tributaries that remain in the potential future portfolio will offer a diversified portfolio of habitat assets with a variety of conditions available for Coho and Chinook salmon to use into the future.

Many of the physical and ecological attributes of the two anadromous tributary assets that will be removed are similar to those available in other tributaries assets that will remain throughout the upper Koktuli River basin. Of the 20 different habitat attributes compared only one, pH in NFK 1.190, was outside of the range of variability for the portfolio of tributary assets. The pH recorded in NFK 1.190 was the lowest median pH detected and exceeded of ADEC standards more than that of the other 6 streams with comparable water quality data. When one considers that the available water quality data reflects only a subset of current headwater habitat assets, it is likely that variation reported herein represents a conservative perspective with respect to pH variability among all tributary assets.

The sample sizes for tributary assets with suitable physical and chemical attribute data is a significant determinant of this analysis. Unfortunately, comparable level of data was not available for all 78 of the headwater tributaries in the upper Koktuli River, nor for headwater tributaries from other drainages within the larger Nushagak River basin. While the data are not comprehensive for all 78 headwater tributary assets, it is likely that the diversification of habitat attributes would be similar, or even greater, than the subset of tributaries where were available. In addition, few locations in remote Alaska have data sets anywhere near the size of the Pebble data. The fact that suitable physical habitat data was

collected for 17 tributaries and water quality data for 7 tributaries in fact represents a fairly high sample size for this region and was sufficient to provide an initial look at potential portfolio effects at the scale of headwater tributary systems and their potential ecological value to the upper Kuktuli River subpopulations of Chinook and Coho salmon. It is also important to note that this scale of inference available from this data set is the appropriate scale of analysis, considering that potential impacts of the proposed mine are contained within the Upper Kuktuli River basin and that the salmon in the upper basin represent a small estimated fraction of the total number of salmon entering the Nushagak River.

A basic tenet of the portfolio strategy is that it is not about conserving the best habitats (Schindler et al. 2015) but conserving “a tapestry of habitat biodiversity”; for this reason this analysis focused primarily on available aquatic habitat and habitat use data and not on fish abundances or density. As ecosystem drivers change on a regional or global scale over time, habitat conditions will also change as will numbers of a particular species, such as Chinook or Coho salmon, using that habitat. If, after an environmental perturbation, sufficient diversity remains among habitat assets in a species portfolio at a landscape scale, the effect of that perturbation on that species would be dampened (Schindler et al. 2010, 2015). Thus, it is important for conservation of species or large assemblages of animals to maintain habitat heterogeneity independent of current levels of use.

Specific to this analysis, we see evidence of habitat heterogeneity expressed in the variation of physical and chemical habitat conditions within these headwater tributary habitats (Figures 4-1 and 4-2). In accordance with the portfolio strategy, this habitat diversity will provide a basis for differential tributary responses to future environmental perturbations, will reduce the risk that these habitats will be unsuitable for salmon use in the future, and thus will be able to dampen potential effects on the upper Kuktuli River Chinook and Coho salmon populations.

[Figure 4-1. Distributions of select physical habitat attributes in headwater tributaries to the North and South Fork Kuktuli rivers included in submission here]

[Figure 4-2. Distributions of select water quality attributes in headwater tributaries to the North and South Fork Kuktuli rivers with all tributary assets studied (N=8) and without tributary losses to mine development (N=7) included in submission here]

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137.

EPA Response

Although Exhibit 6 (R2 Resource Consultants Inc. 2020) states that it is an evaluation of the portfolio effect, it does not address anything about the genetic diversity of salmon populations. Rather, it uses the portfolio effect concept to discuss habitat heterogeneity among headwater tributaries in the NFK and SFK watersheds. Nothing included in Exhibit 6 addresses or eliminates the concerns about risks to the salmon population portfolio dynamics that would result from development of the 2020 Mine Plan, as described in Sections 3 and 4 of the FD.

Exhibit 6 uses the physical and chemical data available for headwater tributaries in the SFK and NFK watersheds to contend that the headwater tributaries that would be lost under the 2020 Mine Plan (NFK 1.190 and NFK 1.200) are similar to other headwater tributaries that would not be impacted by the 2020 Mine Plan. However, there are several limitations to this analysis that greatly limit the utility of its conclusions. First, although Exhibit 6 identifies 78 “headwater tributary assets” in the SFK and NFK watersheds, it appears that only 17 and 6 of these sites have physical habitat and water quality data, respectively. As discussed in greater detail in Appendix B, this limited amount of data does not adequately capture the expected spatial and temporal variability in these parameters.

Perhaps the greatest limitation of Exhibit 6 is that it makes comparisons based on each parameter individually. In reality, each stream is a particular combination of chemistry, hydrology, and geology (e.g., as evidenced by differences in gradient, off-channel habitats, DOC concentrations, nutrient concentrations and other characteristics) that together determine the characteristics of fish habitat—and fish communities respond to these differences across all habitat characteristics. As stated in the FD, similarities in aquatic resources across the SFK, NFK, and UTC watersheds do not mean that these habitats are interchangeable or substitutable (see Box 3-1). In addition, Exhibit 6 primarily compares headwater tributaries lost in the NFK watershed to unimpacted headwater tributaries in the SFK watershed. The fact that unimpacted tributaries occurring in a different watershed are similar (at least on a parameter-by-parameter basis) to lost tributaries that are buried by discharges of dredged or fill material is not relevant, given that salmon return to their natal streams.

Interestingly, Exhibit 6 does point out that the estimated drainage area for NFK 1.190 “was larger than all but 1 of the other anadromous tributaries,” indicating that the 2020 Mine Plan would result in the loss of the second largest tributary in the NFK watershed.

4.J.24 Alaska Peninsula Corporation (APC) (Doc. #2668, p. 4, 5)

3. The "Significant Degradation and Significant Loss" Argument is Pure Speculation.

The multi-agency environmental impact statement (EIS) for Pebble found that a Pebble mine posed no harm to the Bristol Bay fishery. Indeed, the EIS specifically noted that commercial fishers would see no reduction in fish values. Downstream waters would not see impact beyond what would be expected to be seen in seasonal fluctuations.

APC's shareholders' cultures are based upon dependence on subsistence fisheries, and salmon is at the very top. Thus, APC would not permit a threat to its subsistence resources. The EIS makes clear that no such threat exists. The real threat is to the economic livelihood of our shareholders now and in the future.

Indeed, the EIS for the Pebble project, as published by the United States Army Corp. of Engineers (USACE), demonstrates that the development can take place without harm to the Bristol Bay fishery:

"There would be no measurable change to the number of returning salmon and the historical relationship between ex-vessel values and wholesale values. In addition there would be no changes to wholesale values or processor operations expected Under normal operations, the alternatives would not be expected to have a measurable effect on fish numbers and result in long-term changes to the health of the commercial fisheries in Bristol Bay." (ES87)

"Under normal operations, the alternatives would not be expected to have a measurable effect on fish numbers or result in long-term changes to the health of commercial fisheries in Bristol Bay...." (ES4.6-3)

We note that other salmon fisheries in Alaska exist in conjunction with non-renewable resource extraction industries. Cook Inlet salmon fisheries exist in an active oil and gas basin within a significant population center. The Copper River salmon fishery occurs in a watershed with the remains of the historic Kennecott Copper Mine. The Trans-Alaska Pipeline system is at the headwaters of the fishery. Both fisheries average higher prices per pound than the Bristol Bay salmon fishery. See ES86.

(...)

The proposed determination ignores the human environment and particularly the economic collapse that is assured in the Iliamna Lake region if the EPA exercises the threatened preemptive veto. The economic impact of the threatened veto should be a part of the overall study.

EPA Response

Information and analysis in the FEIS and ROD support EPA's findings in the FD and both documents are cited extensively by the FD. Attachment 1 of Appendix B in the FD

addresses FEIS conclusions that appear to be inconsistent with the FD. Also see *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b) (referenced in Section 4.4 of the FD) for more information about EPA’s consideration of cost-related issues. Also, see EPA’s responses to comments in Topic 6.F.

TOPIC 5. PROPOSED DETERMINATION

5.A Proposed Prohibition

5.A.1 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 19-20)

The revised Proposed Determination prohibits the 2020 Mine Plan. However, the prohibition as drafted— applying only to the 2020 Mine Plan—is susceptible to future proposals crafted by PLP that, although not identical to the 2020 Mine Plan, would have the same effect as the 2020 Mine Plan. For example, PLP could evade the prohibition through modifications to its project proposal, including changes to the transportation corridor or port site. Such modifications to the project design—even insubstantial ones—would effectively gut the prohibition even though the unacceptable adverse effects at the mine site would remain substantially unchanged in impact.

EPA Response

With respect to the commenter’s concern that the scope of the prohibition as proposed in the PD is inappropriately narrow because future proposals to develop the Pebble deposit that would have the same adverse effects as the 2020 Mine Plan would not be subject to the prohibition, EPA notes that such future proposals were intended to be captured by the proposed restriction. However, EPA agrees with the commenter that such proposals are more effectively addressed by the prohibition. Section 5.1 of the FD therefore clarifies that for the purposes of the prohibition, “2020 Mine Plan” is (1) the mine plan described in PLP’s June 8, 2020 CWA Section 404 permit application (PLP 2020c) and the FEIS (USACE 2020a); and (2) future proposals to construct and operate a mine to develop the Pebble deposit with discharges of dredged or fill material into waters of the United States within the Defined Area for Prohibition that would result in the same or greater levels of loss or streamflow changes as the mine plan described in PLP (2020c). By clarifying the “2020 Mine Plan” for the purposes of the prohibition, EPA ensures that future applicants cannot circumvent the prohibition by proposing small changes in the location of discharges within the mine site (Figure 4-1) that would not result in any change to the levels of aquatic resource loss or streamflow change, or that would result in greater levels of aquatic resource loss or streamflow change. This clarification also addresses future proposals to discharge dredged or fill material associated with mining the Pebble deposit at the mine site that are identical to the discharges associated with PLP’s June 8, 2020 plan if the future proposal makes changes to components of a proposed project that

were not a basis for EPA's unacceptable adverse effects determinations (e.g., port site or transportation corridor).

In clarifying the "2020 Mine Plan," for the purposes of the prohibition, EPA gives full effect to the prohibition's purpose to prevent adverse effects at the mine site that EPA has already determined are unacceptable. To facilitate this clarification, EPA also revised the Defined Area for Prohibition (i.e., the geographic boundary within which the prohibition applies to waters of the United States), which is now delineated by the entirety of the Public Land Survey System (PLSS) quarter sections within the boundaries of the SFK and NFK watersheds where mine site discharges were proposed in the 2020 Mine Plan (see Section 5.1.1 of the FD).

EPA has determined that it remains appropriate to characterize the action taken in Section 5.1 of the FD as a prohibition. EPA's regulations provide that "[p]rohibit specification means to prevent the designation of an area as a present or future disposal site." 40 CFR 231.2(b). In the PD, EPA proposed to prohibit the specification of the discharges of dredged or fill material associated with PLP's 2020 Mine Plan, thereby preventing the designation of the area identified in Section 5.1.1 as a present or future disposal site for such discharges. EPA's final determination continues to prohibit the specification of the discharges of dredged or fill material associated with PLP's June 8, 2020 plan and merely clarifies that future proposals with small changes to the discharge location within the mine site area that would not result in any change to the levels of aquatic resource loss or streamflow change, or that would result in greater levels of aquatic resource loss or streamflow change are tantamount to the June 8, 2020 Plan and therefore fall within the definition of "2020 Mine Plan." Consistent with 40 CFR 231.2(b), the FD prevents the designation of the area identified in Section 5.1.1 as a present or future disposal site for the discharges of dredged or fill material associated with the "2020 Mine Plan."

The restriction addresses EPA's determination that certain discharges of dredged or fill material will have unacceptable adverse effects on anadromous fishery areas if the adverse effects of such discharges are similar or greater in nature and magnitude to the adverse effects of the 2020 Mine Plan described in Sections 4.2.1 through 4.2.4 of the FD. EPA's regulations provide that "restrict the use of any defined area for specification . . . is to restrict the use of any area for the present or future discharge of any dredged or fill material." 40 CFR 231.2(c). Consistent with 40 CFR 231.2(c), the FD "restrict[s] the use" of the area identified in Section 5.2.1 of the FD for certain future discharges of dredged or fill material if the adverse effects of such discharges are similar or greater in nature and magnitude to the adverse effects that underpin the prohibition. The action taken in Section 5.2 of the FD employs a standard (i.e., "adverse effects similar or greater in nature and magnitude to those described in Section 4.2.1 through 4.2.4") to restrict the use of an area for certain future discharges of dredged or fill material as opposed to preventing the

designation of an area for the discharges associated with a plan (i.e., the “2020 Mine Plan”). Accordingly, EPA determined it was more appropriate to characterize that action as a “restriction” rather than a “prohibition.” From a practical perspective, whether an action under this FD is characterized as a “prohibition” or a “restriction” should not affect how the action operates or is implemented.

EPA also notes that it uses “similar or greater in nature and magnitude” in the restriction to acknowledge that the discharges of dredged or fill material that are subject to the restriction are not the “same” as the discharges that are subject to the prohibition (i.e., associated with the “2020 Mine Plan”). The restriction standard (i.e., “similar or greater in nature and magnitude”) focuses on the similarity of the adverse effects because the aquatic resource losses and streamflow changes from the discharges subject to the restriction could occur at various locations within the diverse, highly connected, and ecologically valuable aquatic habitats in the SFK, NFK and UTC watersheds. Section 5.2 of the FD makes clear that to the extent that future discharges are subject to the prohibition, the restriction will not apply.

5.A.2 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 3-5)

EPA's website overstates that the 2022 PD would "Protect Bristol Bay Watershed."

The first words a person sees on EPA's Bristol Bay website since May 25, 2022 are an overstatement: "EPA Announces Revised 'Proposed Determination' to Protect Bristol Bay Watershed." [That misleading statement appeared on the Bristol Bay website since about the time EPA announced the 2022 PD. See <https://www.youtube.com/watch?v=hE9pOGjcrWg&t=90s> (showing the same screenshot on June 6, 2022).] (Emphasis added)

[Screenshot of EPA Bristol Bay Website Homepage included in submission here]

The prohibition applies only to waters of the United States within the "footprint" of the 2020 Mine Plan. The restriction applies only to such waters within 309 square miles in the headwaters of the North Fork Kaktuli River, South Fork Kaktuli River, and Upper Talarik Creek drainages.

The following maps from the 2022 PD at ES-14, ES-15 depict, in relation to wetlands (on the left) and streams and waterbodies (on the right), the defined area of the prohibition (i.e., waters with the grey footprint of the 2020 Mine Plan) and the defined area of the restriction of future mine plans for the Pebble deposit (waters within the 309-square-mile red boundary).

[Maps of 2022 PD at ES-14, ES-15 Wetlands, Streams, and Water Bodies, Defined Area of Prohibition, and Defined Area of Restriction included in submission here]

The 309 square miles in which the restriction applies to waters impacted by future mine plans total about 198,000 acres or 1.5 percent of approximately 13 million acres of non-federal land in the Bristol Bay watershed. EPA's website misleads the public by implying that the 2022 PD would protect the

"Bristol Bay Watershed" when it does not. Standing alone, that overstatement might be innocuous. Taken together with other errors and omissions, it is not. Combined with the legislative ideas which have circulated, all of EPA's errors and omissions, and the increased limits, are deeply troubling and require careful and full review.

EPA Response

See EPA's response to comment 2.D.1.

5.A.3 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 5-6)

3. EPA's press release then misleads by declaring that the 2022 PD would "prohibit discharges of dredge or fill material associated with mining the Pebble deposit ... within the mine site footprint of [PLP's] 2020 Mine Plan," when the 2022 PD does not prohibit discharges associated with any future mine plan into the 2020 Mine Plan footprint.

The press release then declares:

The Proposed Determination proposes to prohibit discharges of dredged or fill material associated with mining the Pebble deposit into waters of the United States within the mine site footprint for the 2020 Mine Plan located in the South Fork Kaktuli River, North Fork Kaktuli River, and Upper Talarik Creek watersheds. [Emphasis added]

That statement could not be further from the truth. It conflates (1) what the 2022 PD would prohibit (i.e., discharge of dredged or fill material "for the construction and routine operation of the 2020 Mine Plan" [2022 PD at ES-13, 5-2; see footnote 3, supra.]) with (2) where the 2022 PD would prohibit such discharges (i.e., into waters of the United States in "the portion of the mine site footprint for the 2020 Mine Plan within the SFK and NFK watersheds" [2022 PD at ES-13, 5-2; see footnote 3, supra.]). The prohibition would apply only to discharges within "the mine site footprint for the 2020 Mine Plan" occurring "for the construction and routine operation of the 2020 Mine Plan." The prohibition does not apply, as that statement falsely claims or implies, to any other future mine plan involving "discharges of dredged or fill material associated with mining the Pebble deposit" occurring within the footprint of the 2020 Mine Plan.

EPA Response

See EPA's response to comment 2.D.1. Also, Section 5 has been revised since the PD. The prohibition is described in Section 5.1 of the FD. The prohibition applies to future proposals to construct and operate a mine to develop the Pebble deposit with discharges of dredged or fill material in the Defined Area for Prohibition that would result in the same or greater levels of loss or streamflow changes as the 2020 Mine Plan (i.e., the aquatic resource losses and streamflow changes identified in Sections 4.2.1 through 4.2.4 of the FD). Also, the Defined Area for Prohibition has been modified to include the entirety of the Public Land Survey System (PLSS) quarter sections where mine site

discharges were proposed in the 2020 Mine Plan within the headwaters of the SFK and NFK watersheds. See EPA's response to comment 5.A.1 for more information regarding these changes to the prohibition.

Regarding EPA's press releases about this CWA Section 404(c) action, see EPA's response to comment 2.D.1.

5.A.4 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (BBFA) (Doc. #0830, p. 2)

EPA's 2022 PD has two parts. First, part of the 2022 PD is a proposed post-application determination. It would –

prohibit the specification of waters of the United States within the mine site footprint for the 2020 Mine Plan located in the SFK [South Fork Koktuli River] and NFK [North Fork Koktuli River] watersheds (Figure ES-4) (PLP 2020b) as disposal sites for the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan (PLP 2020b, USACE 2020a: Appendix J). The Defined Area for Prohibition is the portion of the mine site footprint for the 2020 Mine Plan within the SFK and NFK watersheds (Figure ES-4) (PLP 2020b). The discharges prohibited in the Defined Area for Prohibition are dredged or fill material for the construction and routine operation of the 2020 Mine Plan.

2022 PD at 5-2. This would prohibit PLP's 2020 Mine Plan. It was for a 20-year, 1.3-billion-ton Pebble mine, and the U.S. Army Corps of Engineers in November 2020 denied PLP's permit application for the 2020 Mine Plan. Thus, the prohibition would overlay and arguably duplicate the Corp's denial of that permit application, and would probably moot PLP's administrative appeal of the Corps' denial. Although some media have erroneously described this as prohibiting Pebble mine, such descriptions err because the prohibition applies only to the 2020 Mine Plan and does not apply to a revised mine plan, even one that utilizes most of the same footprint as the 2020 Mine Plan. Nevertheless, we support this part of the 2022 PD because the 2020 Mine Plan was vastly more destructive than the limits that would have been allowed under the 2014 PD.

EPA Response

EPA agrees the 2020 Mine Plan would be destructive and result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD describes EPA's basis for its findings of unacceptable adverse effects on anadromous fishery areas. Also, Section 5 of the FD has been revised since the PD. See EPA's responses to comments 5.A.1 and 5.A.8.

5.A.5 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 13-14)

Comments regarding whether the discharge of dredged or fill material associated with mining the Pebble deposit should be prohibited, prohibited/restricted as proposed, prohibited/restricted in another manner, or not prohibited/restricted at all. In particular, EPA Region 10 is seeking comment on

whether environmental effects associated with the discharge of dredged or fill material from mining the Pebble deposit in amounts other than those proposed in the 2020 Mine Plan (1.3 billion tons of ore over 20 years) could provide a basis for alternative or additional restrictions.

Discharge of dredged or fill material should be prohibited in the region, but prohibitions should not be limited to the Pebble deposit or the mine footprint alone. Rather, prohibitions should extend to all nearby watersheds potentially impacted by currently proposed and explored, and potential future mines in this ubiquitously pristine and productive salmon habitat. Barring EPA's underestimation of actual stream miles impacted, the adverse effects resulting from mining any significant deposit in the region would be identical to those resulting from the Pebble deposit described in the PD.

EPA Response

Section 5 of the FD has been revised since the PD, which includes modifications to the Defined Area for Prohibition. Section 5.1.1 of the FD describes the geographic boundary of the Defined Area for Prohibition and the basis for the revision. The Defined Area for Restriction has not changed in the FD, and Section 5.2.1 of the FD describes the basis for the geographic boundary of the Defined Area for Restriction. See EPA's response to comment 5.A.1 regarding revisions to the prohibition to address future proposals to develop the Pebble deposit. See also EPA's responses to comments 5.A.7 and 5.B.19 regarding the sizes of the defined areas.

The prohibition and restriction continue to focus on the discharge of dredged or fill material associated with developing the Pebble deposit. See EPA's responses to comments 4.B.27 regarding why the FD remains focused on discharges associated with developing the Pebble deposit and 4.B.50 regarding the scope of discharges and impacts evaluated in the FD.

5.A.6 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 15)

Pg. ES-12: "The Defined Area for Prohibition is the portion of the mine site footprint for the 2020 Mine Plan within the SFK and NFK watersheds."

Comment: The prohibition is too limited and should include all watersheds potentially impacted by mining the Pebble deposit including associated infrastructure, and should additionally include watersheds that would be impacted by adjacent and other nearby claims. Those watersheds include Upper Talarik Creek, Lower Talarik Creek, Chulitna River (which drains into Lake Clark National Park), Kaskanak Creek, and the Stuyahok River—all of which are documented anadromous streams.

EPA Response

See EPA's response to comment 5.A.7.

5.A.7 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 56-61)

B. BBNC Supports a Clarified Prohibition

BBNC supports using a prohibition to protect Bristol Bay from the threat posed by mining the Pebble deposit. However, the prohibition as drafted – with its qualification that it applies only to the 2020 Mine Plan – is vulnerable to future creative permit application proposals from PLP that are in effect the same as that mine plan but not identical. As described in Section III(D) above, this threat is very real as PLP and its parent company NDM have publicly stated their intentions to amend the 2020 mine plan in future permitting efforts. Small ancillary changes to PLP’s permit application, such as changes to the proposed transportation corridor, port site, or compensatory mitigation plan would result in modifications to the 2020 Mine Plan and a rebranding of the plan as something other than “the 2020 Mine Plan.” This would potentially make the prohibition inapplicable to the proposal despite the fact that the mine site footprint would remain unchanged and be proposed as the discharge site for dredge and fill material from mine operations. To address this problem, BBNC presents two separate recommendations. Implementation of either of these recommendations would clarify that the prohibition applies to all proposals to mine the Pebble deposit that are substantially similar to the 2020 Mine Plan.

1. Recommendation #1 – Region 10 Should Strengthen the Delineation of the Defined Area for Prohibition to Include Alternative Mine Facilities Proposals Later Rejected by PLP and/or Proposals Later Rejected by the Army Corps

In specifying waters that cannot be used as a disposal area, Region 10 should not limit the “Defined Area for Prohibition” to the 2020 Mine Plan footprint, but rather prohibit discharges into designated rectangular survey system township, range, and section units that encompass: (1) areas PLP proposed to use in the 2020 Mine Plan (i.e., the current 2022 PD Defined Area for Prohibition) as well as (2) areas PLP proposed and the Corps considered as other options for mine site tailings storage facilities and the water treatment ponds as analyzed and rejected in the EIS process. [PLP’s options and associated footprint maps are found in the Army Corps record in PLP’s responses to Army Corps Requests For Information (“RFI”) numbers 69, 98, and 150. See also, Final EIS Appx. B Figure B-4.]

This approach would rely closely on the Army Corps permitting record and PLP’s own proposals. In addition, by using the footprints of tailings storage facilities and water management pond alternatives rejected by the Army Corps during the permitting process, EPA’s 404(c) action would further codify the 404 permitting decision.

To implement this recommendation, Region 10 should utilize the contiguous rectangular survey system township, range, and section units that encompass the alternative TSF and water management pond sites determined by the Army Corps as not constituting the LEDPA, as seen in Figures 7 and 8 below. These previously rejected options, or some combination thereof, might be relevant to PLP’s future mine plans, as the company’s options for siting facilities are limited by the region’s topography, climate, and other factors. [For instance, as EPA noted in the 2014 BBWA, the topography in the region limits PLP’s

options for siting its tailings storage and water management facilities. 2014 BBWA at p. 6-2 and Appx. I at p. 7 (“The selection and design of a tailings disposal site is site specific and depend on factors such as climate, topography, geology, hydrology, seismicity, economics, and environmental and human safety.”).]

[Figure 7. Map of Tailings Storage Facility Location Options Analyzed by the Army Corps and Determined to Not Be in the LEDPA included in submission here]

[Figure 8. Map of Water Management Pond Alternatives Analyzed by the Army Corps and Determined to Not Be in the LEDPA included in submission here]

Region 10 should also limit this area to the North Fork and South Fork Koktuli Rivers, as these waterbodies were the main target for PLP’s disposal site. Thus, this suggested Defined Area for Prohibition is approximately 57 square miles within the North Fork and South Fork Koktuli watersheds and consists of the following sections as shown in Figure 9 below:

[Table 7. Defined Area for Prohibition Table included in submission here]

[Figure 9. BBNC GIS MAP of Proposed Prohibited Disposal Area that Encompasses TSF and Water Management Pond Alternatives Determined Not to be the LEDPA by the Army Corps included in submission here]

By delineating a “Defined Area for Prohibition” as a contiguous block of rectangular survey system sections that encompass the alternative TSF and water management pond sites, Region 10 would ensure that the Defined Area for Prohibition includes potential future mine site facilities as well as codifying the Army Corps’ rejection of these alternative sites as being more environmentally damaging than the 2020 Mine Plan.

In the alternative, Region 10 should at the very least delineate the “Defined Area for Prohibition” by designating the sections that encompass the 2020 Mine Plan footprint. This approach would avoid gaps in the surficial area covered by the prohibition by utilizing a contiguous block of rectangular survey system units and would give the prohibition a more practical and transparent delineation.

2. Recommendation #2 – Region 10 Should Focus the Prohibition on the Type and Location of Mining Activity and Not Solely on PLP’s 2020 Mine Plan

In addition to the revised geographic scope of the Defined Area for Prohibition, Region 10 should focus the prohibition on the type and location of the mining activity and not solely on PLP’s 2020 Mine Plan. To accomplish this, Region 10 should clarify that the prohibition applies more broadly than PLP’s 2020 Mine Plan.

Region 10 may accomplish this with changes to the 2022 PD such as:

* “prohibit . . . the discharge of dredged or fill material for the construction and routine operation of a large-scale porphyry mine at the Pebble deposit.”

Or

* “prohibit . . . the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan (PLP 2020b, USACE 2020a: Appendix J) and substantially similar mine plans.”

When implementing this recommendation, any use of the “Pebble deposit” in the prohibition should utilize a defensible definition of the Pebble deposit as discussed in section A(1) above, namely Region 10 should base the definition and delineation of the Pebble deposit area on the best available information and science of ecological effects from mining pyritic ore.

With these changes, Region 10 would provide more certainty to the people of Bristol Bay that, in the event that PLP decides to re-initiate 404 permitting, any final 404(c) prohibition would not be a dead letter that only applied to a now obsolete mine plan. Instead, EPA would be clarifying for the people of Bristol Bay and to mine proponents that any plan to mine the Pebble deposit would, due to the necessary size and type of mining that would occur within these pristine waters, be prohibited.

EPA Response

EPA has revised Section 5 of the FD in response to comments that the scope of the prohibition in the PD was inappropriately narrow. See Section 5 of the FD and EPA’s responses to comments 5.A.1 and 5.C.60. The FD does not implement the exact recommendations proposed by the commenter. However, EPA revised the Defined Area for Prohibition to incorporate, in part, the commenters recommendation to use PLSS survey blocks. See EPA’s response to comment 5.A.1. See Section 2.1.2.2 of the FD for more information about the alternative TSF and water management pond sites that PLP proposed, and which USACE rejected during the EIS process. The administrative record supports EPA’s FD.

See EPA’s responses to comments 7.0.1 and 4.B.27 for EPA’s justification for developing this action using the most current information available to the Agency and why the FD remains focused on discharges associated with developing the Pebble deposit.

5.A.8 United Tribes of Bristol Bay (UTBB) (Doc. #0823, p. 6-7)

A. Prohibitions

UTBB is pleased to see the inclusion of a prohibition of dredge and fill materials in the RPD. The use of a section 404(c) prohibition is supported by sound science and the lengthy record developed by the EPA’s 2014 Bristol Bay Watershed Assessment and the Army Corps of Engineers’ 2020 Environmental Impact Statement. However, UTBB understands that the proposed prohibition as written would only seek to prohibit dredge and fill material associated with the routine construction and operation of the Pebble Mine as described in the company’s 2020 mine plan submitted to the Army Corps. This qualification on the prohibition severely limits its practical effect as it is merely a prohibition on a mine plan already deemed un-permittable by the Army Corps of Engineers in its 2020 Record of Decision. As written, the RPD’s prohibition is vulnerable to future permit application proposals from the Pebble Limited

Partnership (PLP) that are in effect the same as that mine plan but not identical. UTBB does not believe this is what the EPA intended when it determined to utilize a section 404(c) prohibition. As such, UTBB suggests EPA adopt language that clearly delineates the defined area in which the prohibition applies, as well as what types of dredge and fill are specifically being prohibited.

In specifying waters that cannot be used as a disposal area, UTBB suggests that EPA not limit the area to the 2020 Mine Plan footprint, and instead prohibit discharges into designated rectangular survey system township, range, and section units that encompass: (1) areas PLP proposed to use in the 2020 Mine Plan as well as (2) areas PLP proposed as other options for mine site tailings storage facilities and the water treatment ponds as analyzed and rejected in the Army Corps' EIS process. Next, EPA suggests EPA provide greater specificity as to what mining-related activities at the Pebble Deposit are being prohibited. Language to this effect may be:

1. prohibit . . . the discharge of dredged or fill material for the construction and routine operation of a large-scale porphyry mine at the Pebble Deposit; or
2. prohibit . . . the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan and substantially similar mine plans.

Prohibition language such as this will ensure that the section 404(c) prohibition is addressing the real issue at stake: that dredge and fill material associated with mining the Pebble Deposit poses an unacceptable adverse impact to the fisheries resources of the Bristol Bay Region.

EPA Response

See EPA's response to comment 5.A.7.

5.A.9 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 3, 4)

{Prohibition Recommendations}

(...)

Remove the limitations to PLP's 2020 Mine Plan.

Alternatively, or in addition, EPA should focus the prohibition on a broader set of mining activities that target the Pebble deposit. For example:

a. "prohibit . . . the discharge of dredged or fill material for the construction and routine operation of a large-scale porphyry mine at the Pebble Deposit."

or,

b. "prohibit . . . the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan (PLP 2020b, USACE 2020a: Appendix J) and substantially similar mine plans. "

EPA Response

See EPA's response to comment 5.A.7.

5.A.10 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 3)

Prohibition Recommendations

We understand EPA's Proposed Determination applies to the 2020 Mine Plan and thus would remove the 2020 Mine Plan as a possible future threat to the region. However, the prohibition as drafted - with its qualification that it applies only to the 2020 Mine Plan - is vulnerable to future creative permit application proposals from Pebble Limited Partnership (PLP) that are in effect functionally the same as that prohibited mine plan but not identical.

This threat is real. For example, after the Army Corps denied PLP's permit application, the CEO of PLP's parent company stated that the company was looking for ways to amend its mine plan, including new options for gold recovery, dry-stacking, and an underground mine at the Pebble deposit.

Changes to PLP's proposed transportation corridor, port site, or compensatory mitigation projects would similarly result in modifications to the 2020 Mine Plan, rendering the prohibition as currently stated in EPA's Proposed Determination moot even though impacts to the mine site would remain unchanged.

EPA Response

Section 5 of the FD was revised since the PD in response to comments. See EPA's responses to comments 5.A.1 and 5.A.7 regarding changes to the prohibition. Section 5 of the FD is also clear that not all future proposals to develop the Pebble deposit may be subject to this FD and that "[p]roposals to discharge dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to this determination remain subject to all statutory and regulatory authorities and requirements under CWA Section 404."

5.A.11 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 3)

{Prohibition Recommendations}

(...)

Revise the definition of the Pebble Deposit.

Redefine and specify that the "Pebble deposit" is broader than "an area of at least 1.9 by 2.8 miles" or delineated as a 2.5 mile- by 3.5-mile box and instead base the definition of the Pebble deposit on the best available information and science of ecological effects from mining pyritic ore. In the alternative, when

defining the Pebble deposit ore body that, when mined, would be subject to the prohibition, use PLP's definition of the Pebble deposit as seen in its filings with the U.S. and Canadian Securities agencies.

EPA Response

See EPA's response to comment 5.C.60.

5.A.12 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 3)

{Prohibition Recommendations}

(...)

Prohibit alternative mine facility locations proposed by PLP in the permitting process.

In specifying waters than cannot be used as a disposal area, do not limit the area to the 2020 Mine Plan footprint, but rather prohibit discharges into designated rectangular survey system township, range, and sections that encompass: (1) areas PLP proposed to use in the 2020 Mine Plan as well as (2) areas PLP proposed as other options for mine site tailings storage facilities and the water treatment ponds as analyzed and rejected by the Army Corps in the EIS process.

EPA Response

See EPA's response to comment 5.A.7.

5.A.13 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 20)

Recommendations regarding the Prohibition

1. In specifying waters than cannot be used as a disposal area, do not limit the area to the 2020 Mine Plan footprint but rather prohibit discharges into designated rectangular survey system township, range, and section units that encompass: (1) areas PLP proposed to use in the 2020 Mine Plan as well as (2) areas PLP proposed as other options for mine site tailings storage facilities and the water treatment ponds as analyzed and rejected in the EIS process.

2. Focus the prohibition on a broader set of mining activities that target the Pebble deposit, e.g., prohibit discharges within the prohibited disposal area (see #1 above). For example:

a. prohibit the discharge of dredged or fill material for the construction and routine operation of a large-scale porphyry mine at the Pebble Deposit.

or

b. prohibit the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan (PLP 2020b, USACE 2020a: Appendix J) and substantially similar (or larger) mine plans in size or impact.

EPA Response

See EPA's responses to comments 5.A.1 and 5.A.7.

5.A.14 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 14)

Comments on whether and how EPA Region 10's proposed action under CWA Section 404(c) should consider discharges of dredged or fill materials beyond those associated with the mine site and include discharges associated with the construction of other mine infrastructure, (e.g., port, pipelines, transportation corridors)

Again, impacts of ALL project components should be considered in assessing and prohibiting unacceptable adverse effects to the fishery. In particular, the impacts of an 82-mile long road in a currently roadless area are well documented and summarized in the BBWA, technical comments regarding the DEIS and FEIS (e.g., Frissell and O'Neal 2019 [Frissell, C. and S. O'Neal. 2019. Direct and cumulative impacts of road system fugitive dust in the Pebble Project draft EIS. Memorandum to US Army Corps of Engineers in response to solicitation for comments. 29 pp.], Lubetkin 2019 [Lubetkin, S. 2019. A critique of the transportation corridor spill risk estimates of diesel, ore concentrate, and chemical reagents in the Pebble Project draft environmental impact statement. A report for Cook Inletkeeper in response to US Army Corps of Engineers solicitation for comments. 92 pp.], O'Neal 2020 [O'Neal, S.L. 2020. Pebble Mine Final Environmental Impact Statement (FEIS): Anticipated adverse impacts from the transportation corridor. A report for the Wild Salmon Center in response to US Army Corps of Engineers solicitation for comments. 47 pp.]), and by many others. Overlooking these aspects of mine development—which would be required for any mine in the region in addition to Pebble Mine and outside of NFK, SFK, and UTC—fails to sufficiently protect the fishery.

EPA Response

See EPA's response to comment 4.B.50.

5.A.15 Midgard Environmental Services LLC (Doc. #0616, p. 3)

Comment #8 - The defined area for prohibition is well justified given it is directly based upon the 2020 Mine Plan submitted by the developer as part of the EIS permitting process. By directly tying the area of prohibition to the submitted mine plan, it is clear that this prohibition does not represent a "pre-emptive veto" of the proposed development project. I also believe that the defined area for restriction is well justified because it all falls within the same extremely sensitive watersheds that would be unavoidably impacted by any development of the Pebble ore body.

EPA Response

Section 5 of the FD was revised since the PD in response to comments. See EPA's responses to comments 5.A.1 and 5.A.7 regarding changes to the prohibition, including a modification to the Defined Area for Prohibition.

5.A.16 Environmental Protection Network (EPN) (Doc. #0857, p. 5)

EPN has reviewed these findings and fully supports the Region 10 analysis and conclusions, and the issuance of the 2022 Proposed Determination prohibiting the specification of identified areas for the discharge of dredged or fill material under Section 404(c), and endorses the issuance of a Recommended Determination consistent with the Proposed Determination.

EPA Response

See EPA's response to comment 1.A.1. Section 5 of the FD, which describes the prohibition and restriction, has been revised since the PD. See also EPA's responses to comments 5.A.1, 5.B.1, and 5.B.8.

5.A.17 SalmonState (Doc. #0858, p. 4)

Prohibitions

Thank you for proposing prohibitions to protect the headwaters of Bristol Bay. SalmonState agrees that the magnitude of harm from development of the Pebble deposit warrants a prohibition. Any large-scale mining operations and waste storage of the Pebble deposit in the South Fork Koktuli River, North Fork Koktuli River, or Upper Talarik Creek watersheds in Bristol Bay would destroy salmon and resident fish streams, adversely impacting Bristol Bay Native peoples, the local and state economy, and the largest sockeye salmon population in the world. [2014 PD, at ES-1.] The "2020 Mine Plan" by PLP was a proposal set forward by PLP as a "small mine" of the Pebble deposit. However, this 2020 Mine Plan was neither the first nor intended to be the last proposal put forward by PLP for the development of the Pebble deposit.

From the time of the initial Clean Water Act § 404 permit application and mine proposal sent to the Army Corps in 2017 to the date the agency denied the permit application in November 2020, PLP submitted multiple proposals for significant changes to the mine configuration, construction, and operations. All these proposals for development of the Pebble deposit would result in unacceptable adverse effects on the aquatic environment. While the "2020 Mine Plan" may represent the most recent iteration of a proposal from PLP, these changes demonstrate that some flexibility is warranted in the configurations of the mine development covered by the prohibitions and should not be strictly limited to the 2020 Mine Plan.

Furthermore, the released recorded conversations of Tom Collier (former PLP CEO) and Ron Thiessen (NDM CEO) known as "The Pebble Tapes" barred the true plans and of PLP to further develop the Pebble deposit. The intent of PLP to fully develop the Pebble deposit disclosed on these tapes was not reflected in the 2020 Mine Plan presented to the Army Corps. While the 2020 Mine Plan proposal was for the development of a fraction of the ore body in the Pebble deposit for 20 years, the Pebble Tapes revealed that PLP intends to develop and operate a mine of the full deposit for 200 years. This intentional deception by PLP of the permitting agency demonstrates the willingness of the company to put forward a fictitious mine proposal in front of the federal agencies. As such, SalmonState requests that EPA

provides the prohibition of the discharge of dredge and fill material from the development of the 2020 Mine Plan or a mine plan markedly similar.

EPA Response

The commenter raises concerns that the scope of the prohibition is inappropriately narrow. The prohibition in the FD has been revised to address this issue, see Section 5 of the FD. The FD does not implement the exact recommendation proposed by the commenter. EPA found the recommendation would unnecessarily introduce a new vague term (i.e., “mine plan markedly similar”) that would require additional clarification. See EPA’s responses to comments 1.B.2, 4.B.3, 5.A.1, and 5.A.7.

5.A.18 Bristol Bay Regional Seafood Development Association (BBRSDA) (Doc. #2062, p. 9)

Second, BBRSDA supports an effort to clarify that the prohibition’s reference to 2020 Mine Plan would include substantially similar mine plans or effectively any large-scale porphyry mine at the Pebble deposit. While BBRSDA believes that this is already self-evident in the current wording, it would help guard against any potential misunderstandings and potentially avoid future unnecessary use of EPA’s time and resources.

EPA Response

See EPA’s responses to comments 5.A.1 and 5.A.7.

5.B Proposed Restriction, and Defined Area for Restriction

5.B.1 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 20-21)

Recommendations regarding the Restrictions

3. Provide more detail on what constitutes adverse effects “similar or greater in nature and magnitude” with a focus on ecological effects supported by sound science that would restrict a mine similar to that analyzed in the 2014 Proposed Determination [U.S. 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), available at

https://www.epa.gov/sites/production/files/2014-07/documents/pebble_pd_071714_final.pdf

[hereinafter 2014 Proposed Determination].] and Watershed Assessment.

4. Redefine and specify that the “Pebble deposit” is broader than “an area of at least 1.9 by 2.8 miles” or delineated as a 2.5 mile- by 3.5-mile box and instead base the definition of the Pebble deposit on the best available information and science of ecological effects from mining pyritic ore.

Two options for redefining the “Pebble deposit” include:

a. Remove reference to a specific border for the Pebble deposit and instead focus the restriction on the character of the orebody. As acknowledged by EPA, the full extent of the Pebble deposit is an estimate based on PLP's exploration efforts and should not be used as the basis of the restriction. Because the extent of the deposit may expand over time, the agency should focus on the ore type as it is the ecological effect of mining this ore type that EPA uses to support its restriction.

or

b. Use PLP's definition of the Pebble deposit and orebody extent from the company's 2021 Preliminary Economic Assessment report, including the full 11 billion tons of measured, indicated, and inferred ore at the Pebble deposit. [BBNC, Comments of Bristol Bay Native Corporation on EPA Region 10's Proposed Determination to Prohibit and Restrict the Use of Certain Waters within Defined Areas as Disposal Sites: Pebble Deposit Area, Southwest AK; Docket ID No. EPA-R10-OW-2022-0418 (Sept. 6, 2022) at Sections VII and IX [hereinafter BBNC Comments on the Revised Proposed Determination].]

EPA Response

Section 5 of the FD was revised in response to comments to provide additional clarification regarding what constitutes adverse effects "similar or greater in nature and magnitude." Clarifications include the addition of a new subsection that discusses applicability of the restriction (Section 5.2.2) and a new text box that describes data requirements associated with applicability assessments (Box 5-1). See EPA's response to comment 7.0.1 regarding mine scenarios analyzed in the 2014 PD. See EPA's response to comment 5.C.60 regarding the definition of the Pebble deposit for purposes of this FD and responses on the two options the commenter suggested to redefine the Pebble deposit. See also EPA's response to comment 5.B.8, which describes other revisions pertaining to the restriction.

5.B.2 Loren Karro (Doc. #0847, p. 1)

I am impressed with the thoroughness and detail of the findings and the conclusion that was inevitable once the facts, figures and scientific analyses were laid out. It is hard to provide any better comments than those that are in the Executive Summary of the determination, and I applaud the Agency's clear thinking and well thought out analysis. I absolutely agree with the Agency's conclusion as stated in their determination, and am glad that this Proposed Decision goes further to propose restriction of "any future plan to mine the Pebble deposit that would either individually or collectively result in adverse effects similar or great in nature and magnitude to those described".

EPA Response

Section 5 of the FD was revised in response to comments to provide additional clarification, including language cited by the commenter regarding "individually or collectively." See EPA's responses to comments 5.A.1, 5.B.1, 5.B.8, and 5.B.15.

5.B.3 National Association of Wetland Managers (NAWM) (Doc. #0606, p. 4)

The proposed “restricted” defined area includes “any future plan to mine the Pebble deposit that would either individually or collectively result in adverse effects similar or greater in nature and magnitude to those described...in the 2022 Proposed Determination.” [Ibid. p. ES-13] The restriction includes four findings of unacceptability, each of which relates to anadromous fish habitat, and where any project plan triggering any one of these findings would be subject to the restriction. NAWM supports this restriction as proposed because it provides future protection of critical anadromous fish habitats.

EPA Response

Section 5 of the FD was revised since the PD in response to comments to provide additional clarification. See EPA’s responses to comments 5.A.1, 5.B.1, 5.B.8, and 5.B.15.

5.B.4 Environmental Protection Network (EPN) (Doc. #0857, p. 6)

EPN has fully reviewed the proposed restrictions and supports the Region 10 efforts to protect this valuable resource. We agree that the use of restrictions of this type, when fully supported by the facts, are consistent with Section 404(c).

EPA Response

Section 5 of the FD was revised since the PD in response to comments to provide additional clarification. See EPA’s responses to comments 5.A.1, 5.B.1, 5.B.8, and 5.B.15.

5.B.5 National Wildlife Federation (Doc. #2664-2, Public Hearing Transcript, p. 4)

I’d like to thank EPA staff for all their work in developing this important proposed determination that would protect Bristol Bay from the 2020 mine plan. The Federation urges EPA to quickly finalize this determination with additional restrictions that would also permanently protect Bristol Bay’s vital headwaters from any other large scale mine. The PD and its vast record unquestionably support the proposed restrictions. They also clearly support more stringent safeguards to protect Bristol Bay, including at a minimum the restrictions proposed in 2014. Indeed, even the impacts highlighted in the PD for informational purposes clearly justified the need for more stringent restrictions. These include significant impacts to non anadromous fish species and other wildlife, the economic reality, which guarantees that approval of a smaller mine would lead to aggressive calls for expansion, the potential for a catastrophic tailing dam failure, and the very certain risk of toxic leaks and spills even with ongoing maintenance.

EPA Response

See EPA’s responses to comments 1.B.1, 4.J.6, and 7.0.1. Economic-related issues are discussed in the document entitled *Consideration of Potential Costs Regarding the Clean*

Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska (EPA 2023b) (referenced in Section 4.4 of the FD).

5.B.6 National Wildlife Federation (Doc. #0129, Public Meeting Statement, p. 1)

The Proposed Determination and its vast record unquestionably support the proposed restrictions. They also clearly support more stringent safeguards to protect Bristol Bay— including at a minimum the restrictions proposed in 2014.

EPA Response

See EPA’s responses to comments 1.B.1, and 7.0.1.

5.B.7 Trustees for Alaska et al. (Doc. #0831, p. 19-25)

Comments regarding whether the discharge of dredged or fill material associated with mining the Pebble deposit should be prohibited, prohibited/restricted as proposed, prohibited/restricted in another manner, or not prohibited/restricted at all. In particular, EPA Region 10 is seeking comment on whether environmental effects associated with the discharge of dredged or fill material from mining the Pebble deposit in amounts other than those proposed in the 2020 Mine Plan (1.3 billion tons over 20 years) could provide a basis for alternative or additional restrictions.

The revised PD’s proposal to prohibit discharges associated with the 2020 Mine Plan and restrict any mining of the Pebble deposit with similar impacts as the 2020 Mine Plan is firmly rooted in the science—science that demonstrates that even mines much smaller than the 2020 Mine Plan would also have unacceptable adverse effects. Accordingly, EPA should finalize its proposed prohibition of the 2020 Mine Plan and its restriction of discharges associated with future mine plans that would have similar or greater ecological impacts as those associated with the 2020 Mine Plan. However, EPA should adopt a restriction that is not limited to a narrow definition of the “Pebble deposit” as proposed in the revised PD. This limitation is not justified by current information about the deposit and is not relevant to the nature or magnitude of impacts. Maintaining this limitation may fail to restrict future mines that would have the same or greater unacceptable adverse effects within the Defined Area for Restriction.

A. The revised PD’s ecologically-based restrictions are supported by sound science and would appropriately preclude even a mine much smaller than that set forth in the 2020 Mine Plan.

The revised PD’s restriction would limit the “discharge of dredged or fill material for the construction and routine operation of any future plan to mine the Pebble deposit that would either individually or collectively result in adverse effects similar or greater in nature and magnitude to those described in Sections 4.2.1 through 4.2.4.”[Revised PD at 5-2 (emphasis added).] Each of these four types of impacts “could, independently, result in unacceptable adverse effects on anadromous fishery areas” and, accordingly, any proposal that runs afoul of “any one of these four unacceptability findings would be subject to restriction.”[Id.]

As an initial matter, the “collective” piece of the restriction is important to maintain, given PLP’s repeated behavior of seeking permit authorizations initially for a much smaller project than what it ultimately intends to develop.[See supra Section 2.] It will be important for EPA to evaluate future mine proposals critically, and to apply the restriction when it is reasonable to conclude that a mine proposal that appears significantly less impactful than the 2020 Mine Plan is actually a stalking horse for a much bigger, more impactful mine.

The revised PD’s restrictions are appropriately based on ecological effects rather than the miles of streams or acres of wetland destroyed, although those quantitative metrics are highly relevant. For example, if the construction and/or routine operation of a mine would erode the “habitat complexity and biocomplexity within the SFK, NFK, and UTC watersheds,” it would have a “similar effect” and would be subject to the restriction, regardless of whether it would destroy 3 miles of anadromous streams or 8.5 miles.[Id. at 4-18.] EPA has already made this effects determination for the levels of impact posed by the 2020 Mine Plan, such that any other proposed mine plan that would destroy 8.5 miles of anadromous streams, 91.2 miles of streams that support anadromous streams, or 2,113 acres of wetland, or alter flow in 29 miles of anadromous streams by 20% or more would be subject to this restriction.

When making future effects determinations, EPA should look to the Bristol Bay Watershed Assessment (BBWA), in addition to relevant published scientific articles.[Environmental Protection Agency, An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay Alaska, EPA 910-R-14-001ES (2014) (BBWA).] EPA designed the BBWA as a rigorous ecological risk assessment to scientifically document “the significance of Bristol Bay’s ecological resources and evaluate the potential impacts of large- scale mining on th[ose] resources.”[BBWA at ES-1.] This extensive and rigorous review still provides the best analysis of the ecological values of Bristol Bay and the threat of large-scale mining.[See, e.g., David M. Chambers, Ph.D., Significant Omissions in the Pebble Project EIS Final Environmental Impact Statement at 18 (Aug. 19, 2020) (Ex. 2) (“[T]here was no significant new fisheries data taken during or after the time the Bristol Bay Watershed Assessment was produced. Both the Watershed Assessment and the EIS use data provided in the PLP Environmental Baseline Document. The Watershed Assessment also uses a broad base of peer reviewed scientific research on both salmon and the potential impacts from mining that the EIS either ignores or finds irrelevant.”).]

The BBWA examined impacts from a range of potential mining scenarios within the watershed.[BBWA at ES-5 (“This is not an in-depth assessment of a specific mine, but rather an examination of potential impacts of reasonably foreseeable mining activities in the Bristol Bay region, given the nature of the watershed’s mineral deposits and the requirements for successful mine development.”).] These scenarios “reflect[ed] the general characteristics of mineral deposits in the watershed, modern conventional mining technologies and practices, the scale of mining activity required for economic development of the resources, and the infrastructure needed to support large-scale mining.”[BBWA at ES-10–11.] EPA based each scenario on the amount of ore processed: Pebble 0.25 (approximately .25 billion tons over 25 years), Pebble 2.0 (approximately 2.0 billion tons over 25 years), and Pebble 6.5

(approximately 6.5 billion tons over 78 years).[BBWA at ES-11.] In comparison, the 2020 Mine Plan would process 1.3 billion tons over 20 years.

The BBWA assessed how “mining-related stressors... would affect ecological resources in the watershed.”[BBWA at ES-10.] EPA relied on this analysis when issuing its 2014 Proposed Determination (2014 PD).[Environmental Protection Agency, 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, 79 Fed. Reg. 42314 (July 21, 2014) (2014 PD).] Despite—like the revised PD—only considering “the footprint impacts associated with the mine pit, [tailings storage facilities], and waste rock piles”[2014 PD at 2-17, 4-62. While EPA conservatively limited the basis of its decision in the 2014 PD to the mine footprint, the BBWA recognized that the transportation corridor would also have significant impacts to fish habitats and populations. BBWA at ES-16-19 & Chapter 10; see also Chris Frissell, Ph.D., and Sarah O’Neal, Direct and cumulative impacts of road system fugitive dust in the Pebble Project draft EIS at 6 (May 9, 2019) (Ex. 27) (“Fugitive dust originating from disturbed soils, waste piles, and unvegetated surfaces at mine sites, construction sites, quarries, and roads is a significant vector for transport of pollutants into the surrounding environment.”); Sarah O’Neal, Pebble Mine Final Environmental Impact Statement (FEIS): Anticipated adverse impacts from the transportation corridor at 2 (Aug. 20, 2020) (Ex. 11) (“roads have a legacy of long lasting and far reaching impacts on aquatic ecosystems worldwide.”).], the 2014 PD concluded that “mining of the Pebble deposit at any of [the three mining scenarios identified,] even the smallest, could result in significant and unacceptable adverse effects on ecologically important streams, wetlands, lakes, and ponds and the fishery areas they support.”[2014 PD at 5-1.] Accordingly, EPA proposed restricting “the discharge of dredged or fill material related to mining the Pebble deposit into waters of the United States within the potential disposal site that would, individually or collectively, result in any of the following:”

1. Loss of streams

- a. The loss of 5 or more linear miles of streams with documented anadromous fish occurrence; or
- b. The loss of 19 or more linear miles of streams where anadromous fish are not currently documented, but that are tributaries of streams with documented anadromous fish occurrence; or

2. Loss of wetlands, lakes, and ponds. The loss of 1,100 or more acres of wetlands, lakes, and ponds contiguous with either streams with documented anadromous fish occurrence or tributaries of those streams; or

3. Streamflow alterations. Streamflow alterations greater than 20% of daily flow in 9 or more linear miles of streams with documented anadromous fish occurrence.[2014 PD at 5-1.]

EPA based these proposed restrictions on Pebble 0.25, the smallest mine scenario considered.[2014 PD at 5-1.] Nothing in the record currently before EPA undermines this conclusion that even this smallest scenario could have unacceptable adverse impacts.

According to EPA, the Pebble 0.25 mine scenario, resulting in the elimination or dewatering of at least 4.7 miles of salmon-bearing streams, would be “unprecedented in the context of the Clean Water Act Section 404 regulatory program in Alaska.”[2014 PD at 4-6, 4-61 (“[B]ased 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 [the Corps] authorized losses to documented anadromous waters of the nature and magnitude associated with the Pebble 0.25 stage mine.”); PD at 4-19 (“By itself, the elimination, dewatering, or fragmenting of approximately 19 miles (30 km) of tributaries of anadromous fish streams as the result of a CWA Section 404 permit would be an unprecedented impact in Alaska . . . The loss of these subsidies could degrade downstream salmon habitat, local salmon populations, and fisheries well beyond the Pebble 0.25 stage mine footprint, compromising the overall diversity and productivity of the [South Fork Koktuli], [North Fork Koktuli], and [Upper Talarik Creek] watershed (section 4.2.1)”)]. The Pebble 0.25 mine would also have long-term impacts on salmon, and “reduce the overall capacity and productivity” of Chinook and Coho salmon in the South and North Fork Koktuli and Upper Talarik Creek watersheds.[2014 PD at 4-7.] EPA concluded that “the discharge of dredged or fill material associated with the Pebble 0.25 stage mine could have unacceptable adverse effects on fishery areas in the [South Fork Koktuli], [North Fork Koktuli], and [Upper Talarik Creek] watersheds, as well as downstream fishery areas.”[2014 PD at 4–13.] Further, EPA found that while “it cannot be certain of the full extent of the implications of these losses, it is apparent that impacts of this magnitude could compromise the sustainability of fish populations within the [South Fork Koktuli], [North Fork Koktuli], and [Upper Talarik Creek] watersheds, as well as downstream fishery areas.”[2014 PD at 4–13 (emphasis added).] Due to the outright loss of nearly 5 miles of habitat; the importance of that habitat to juvenile salmon; the degradation of downstream rearing and spawning habitat; loss of genetic diversity, which is key to the Bristol Bay salmon stocks; and the strong connection between an intact headwaters and the thriving, healthy salmon stocks of Bristol Bay, EPA found such impacts unacceptable.[2014 PD at 4–13.]

EPA also found that the 0.25 mine scenario would result in the elimination, dewatering, or fragmenting of approximately 19 miles of tributaries to anadromous fish streams.[2014 PD at 4–19.] This too would be “an unprecedented impact in Alaska” and while the loss of tributaries may be nearly 3% of mapped streams in the three watersheds, the “effects of their loss would reverberate to downstream habitats and affect species such as coho, Chinook, sockeye, and chum salmon.”[2014 PD at 4–19.] EPA went on to note that the “magnification of impacts would arise from the vital role headwater streams play in maintaining diverse, abundant fish populations, via the provision of surface and groundwater inputs and food sources critical to the survival, growth, and spawning success of downstream fishes.”[2014 PD at 4–19.] EPA concluded that this loss “could degrade downstream salmon habitat, local salmon populations, and fisheries well beyond the Pebble 0.25 stage mine footprint, compromising the overall diversity and productivity of the [South Fork Koktuli, North Fork Koktuli, and Upper Talarik Creek] watersheds.”[2014 PD at 4–19.]

In addition to the devastating impacts to salmon bearing streams and their tributary headwaters, the 0.25 mine scenario would eliminate, dewater or fragment more than 1,200 acres of wetlands, lakes, and ponds, of which approximately 1,100 acres are contiguous with anadromous streams or their

tributaries.[2014 PD at 4–20.] The loss of these wetlands, lakes, and ponds would be “a very large and unprecedented impact under the Clean Water Act Section 404 regulatory program in Alaska.”[2014 PD at 4–21.] In addition to the direct loss of these waters, the 0.25 mine would consume large volumes of water drawn from surface and groundwater sources.[2014 PD at 4–22.] The BBWA calculated that the 0.25 mine would reduce flow in more than 45 miles of streams.[2014 PD at 4–23.] The adverse impacts from streamflow alteration “could jeopardize the long-term sustainability of these fisheries.”[2014 PD at 4–27.] EPA found that drawdown would alter streamflows by more than 20% in approximately 9 miles of stream and that such a chance could pose unacceptable adverse impacts to the salmon fisheries of both the South Fork Koktuli and North Fork Koktuli.[2014 PD at 4–28.]

Unlike the revised PD’s analysis, the BBWA’s rigorous analysis was not reliant on project-specific details.[BBWA at ES-5.] EPA designed the BBWA to support agency review of any mine proposal.[BBWA at ES-1–ES-2 (“Should specific mine projects reach the permitting stage, the [BBWA] will enable state and federal permitting authorities to make informed decisions to grant, deny, or condition permits and/or conduct additional research or assessment as a basis for such decisions.”).] Such analysis was possible in absence of a permit application “given the nature of the watershed’s mineral deposits and the requirements for successful mine development.”[BBWA at ES-4.] And, in fact, the EPA-reviewed Pebble 0.25 mine scenario included the same locations for the mine pit, waste rock, and tailings facility as PLP included in its permit application.[See Tom Collier, CEO, PLP Presentation to the Alaska Resource Development Council, Oct. 5, 2017, at 33 (EPA 0.25 Mine Scenario) and 35 (PLP Current Plan).] EPA noted when withdrawing the 2014 PD that many aspects of the scenarios evaluated in the BBWA were similar to PLP’s 20-year mining proposal, but that PLP’s 20-year mining proposal:

- * moved most mine component facilities out of the Upper Talarik Creek watershed;
- * eliminated cyanide leaching as part of the ore processing;
- * included placement of a liner under the pyritic tailings and potentially acid generating waste rock;
- * reduced anticipated waste rock;
- * separated pyritic tailings from bulk tailings; and
- * relocated treated water discharge locations.[84 Fed. Reg. at 45754.]

Notably, none of these differences would keep the proposed mine under the threshold restrictions set forth in the 2014 PD. Rather, PLP’s proposed 20-year mine would be far more destructive than the smallest scenario considered in the BBWA, with far more impacts than those found unacceptable by the 2014 PD.[See David M. Albert, 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 at 8, table 1 (June 21, 2019) (Ex. 48) (comparing the 20-year and 78-year mines analyzed in the DEIS to the 2014 PD thresholds).] The 20-year mine analyzed in the Final Environmental Impact Statement (FEIS) would result in the direct and permanent loss of 105.4 miles of streams and 2,231 acres of wetlands.[U.S. Army Corps of Engineers,

Pebble Project EIS; Environmental Impact Statement at 4.22-111, Table 4.22-40 (2020) (hereinafter “FEIS”).] The indirect impacts would lead to the loss of another 79.5 miles of streams and 1,609 acres of wetlands.[FEIS at 4.22-111, Table 4.22-40.] The temporary losses include 773 acres of wetlands and 6.2 miles of streams.[FEIS at 4.22-111, Table 4.22-40.] The total impact from the 20-year mine plan amounts to a direct, indirect, and temporary loss of 4,613 acres of wetlands and 191.1 miles of streams.[FEIS at 4.22-111, Table 4.22-40.] And these numbers are underestimates.[See Thomas G. Yocom, The Alaska District of the Corps of Engineers’ Revised Preliminary Jurisdictional Determinations for POA-2017-271 Inappropriately Reduces Estimates of the Direct Impacts of the Pebble Mine Project to Wetland and Aquatic Areas by Over 1200 Acres (Aug. 19, 2020) (Ex. 20).] In short, the project-specific details from the 2020 Mine Plan do not change the fact that the impacts of mining this low-grade deposit would be vast, and unacceptable.

The primary shift EPA has made in the revised PD from the 2014 PD is to include an outright prohibition of the 2020 Mine Plan and to otherwise restrict mining of the Pebble Deposit to prevent ecological impacts similar to those posed by the 2020 Mine Plan.

[Table 1. Comparison Table of 2014 Proposed Determination Limitations and 2020 Mine Plan's Anticipated Impact included in submission here]

This does not, however, mean that the impacts commensurate with the 2014 PD’s limitations would be acceptable; to the contrary, the science clearly demonstrates that impacts to the aquatic ecosystem at the levels that the 2014 PD contemplated are unacceptable and any mining at that scale in the Bristol Bay headwaters could not be permitted under the Section 404(b)(1) Guidelines.[See Revised PD at A-1 (“EPA’s assessment of that mine scenario [of mining approximately 0.25 billion tons of ore at the Pebble deposit over twenty years] provided a solid scientific and technical foundation for the 2014 Proposed Determination and the BBA continues to support EPA’s findings.”) (emphasis added).] Here, EPA’s revised PD is based off an analysis of the 2020 Mine Plan, which comes to the unremarkable conclusion that the destruction of far more stream miles and wetland acres than those evaluated in the BBWA and 2014 PD would also result in unacceptable adverse effects.

EPA Response

Section 5 of the FD was revised in response to comments to provide additional clarification. See EPA’s responses to comments 5.A.1, 5.B.8, 5.B.15, and 5.C.60.

EPA considered relevant portions of the BBA and the 2014 PD in the development of this FD. See EPA’s responses to comments 4.B.27, 4.B.50, and 7.0.1.

5.B.8 National Wildlife Federation (Doc. #2067, p. 10-11, 13)

{D. Both the Recommended and Final Determinations should adopt additional and modified restrictions and requirements that will protect the pristine Bristol Bay watershed from any large-scale mine.

The National Wildlife Federation strongly supports the revised PD’s clear prohibition of the 2020 Mine Plan and the restrictions that would prohibit mines that would cause ecological impacts similar to those

posed by the 2020 Mine Plan. We also support the revised PD's delineation of the geographic scope of Defined Area for Prohibition and the Defined Area for Restriction, both of which are highly reasonable. However, as highlighted throughout these comments, information in the revised PD and in the vast record supporting the revised PD clearly justify: the adoption of more stringent restrictions that will protect the pristine Bristol Bay watershed from any large-scale mine; and additional requirements to ensure that all direct, indirect, and cumulative impacts will be accounted for in determining whether any future mine proposal is prohibited by the Final Determination. To help achieve these goals, the National Wildlife Federation recommends that EPA include at least the four changes outlined below in both the Recommended and Final Determinations.}

(...)

3. Clarify that the restrictions applicable to the Defined Area for Restriction apply to both new mine proposals and mine expansion proposals.

Importantly, the revised PD makes clear that “each of the impacts described in Sections 4.2.1 through 4.2.4 could, independently, result in unacceptable adverse effects on anadromous fishery areas” and as a result “a proposal that triggers any one of these four unacceptability findings would be subject to the restriction.” [Revised PD at 5-2.] As a result, the revised PD properly proposes to:

restrict the use of waters of the United States within the Defined Area for Restriction, as identified in Section 5.2.1, for specification as disposal sites for the discharge of dredged or fill material for the construction and routine operation of any future plan to mine the Pebble deposit that would either individually or collectively result in adverse effects similar or greater in nature and magnitude to those described in Sections 4.2.1 through 4.2.4. Because each of the impacts described in Sections 4.2.1 through 4.2.4 could, independently, result in unacceptable adverse effects on anadromous fishery areas, a proposal that triggers any one of these four unacceptability findings would be subject to the restriction. [Revised PD at 5-2.]

It is critical to retain these clarifications regarding the individual and/or collective nature of the restrictions and the assessments needed to determine whether a future mine proposal would violate the restrictions. These clarifications will help ensure that the impacts of any future mine proposals are properly evaluated to determine whether or not the proposal may proceed.

In addition, the National Wildlife Federation urges that the Recommended and Final Determinations include an additional clarification to ensure that a mine that appears to cause significantly fewer impacts than the 2020 Mine Plan will not be used as a gateway for expanding the mine into one that is much larger and/or into one whose direct, indirect, and cumulative impacts, in combination with the direct, indirect, and cumulative impacts of the original mine, would trigger any one of the four unacceptability findings. [This is not a speculative concern. To the contrary, this has been a very real issue with proposals submitted by Pebble Mine Limited. See, e.g., Trustees for Alaska Comments at 2, 26.] To this end, the Federation recommends that both the Recommended and Final Determinations include the following (or similar) language:

The restrictions on the use of waters of the United States within the Defined Area for Restriction apply to:

1. Any proposal for a new mine in the Defined Area for Restriction if the direct, indirect, and cumulative impacts of that proposal would either individually or collectively result in adverse effects similar or greater in nature and magnitude to any one of the four unacceptability findings as described in Sections 4.2.1 through 4.2.4; and
2. Any proposal to enlarge or expand a mine in the Defined Area for Restriction if the direct, indirect, and cumulative impacts of the original mine combined with the direct, indirect, and cumulative impacts of the mine enlargement or expansion would either individually or collectively result in adverse effects similar or greater in nature and magnitude to any one of the four unacceptability findings as described in Sections 4.2.1 through 4.2.4.

EPA Response

Section 5 of the FD provides additional clarification in response to comments regarding how the restriction would apply to new proposals to develop the Pebble deposit, as well as how it would apply to expansions of efforts to develop the Pebble deposit. Section 5 of the FD was also revised to provide additional clarification regarding what constitutes adverse effects “similar or greater in nature and magnitude.” Clarifications include the addition of a new subsection that discusses applicability of the restriction (Section 5.2.2) and a new text box that describes data requirements associated with applicability assessments (Box 5-1). See also EPA’s response to comment 5.B.15 regarding why the phrase “individually and collectively” has been revised in the restriction to “individually and cumulatively.” Section 5.2 of the FD was revised to clarify that the restriction would not apply if discharges are found to be subject to the prohibition. Section 5 of the FD has also been revised to clarify that “[p]roposals to discharge dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to this determination remain subject to all statutory and regulatory authorities and requirements under CWA Section 404.”

See EPA’s response to comment 4.B.27 regarding why the FD remains focused on discharges associated with developing the Pebble deposit. See EPA’s response to comment 5.C.60 regarding the definition of the Pebble deposit for purposes of this FD.

5.B.9 United Tribes of Bristol Bay (UTBB) (Doc. #0823, p. 7-8)

B. Restrictions

UTBB appreciates that EPA is seeking to remove the threat of future mine plans to develop the Pebble deposit through use of a restriction on any future plan that would result in adverse effects “similar or greater in nature and magnitude” to the 2020 Mine Plan. However, the restriction as drafted, with emphasis on numerical standards for the restriction and use of “similar or greater,” is vulnerable to

future proposals from PLP that would be unacceptable based on sound science and the administrative record. This threat is very real as the company behind the proposed Pebble Mine has developed alternative mine plans throughout the years to work around prior section 404(c) actions proposed by the EPA.

As such, UTBB suggests two recommendations that will work in tandem to address this problem. First, EPA should provide more detail as to what constitutes adverse effects “similar or greater in nature and magnitude” as the 2020 Mine Plan with a focus particular on ecological effects supported by sound science that would restrict a mine similar to that analyzed in the 2014 Proposed Determination and the 2014 Bristol Bay Watershed Assessment. Providing this certainty will ensure that the Region, federal and state regulators, and industry are all clear on what the baseline is prior to any future permitting process of mining in the area, rather than spending numerous financial and human resources in a future environmental review process to determine whether the restrictions will be triggered.

Second, EPA should redefine and specify that the “Pebble deposit” is broader than “an area of at least 1.9 by 2.8 miles” or delineated as a 2.5 mile- by 3.5-mile box and instead base the definition of the Pebble deposit on the best available information and science of ecological effects from mining pyritic ore. This could include utilizing PLP’s definition of the Pebble deposit and orebody from the company’s 2021 Preliminary Economic Assessment report,[See, Pebble Project Preliminary Economic Assessment NI 43-101 Technical Report, Prepared for Northern Dynasty Minerals Ltd., Prepared by Ausenco Engineering Canada (effective date: Sept. 9, 2021), Figure 10-2, at p. 109, on file with the Securities and Exchange Commission at:

https://www.sec.gov/Archives/edgar/data/1164771/000165495421011600/ndm_ex991.htm.]

including the full 11 billion tons of measured, indicated, and inferred ore at the Pebble deposit.[See, e.g., Northern Dynasty Minerals—Pebble Project Reserves and Resources, <https://northerndynastyminerals.com/pebble-project/reserves-resources/>.] EPA could also remove reference to a specific border for the Pebble deposit and instead focus the restriction on the character of the orebody. As acknowledged by EPA, the full extent of the Pebble deposit is an estimate based on PLP’s exploration efforts and should not be used as the basis of the restriction. Because the extent of the deposit may expand over time, the agency could focus on the ore type as it is the ecological effect of mining this ore type that EPA uses to support its restriction.

EPA Response

See EPA’s responses to comments 5.B.1 and 5.B.8 regarding clarifications to what constitutes adverse effects “similar or greater in nature and magnitude.” See EPA’s response to comment 5.C.60 regarding the definition of the Pebble deposit for purposes of this FD.

5.B.10 Theodore Roosevelt Conservation Partnership (TRCP) (Doc. #1614, p. 2)

The TRCP respectfully urges the EPA to finalize Clean Water Act 404(c) protections for Bristol Bay as quickly as possible, while also encouraging the agency to strengthen the proposed restrictions on mining waste. Specifically, we ask the EPA to:

- * Make clear that restrictions apply to all future mine plans, not just the 2020 Mine Plan;
- * Clarify that the restrictions apply to discharges of material taken from anywhere within the entire Pebble deposit;
- * Adopt stronger restrictions on future mining at the Pebble deposit;
- * Protect waters beyond the North and South Forks of the Koktuli River and Upper Talarik Creek, such as the Stuyahok and Mulchatna rivers, among others.

EPA Response

Section 5 of the FD, which describes the prohibition and restriction, was revised in response to comments on the PD to provide additional clarification. See EPA's responses to comments 1.B.1, 5.A.1, 5.B.8, and 5.B.15 regarding changes to the prohibition and restriction. See also EPA's response to comment 5.A.10 regarding clarifications and changes to the FD to address applicability of this CWA Section 404(c) action to future proposals.

Dredged or fill material need not originate within the boundary of the Pebble deposit as defined in Section 5 of the FD to be associated with mining the Pebble deposit and, thus, potentially subject to the prohibition or restriction. See EPA's response to comment 5.C.60 regarding the definition of the Pebble deposit for purposes of this FD.

Section 4 of the FD provides the basis for EPA's determination that discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

See also EPA's response to comment 4.B.27 regarding why the FD remains focused on discharges associated with developing the Pebble deposit.

See EPA's response to comment 5.B.19 regarding the size of the areas protected.

5.B.11 Natural Resources Defense Council (Doc. #2664-9, p. 9)

EPA should issue a final determination that not only prohibits the Pebble Mine, but also restricts all future mining projects like the Pebble Mine in the headwaters of Bristol Bay. NRDC stands with the people of Bristol Bay urging EPA to finalize strong protections that are more protective than the current proposal. We urge EPA to not only stop the Pebble Mine as proposed in 2020, but also to safeguard the headwaters of Bristol Bay from future mine plans to new mining companies. EPA now has a once in a

lifetime opportunity to protect an irreplaceable ecosystem from the Pebble Mine and any large scale mine like it. On behalf of NRDC and its members, I urge EPA to issue a final determination that provides strong protections for Bristol Bay by the end of this year.

EPA Response

See EPA's responses to comments 1.B.1, 1.B.2, and 5.A.1.

See EPA's response to comment 5.A.10 regarding clarifications and changes to the FD to address applicability of this CWA Section 404(c) action to future proposals.

See also EPA's response to comment 4.B.27 regarding why the FD remains focused on discharges associated with developing the Pebble deposit.

5.B.12 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 4)

The EPA Should Make Clear that Restrictions Apply to all Future Mine Plans and are not Limited to the 2020 Mine Plan.

As has become evident from the Yazoo Pumps project, in which there is disagreement about whether an updated and revised project proposal must comply with a prior final determination, the EPA should make explicit that a Bristol Bay final determination applies to all future discharges. Any future discharge in the Bristol Bay watershed, not just those associated with the 2020 Mine Plan, must occur, if at all, in compliance with the prohibitions and restrictions provided by a final determination.

While the 2020 Mine Plan is illustrative of the type of project that may be proposed in Bristol Bay's headwaters that result in discharges of dredge and fill material, it is not the only current or future potential project proposal. The EPA should explicitly not limit a final determination on any individual mine plan. The PLP or some other project proponent may seek permits for the discharge of dredge and fill material under a revised or completely new mine plan that could have the same or substantially similar unacceptable adverse impacts. For these reasons, the EPA must be clear that it intends for its final determination to apply to any proposed discharge and not just discharges that would result from the 2020 Mine Plan.

EPA Response

See EPA's responses to comments 1.B.1, 1.B.2, 5.A.1, and 5.B.10.

See EPA's response to comment 5.A.10 regarding clarifications and changes to the FD to address applicability of this CWA Section 404(c) action to future proposals.

See also EPA's response to comment 4.B.27 regarding why the FD remains focused on discharges associated with developing the Pebble deposit.

5.B.13 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 9)

7. The 2022 PD omits any explanation or discussion of the means of restriction.

The 2022 PD does not address how EPA would restrict any future mine plan that would cause harms similar or greater in nature and magnitude to those which would be caused by the 2020 Mine Plan. EPA needs to identify restrictions that could be imposed before a permit is granted and after it is granted (when a permittee exceeds permitted levels of harm). Doing so serves, and facilitates comments by, industry and the public at large.

EPA Response

See EPA's response to comment 5.B.8 regarding revisions to Section 5 in the FD to clarify how EPA will determine applicability of the restriction.

5.B.14 Earthjustice, Earthworks, Friends of the Earth U.S., and the Center for Biological Diversity (Doc. #0835, p. 5-10)

III. The proposed restriction should be broadened and clarified.

It is appropriate that the Revised PD includes a restriction to address discharges from potential future mine plans in the area. Such a restriction is critical to imbue any final determination under section 404(c) with lasting value to prevent proposals that could be just as disastrous for Bristol Bay. PLP's mine proposal alone has gone through numerous revisions, and it is evident from the company's statements that the 2020 Mine Plan was never intended as a discrete, isolated project. [DeMarban, A., Leaked tapes and loose talk tarnished Pebble's Reputation. Can the proposed mine go on?, ADN (Oct. 6, 2020), <https://www.adn.com/alaska-news/2020/10/06/leaked-tapes-and-loose-talk-tarnished-pebbles-reputation-can-the-proposed-mine-go-on/>.] If EPA only narrowly prohibits discharges associated with the 2020 Mine Plan, it is highly likely a new proposal will emerge with parameters that vary enough to evade application of EPA's section 404(c) determination, but not enough to protect Bristol Bay from unacceptable adverse effects from mining on anadromous fishery areas.

For the same reason, EPA must adopt a restriction that is clear and broad enough to preclude unacceptable adverse effects from future large-scale porphyry copper mine plans in the area. The agency enjoys significant discretion to craft such a restriction, [Trout Unlimited v. Pirzadeh, 1 F.4th 738, 759 (9th Cir. 2021) (noting that the standard is flexible and draws on the agency's expertise and judgment).] and the science supports the need for robust protection. We offer these comments regarding how the restriction in the Revised PD should be broadened and clarified to ensure against unacceptable adverse effects from future mining proposals within the Defined Area for Restriction. They are pertinent to EPA's Solicitation of Comments, Questions 9 and 10. [Revised PD at 7-1 to 7-2.]

A. EPA should make clearer that the numeric impact estimates discussed in the Revised PD are not a minimum below which the restriction does not apply.

EPA proposes to restrict discharges associated with future plans to mine the Pebble deposit that would result in “adverse effects similar or greater in nature and magnitude to those described in Sections 4.2.1 through 4.2.4 [of the Revised PD].” [Id. at 5-2 (emphasis added).] In turn, sections 4.2.1 through 4.2.4 describe impacts in two ways: One way is to use as a starting point numeric estimates of habitat impacts along one or two simplistic dimensions as described in the Corps’ final environmental impact statement (FEIS) and record of decision (ROD) for PLP’s section 404 permit application, such as miles and acres of waters that would be lost or miles of streams whose flow would be altered by at least 20 percent. [E.g., id. at 4-4 (“Discharges of dredged or fill material associated with the 2020 Mine Plan would result in the permanent loss of approximately 8.5 miles (13.7 km) of streams with documented anadromous fish occurrence....”).] The other way is to discuss the meaningful ecological effects on aquatic resources that would flow from those simplified habitat impacts. [E.g., id. at 4-12 (“Where they provide salmon spawning areas, the anadromous fish streams that would be permanently lost are also a source of marine-derived nutrients for downstream waters (Section 3.3.4). Thus, elimination of these spawning areas would reduce the downstream transport of these marine-derived energy subsidies.”).]

It is the context for and meaningful ecological effects of the discharges, not the simplistic numeric estimates of the discharges’ habitat impacts, that form the basis for EPA’s finding under section 404(c). [See id. at ES-10 to 11.] Accordingly, the Revised PD does not purport to restrict discharges only where future mine plans would meet some numeric threshold of habitat impacts such as miles of anadromous stream loss. [Id. at 5-2.] Any future mine plan that would have meaningful ecological effects similar to those of the 2020 Mine Plan would have unacceptable adverse effects and would be subject to the proposed restriction, regardless of how quantifications of their habitat impacts compare. [We echo the comments on the Revised PD submitted by Trustees for Alaska in this regard.] However, the Recommended Determination should be clearer than the Revised PD in stating that the numeric estimates of impacts of the 2020 Mine Plan that the Revised PD discusses do not represent a floor below which EPA’s 404(c) determination does not apply. The Recommended Determination should so state explicitly.

B. EPA should clarify that it is using the Corps’ numeric estimates of impacts but does not endorse those estimates.

The Revised PD correctly points out that the Corps’ FEIS and ROD underestimates the impacts of the 2020 Mine Plan, particularly in terms of streamflow analysis. [Revised PD, App. B at B-1, B-8 to B-10; id. at 4-37 ns. 60-61.] EPA nonetheless uses the ROD’s numeric estimates of habitat impacts as the best available starting point to evaluate meaningful ecological impacts of the 2020 Mine Plan, while acknowledging that its actual impacts would be greater. [See, e.g., id. at 4-29 to 30, 4-32.] EPA finds that even the ROD’s underestimated habitat impacts would result in unacceptable adverse effects, based on the meaningful ecological impacts that would flow from them. [Id. at B-10.]

There is nothing inconsistent or objectionable about EPA’s approach. However, in describing the proposed restriction, EPA should consistently clarify that the meaningful ecological impacts the agency finds unacceptable would flow from even the Corps’ underestimates of habitat impacts—rather than

only from the greater habitat impacts EPA expects would in fact result from the 2020 Mine Plan. [See, e.g., *id.* at ES-11 (describing EPA Region 10's belief that unacceptable adverse effects could result if the effects of discharges from future mine plans are "similar or greater in nature and magnitude to the adverse effects of the 2020 Mine Plan" without specifying "as described in the FEIS and ROD"); *id.* at ES-17-18 (same, describing the restriction that is needed); *id.* at ES-16 (same, with respect to significant degradation).] This would help preclude any inappropriate future attempts to evade EPA's section 404(c) action by claiming that EPA based its determination on some greater, as-yet-unidentified extent of habitat impacts from the 2020 Mine Plan.

Conversely, EPA should consistently clarify that it does not endorse the Corps' underestimates of habitat impacts from the 2020 Mine Plan. The Revised PD does so in numerous places, but a global statement to that effect near the beginning of the Recommended Determination would be clearer and more definitive.

C. EPA should broaden the scope of restricted discharges.

EPA only proposes to prohibit discharges associated with mining the Pebble deposit, which the Revised PD defines as "an area of at least 1.9 by 2.8 miles and consist[ing] of two contiguous segments, Pebble West and Pebble East." [Id. at 2-1; see also *id.* at ES-14 (map).] However, the "full extent of the Pebble deposit is not yet defined." [Id. at 2-1.] EPA should broaden its definition of the Pebble deposit to encompass any further discoveries contiguous with the currently-identified deposit wherever 1) EPA has already notified the relevant claimholders of the Revised PD, or 2) the discoveries are not currently subject to mineral claims.

EPA should also consider broadening the restriction beyond the Pebble deposit. The text of section 404(c) is directed at the specification of disposal sites for dredged and fill material, rather than the source of that material. [See 33 U.S.C. § 1344(c).] Many other mineral deposits exist in the area. [The Watershed Assessment identified four other nearby deposits (Pebble South/PEB, Big Chunk South, Big Chunk North, and Groundhog) that could use the same tailings storage facility site as the 2020 Mine Plan. Watershed Assessment at 13-8, 13-10, 13-22, 13-23.] Discharges in the Defined Area for Restriction associated with any other large-scale porphyry mines would have the same adverse effects. In addition, such mines are often associated with water pollution from "acidic mine drainage, metals leaching, and/or accidental releases of toxic materials." [See Earthworks, U.S. Copper Porphyry Mines: Report at 4-5 (July 2012, revised Nov. 2012) (finding that 100 percent of studied copper porphyry mines experienced some kind of accidental release, while 92 percent failed to control contaminated mine seepage and 64 percent experienced tailings spills).] Accordingly, EPA's restriction should not be limited by the location of any specific mineral deposit, but instead should be defined by the size and nature of the discharges that would cause unacceptable effects (i.e., discharges from any large porphyry copper mine). Failing that, EPA's recommended determination should explicitly state it is the nature and extent of the discharges associated with the 2020 Mine Plan—not the character of the Pebble deposit itself—that support EPA's unacceptability finding.

D. EPA should clarify how the impacts of future mine plans will be assessed for compliance with the section 404(c) restriction.

Other potential loopholes in the Revised PD that future mine proposals may aim to exploit concern how EPA will apply its restriction. The 2020 Mine Plan is a prime example of how significant disagreement about a project's impacts can develop, even among federal regulatory agencies. [See, e.g., Revised PD, App. B at B-1.] To close any loopholes and provide as much certainty as possible to the regulated community, EPA should specify how it will evaluate future mine proposals for consistency with the 404(c) determination.

i. EPA should make clear it will consider all mine infrastructure and its impacts within the Defined Area for Restriction.

The findings in EPA's Revised PD are based only on the direct and secondary impacts of discharges at the mine site itself, without regard to the impacts of discharges from ancillary components. [Id. at ES-16.] There is nothing objectionable or inconsistent with that approach. It would be gilding the lily to address the impacts of ancillary mine components when the impacts of the mine site alone constitute unacceptable adverse effects. However, EPA should clarify that in reviewing future mine proposals for consistency with the section 404(c) restriction, the agency will consider all the direct and secondary impacts of a proposed mine plan that fall within the Defined Area for Restriction, including those caused by discharges from ancillary project components. This is consistent with EPA's reasonable approach of ensuring mining proposals do not collectively result in effects similar to or greater than the 2020 Mine Plan. Any ancillary mine facilities are part of a mine proposal's collective impacts.

ii. EPA should clarify how it will evaluate collective impacts.

EPA appropriately included in its restriction a prohibition on proposals which would "individually or collectively" result in similar or greater unacceptable adverse effects. [Id. at ES-13 (emphasis added).] Without this recognition of collective impacts, mine proponents could attempt to evade the section 404(c) determination by proposing mines in small increments, and the Bristol Bay watershed could suffer death by a thousand cuts. Considering collective impacts is also consistent with the CWA section 404(b)(1) Guidelines, which require EPA to consider cumulative effects on the aquatic ecosystem. [40 C.F.R. § 230.11(g).] To the extent possible, the recommended determination should clarify how EPA will evaluate whether future mine proposals are barred by its section 404(c) determination based on their collective impacts.

Specifically, EPA should state that it will independently consider whether any future mine proposal is, in fact, only an incremental step in a larger scheme that would collectively violate EPA's section 404(c) restriction. To this end, EPA should state it will consider any relevant and reliable information, including but not limited to information about the independent economic viability of the proposal; statements to potential investors or regulators; relevant industry norms; and whether other past or foreseeable future discharges in the Defined Area for Restriction benefit the proposal or benefit from it, even if they are proposed separately.

iii. EPA should clarify it will not make a consistency determination without independently evaluating a proposal's impacts.

Federal agencies and regulated industry may all disagree about the extent of a project's impacts. EPA should clarify that it will not determine that any future proposals are consistent with its section 404(c) restriction for Bristol Bay without independently evaluating the accuracy of any impact analyses. Where information about a proposal or its impacts is incomplete due to circumstances beyond EPA's control, EPA should specify that it will draw all reasonable inferences in favor of restricting a proposed discharge. [See id. § 230.12(a)(3)(iv).]

The Revised PD specifies various ways the Corps inappropriately minimized the impacts of the 2020 Mine Plan. [See generally Revised PD, App. B.] EPA should clarify that it will not find that any future proposal is consistent with the section 404(c) restrictions based on impact estimates derived by similar methods, or by methods that minimize impacts in other ways.

To the extent possible, EPA should clarify terminology and methods it will use in evaluating future proposals for consistency with the section 404(c) restriction, including but not limited to:

- * The definition of "wetlands" EPA will use;
- * Methods EPA may use or accept to identify anadromous fish streams and the streams and other waters that support them;
- * Methods EPA may use or accept to estimate miles of streams lost due to a discharge's secondary effects, in addition to miles of streams lost through direct displacement by discharges of dredged or fill material;
- * Methods EPA may use or accept to determine adverse impacts resulting from greater than 20 percent changes in average monthly streamflow.

EPA Response

The prohibition and restriction are discussed in Section 5 of the FD. Section 4 of the FD provides the basis for EPA's determination that discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. See EPA's response to comment 5.C.60 regarding the definition of the Pebble deposit for purposes of this FD and EPA's response to comment 4.B.27 regarding why the FD remains focused on discharges associated with developing the Pebble deposit.

Section 5 of the FD has been revised since the PD; see EPA's response to comment 5.A.1 regarding revisions to the prohibition to address future proposals to develop the Pebble deposit. See EPA's response to comment 5.B.8 regarding revisions to Section 5 of the FD to clarify how EPA will determine applicability of the restriction. See EPA's response to comment 5.B.15 regarding why the phrase "individually and collectively" has been revised in the restriction to "individually and cumulatively." See EPA's response to comment 5.A.10 regarding clarifications and changes to the FD to address applicability of this CWA Section 404(c) action to future proposals.

Appendix B of the FD discusses how existing data collection efforts and assumptions used in the FEIS likely underestimate impacts of the 2020 Mine Plan on anadromous fishery areas. See also EPA's response to comment 4.F.5 regarding estimated streamflow impacts in the FEIS and the FD.

5.B.15 Bristol Bay Regional Seafood Development Association (BBRSDA) (Doc. #2062, p. 9)

In addition, we understand that the phrase "any future plan" includes not just a narrowly proposed starter plan for purposes of obtaining a permit, but a plan that is economically viable, uses proven technology and methods, and constitutes the actual plan for developing the deposit. To the extent that EPA disagrees, BBRSDA recommends that the restriction be broadened to make this clear.

Finally, BBRSDA notes that the phrase "individually or collectively" in the restriction could be a potential source for confusion, as it is unclear whether it modifies "discharge," or "future plan," or both. It should be obvious both that the recommendation applies to individual or collective discharges, and that "future plan" cannot be segmented in an effort to avoid a finding of unacceptable adverse effects and hide the truly intended plan. But to the extent EPA feels that any clarification is warranted, BBRSDA recommends that EPA do so in its Recommended Determination.

EPA Response

With respect to the commenter's stated understanding that "the phrase 'any future plan' includes not just a narrowly proposed starter plan for purposes of obtaining a permit, but a plan that is economically viable, uses proven technology and methods, and constitutes the actual plan for developing the deposit," EPA notes that Section 5 of the FD clarifies how EPA will evaluate the applicability of the FD, including the information EPA needs to evaluate applicability (see Section 5.2.2 of the FD and Box 5-1). EPA's revisions to Section 5 ensure that USACE and the regulated community are able to identify, with reasonable certainty, the discharges of dredged or fill material that are subject to the FD. Moreover, prospective project proponents may seek an FD applicability evaluation at any time.

EPA also revised the phrase "individually and collectively" cited by the commenter to "individually and cumulatively" because the term "cumulatively" better describes the intent of the restriction. EPA has included additional information in Section 5.2.2 of the FD to explain the meaning of "individually" and "cumulatively," as those terms are used in the restriction and affect applicability. For example, EPA explains in Section 5.2.2 of the FD that in evaluating applicability of the restriction EPA will consider losses and streamflow changes associated with developing the Pebble deposit that have occurred or that are authorized to occur regardless of the identity of the proponent. Also see EPA's responses to comments 5.B.1, 5.B.8, and 5.B.15.

5.B.16 National Wildlife Federation (Doc. #2067, p. 10-11)

D. Both the Recommended and Final Determinations should adopt additional and modified restrictions and requirements that will protect the pristine Bristol Bay watershed from any large-scale mine.

The National Wildlife Federation strongly supports the revised PD's clear prohibition of the 2020 Mine Plan and the restrictions that would prohibit mines that would cause ecological impacts similar to those posed by the 2020 Mine Plan. We also support the revised PD's delineation of the geographic scope of Defined Area for Prohibition and the Defined Area for Restriction, both of which are highly reasonable.

However, as highlighted throughout these comments, information in the revised PD and in the vast record supporting the revised PD clearly justify: the adoption of more stringent restrictions that will protect the pristine Bristol Bay watershed from any large-scale mine; and additional requirements to ensure that all direct, indirect, and cumulative impacts will be accounted for in determining whether any future mine proposal is prohibited by the Final Determination. To help achieve these goals, the National Wildlife Federation recommends that EPA include at least the four changes outlined below in both the Recommended and Final Determinations.

1. Adopt the proposed 2014 restrictions on "impacts on aquatic resources."

As highlighted throughout these comments, information in the revised PD and the vast record supporting the revised PD justify the adoption of more stringent restrictions that will protect the pristine Bristol Bay watershed from any large-scale mine. Moreover, nothing in the revised PD or its vast record undermines the conclusion that even the smallest mine scenario considered in 2014 (Pebble 0.25) would have unacceptable adverse impacts—a determination supported by EPA's rigorous analysis of potential impacts that was both designed to, and does, support the assessment of any mine proposal in the Bristol Bay watershed. [U.S. Environmental Protection Agency, *An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay Alaska*, EPA 910-R-14-001ES (2014).]

Accordingly, both the Recommended and Final Determinations should adopt restrictions on "impacts on aquatic resources" that are at least as protective as those proposed in 2014. [U.S. Environmental Protection Agency. July 2014. 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. Region 10, Seattle, WA.] This would include restricting the discharge of dredged or fill material with the potential to cause similar or greater ecological impacts that individually or collectively would result in any of the following:

1. Loss of streams

a. The loss of 5 or more linear miles of streams with documented anadromous fish occurrence; or

b. The loss of 19 or more linear miles of tributaries of streams where anadromous fish are not currently documented, but that are tributaries of streams with documented anadromous fish occurrence; or

2. Loss of wetlands, lakes, and ponds. The loss of 1,100 or more acres of wetlands, lakes, and ponds contiguous with either streams with documented anadromous fish occurrence or tributaries of those streams; or

3. Streamflow alterations. Streamflow alterations greater than 20% of daily flow in 9 or more linear miles of streams with documented anadromous fish occurrence. [Id. at ES-6.]

EPA Response

See EPA’s response to comment 7.0.1 regarding mine scenarios analyzed in the 2014 PD. See also EPA’s response to comment 4.B.27 regarding why the FD remains focused on discharges associated with developing the Pebble deposit. See also EPA’s response to comment 5.B.8 regarding revisions to Section 5 of the FD to clarify how EPA will determine applicability of the restriction.

5.B.17 National Wildlife Federation (Doc. #2067, p. 10-11, 12)

{D. Both the Recommended and Final Determinations should adopt additional and modified restrictions and requirements that will protect the pristine Bristol Bay watershed from any large-scale mine.

The National Wildlife Federation strongly supports the revised PD’s clear prohibition of the 2020 Mine Plan and the restrictions that would prohibit mines that would cause ecological impacts similar to those posed by the 2020 Mine Plan. We also support the revised PD’s delineation of the geographic scope of Defined Area for Prohibition and the Defined Area for Restriction, both of which are highly reasonable. However, as highlighted throughout these comments, information in the revised PD and in the vast record supporting the revised PD clearly justify: the adoption of more stringent restrictions that will protect the pristine Bristol Bay watershed from any large-scale mine; and additional requirements to ensure that all direct, indirect, and cumulative impacts will be accounted for in determining whether any future mine proposal is prohibited by the Final Determination. To help achieve these goals, the National Wildlife Federation recommends that EPA include at least the four changes outlined below in both the Recommended and Final Determinations.}

(...)

2. Eliminate the criteria tying the proposed restrictions to the surficial boundaries of the Pebble deposit as defined in the revised PD.

The revised PD ties the proposed restrictions to the surficial boundaries of the Pebble deposit as those boundaries are defined in the revised PD. [The revised PD defines the location of the Pebble deposit by township and range, and delineated as a 2.5- by 3.5-mile box. See revised PD at 5-1 (“For the purposes of this proposed determination, EPA Region 10 is describing the “Pebble deposit” by its surficial boundary, which is a rectangular area measuring 2.5 miles north–south by 3.5 miles east–west. As illustrated in Figures ES-5 and ES-6, this area covers: The southeast quarter of Section 17, Township 3 South, Range 35 West, Seward Meridian (S003S035W17); the south half of S003S035W14, S003S035W15, and S003S035W16; the east half of S003S035W20; the entirety of S003S035W21, S003S035W22,

S003S035W23, S003S035W26, S003S035W27, and S003S035W28; and the east half of S003S035W29, with corners at approximately latitude 59.917 degrees north (59.917 N) and longitude 155.233 degrees west (155.233 W), latitude 59.917 N and longitude 155.333 W, latitude 59.881 N and longitude 155.333 W, and latitude 59.881 N and longitude 155.233 W.”.] However, as documented in the Trustees for Alaska Comments, the extent of the Pebble deposit is merely an estimate based on the level of exploration carried out to date by the Pebble Limited Partnership. The deposit’s full extent has not been fully determined. Indeed, the known boundaries of the Pebble deposit have expanded over time as additional surveys have been conducted, and those boundaries remain “open” in all directions. [Trustees for Alaska Comments at 25-28.]

Because the purpose of the proposed action under section 404(c) of the Clean Water Act is to prohibit and restrict the disposal of dredge and fill material that would cause unacceptable adverse impacts to the aquatic ecosystem, limiting the restrictions to the currently know surficial boundaries of the Pebble deposit is inappropriate. This is because, for example, the destruction of 8.5 miles of anadromous streams within the Restricted Area is just as unacceptable if it results from mining the location of the deposit covered by the definition in the revised PD as it would be if it results from mining portions of the Pebble deposit located outside of that defined area.

To ensure that the purposes of Clean Water Act 404(c) are met, EPA should modify the proposed restrictions to ensure that they will apply to any future mining project that meets or exceeds the impacts thresholds or that would have similar ecological effects, regardless of whether the fill originated within the surficial boundaries of the “Pebble deposit” as defined in the revised PD. [The revised PD defines the location of the Pebble deposit by township and range, and delineated as a 2.5- by 3.5-mile box. See revised PD at 5-1 (“For the purposes of this proposed determination, EPA Region 10 is describing the “Pebble deposit” by its surficial boundary, which is a rectangular area measuring 2.5 miles north–south by 3.5 miles east–west. As illustrated in Figures ES-5 and ES-6, this area covers: The southeast quarter of Section 17, Township 3 South, Range 35 West, Seward Meridian (S003S035W17); the south half of S003S035W14, S003S035W15, and S003S035W16; the east half of S003S035W20; the entirety of S003S035W21, S003S035W22, S003S035W23, S003S035W26, S003S035W27, and S003S035W28; and the east half of S003S035W29, with corners at approximately latitude 59.917 degrees north (59.917 N) and longitude 155.233 degrees west (155.233 W), latitude 59.917 N and longitude 155.333 W, latitude 59.881 N and longitude 155.333 W, and latitude 59.881 N and longitude 155.233 W.”).] To do this, the Recommended and Final Determinations should clarify that fill that originates from anywhere within the “Defined Area for Restriction” will be subject to the restrictions established in the Final Determination. [Should EPA continue to limit the restriction to fill originating from within the defined Pebble deposit, it should do so with an explicit acknowledgment that the known extent of the deposit may continue to expand and that any potential future mining of that expanded deposit location would be subject to the restrictions.]

EPA Response

Section 5 of the FD has been revised to clarify that dredged or fill material need not originate within the boundary of the Pebble deposit defined in Section 5 of the FD to be associated with mining the Pebble deposit and, thus, potentially subject to the prohibition or restriction. See EPA's responses to comments 4.B.27 and 5.C.60.

Regarding applicability of this CWA Section 404(c) action to future proposals, see EPA's responses to comments 5.A.10 and 5.B.8.

5.B.18 Midgard Environmental Services LLC (Doc. #0616, p. 4)

Comment #10 – I believe all disturbance to streams and wetlands that occurs within the SFK, NFK and UTC watersheds associated with Pebble mine development must be accounted for in the proposed restrictions. An acre of wetlands filled for access road development, pipelines or ports is just as damaging as an acre filled for infrastructure construction within the immediate mine footprint. Any planned direct or indirect disturbance associated with the mine access road, pipelines, powerlines, powerplants, ports, or other ancillary infrastructure that would occur within the defined area for restriction should count against the maximum allowable disturbance calculations whether they occur within the immediate mine footprint or outside of it.

EPA Response

Discharges of dredged or fill material used to construct ancillary project components associated with developing the Pebble deposit would be subject to this action if they are located within the Defined Area for Restriction and contribute to any one of the losses or streamflow changes found to be unacceptable in Sections 4.2.1 through 4.2.4 of the FD. Revisions to Section 5 of the FD clarify that any discharges of dredged or fill material associated with developing the Pebble deposit that would occur within the Defined Area for Restriction must be evaluated for effects within the SFK, NFK, and UTC watersheds when determining the applicability of the restriction. Revisions to Section 5 of the FD include the addition of a new subsection that discusses applicability of the restriction (Section 5.2.2 of the FD), and a new text box that describes data requirements associated with applicability assessments (Box 5-1). See also EPA's response to comment 4.B.50 regarding how discharges associated with ancillary project components (e.g., access roads, or ports) are addressed in the FD.

5.B.19 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 6-7)

The EPA Should Protect Waters Beyond the North and South Forks of the Kaktuli River and Upper Talarik Creeks.

While the North and South Forks of the Kaktuli River and Upper Talarik Creek are all important and closest in proximity to the Pebble deposit, unacceptable adverse effects would also occur if mine waste

from the Pebble deposit was discharged into other nearby waters, such as the Stuyahok and Mulchatna rivers, among others. Subject to the quantitative and qualitative limits described above, the EPA should restrict discharges from the Pebble deposit into any waters in the Bristol Bay watershed, not just those within the North and South Forks of the Koktuli River and Upper Talarik Creek watersheds. Future mining operations should not be able to avoid the restrictions of a 404(c) final determination by simply transporting mine waste to a neighboring or downstream watershed.

EPA Response

See EPA's response to comment 7.0.1 for an explanation of why EPA evaluated the discharges of dredged or fill material proposed in the 2020 Mine Plan.

As described in Attachment 1 of Appendix B in the FD, an assessment of effects should occur at the spatial and temporal scales that are most relevant to the resources being evaluated. As stated on page 3-1 of the FD, EPA evaluated the impacts and effects at the spatial scale of the SFK, NFK, and UTC watersheds because these watersheds are the areas that would be most directly affected by the discharges of dredged or fill material associated with developing the Pebble deposit and because the most extensive physical, chemical, and biological data currently available have been collected in these watersheds (e.g., PLP 2011, PLP 2018a, USACE 2020a). Evaluating the effects of discharges of dredged or fill material associated with mine site development for the Pebble deposit at the scale of the SFK, NFK, and UTC watersheds enables EPA to draw conclusions at the spatial and temporal scales that are most biologically relevant to the species (salmon) and life stages (eggs, juveniles, adults) of concern—that is, the spatial and temporal scales that ultimately determine the reproductive success and long-term persistence of these species and their genetically distinct populations.

EPA determined that certain discharges of dredged or fill material associated with developing the 2020 Mine Plan will have unacceptable adverse effects at the scale of the SFK, NFK, and UTC watersheds (see Section 4 of the FD) and did not make unacceptable adverse effects determinations at larger spatial scales like the entire Bristol Bay watershed or the entire Nushagak River watershed. The administrative record supports EPA's FD, including the scales at which it evaluated the impacts and effects of the discharges of dredged or fill material at issue and the scales at which EPA made its unacceptable adverse effects determinations.

Because EPA determined that unacceptable adverse effects would result within the SFK, NFK, and UTC watersheds, the Defined Area for Restriction is appropriately limited to areas within those three watersheds and does not include the downstream and nearby waters of the Stuyahok and Mulchatna rivers. See Section 5.2.1 of the FD for an explanation of the Defined Area for Restriction.

See also EPA’s response to comment 4.B.27 regarding why the FD remains focused on discharges associated with developing the Pebble deposit and EPA’s response to comment 4.B.50 regarding the scope of discharges and impacts evaluated in the FD.

5.B.20 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 6)

The EPA Should Strengthen the Proposed Restrictions.

Katmai Service Providers and TU also encourage the EPA to adopt stronger restrictions than those included in the revised PD. The revised PD would limit future discharges that result in adverse effects “similar or greater in nature and magnitude” to those expected from the 2020 Mine Plan. [Revised PD at ES-5.] While the weight of scientific information and public interest clearly show the 2020 Mine Plan would cause unacceptable adverse effects, and that impacts of similar nature and magnitude would also be unacceptable, science and public interest also show that impacts far below those anticipated from the 2020 Mine Plan also would be unacceptable.

As evidenced by the 2014 PD and the Watershed Assessment, and the body of science developed since, the Bristol Bay watershed is a complex system of hydrologically connected waters that are of utmost importance to the region’s fisheries, its cultures, and its economy. Impacts far below that contemplated by the 2020 Mine Plan could have catastrophic impacts on individual habitats and fish stocks that are essential components to the portfolio of fishes and waters in the region. The health of the entire Bristol Bay portfolio of waters and fishes is at risk from impacts to its individual components.

The EPA should adopt quantitative and qualitative restrictions on future mining at the Pebble deposit. The EPA should adopt quantitative restrictions with clear numerical limits that are at least as restrictive as the 2014 PD. The EPA should design and adopt qualitative restrictions in reference to the health, productivity and function of any individual water or fish population. These qualitative restrictions should ensure that each individual reach within Bristol Bay’s headwaters and each individual population of fishes remains productive and viable, such that the portfolio of waters and fishes remains intact. These qualitative restrictions should prohibit discharges that destroys the health, productivity or function of any individual reach or individual population even if the discharge causes impacts far below the quantitative limits. The EPA should make clear that a proposed discharge may have unacceptable adverse impacts even if the level of impact is far below the threshold established by any quantitative restriction.

EPA Response

Although EPA did not draw a dividing line under which impacts to water resources are considered acceptable and Section 5 of the FD makes clear that “[p]roposals to discharge dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to [the FD] remain subject to all statutory and regulatory authorities and requirements under CWA Section 404,” the discharges that are

subject to the FD are limited to those that EPA evaluated. See EPA's response to comment 7.0.1.

EPA considered the qualitative restrictions proposed by the commenter but found they did not provide any additional clarity and would be challenging to implement via a CWA Section 404(c) restriction.

5.B.21 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (BBFA) (Doc. #0830, p. 3-4)

Second, part of the 2022 PD is a proposed pre-application determination. It would restrict the use of waters of the United States within the Defined Area for Restriction, as identified in Section 5.2.1, for specification as disposal sites for the discharge of dredged or fill material for the construction and routine operation of any future plan to mine the Pebble deposit that would either individually or collectively result in adverse effects similar or greater in nature and magnitude to those described in Sections 4.2.1 through 4.2.4 [which relate to the 2020 Mine Plan]. Because each of the impacts described in Sections 4.2.1 through 4.2.4 could, independently, result in unacceptable adverse effects on anadromous fishery areas, a proposal that triggers any one of these four unacceptability findings would be subject to the restriction.

2022 PD at 5-2. This restricts discharges by imposing limits "similar" to the foregoing amounts of four types of harms that would have been caused by the 2022 Mine Plan, i.e., (1) 8.5 miles of loss of anadromous streams, (2) 91.2 miles of loss of tributaries to anadromous streams, (3) 2113 acres of loss of wetlands, lakes, and ponds that contribute to anadromous streams, and (4) 29 miles of anadromous stream flow altered 20 percent or more. As shown on the preceding chart, those limits are greater, and in most instances vastly greater, than the limits of the 2014 PD. We cannot support vastly more destructive, higher limits of the 2022 PD because they are likely to allow a modestly revised mine plan to be permitted and cause vastly more destruction than would have been allowed under the limits of the 2014 PD. If the 2022 PD becomes final as is, it will probably result in a modified version of Pebble mine being permitted under a future federal administration more sympathetic to the project and will cause the destruction nearly everyone seeks to avoid.

Furthermore, as will be discussed herein, the 2022 PD acknowledges that scientific understanding has progressed since 2014, and continues to do so, related to the role that fine-scale population structure, due to habitat diversity and genetic diversity, plays in producing the portfolio effect that sustains overall productivity. Therefore, the science supports standards more protective than those of the 2014 PD rather than less, as the 2022 PD proposes. Hence, we cannot support the more destructive standards proposed by the pre-application portion of the 2022 PD and instead urge standards more protective than even the 2014 PD.

Finally, other shortcomings of the pre-application portion of the 2022 PD include: (1) it does not specify what sorts of "restrictions" might be a consequence of surpassing the more permissive limits of the 2022

PD; and (2) it does not distinguish between restrictions imposed in a permit before operations commence versus restrictions imposed for violation of a permit after operations commence. EPA should clarify these matters, and whether they involve prohibition, denial of a permit, withdrawal of a permit, criminal prosecution, civil fines, and various other forms of restrictions such as requiring an application for a variance or waiver, revision of a mine plan, etc. One of the reasons for EPA's pre-application authority is to facilitate planning by industry so that it does not waste time and money on designs unlikely to be permitted, so industry deserves to know the nature of potential restrictions before it invests time and money. See 44 Fed. Reg. 58076, 58077 (October 9, 1979). The public deserves to know, too.

The more permissive and destructive standards of the 2022 PD invite PLP and other investors in Pebble mine to seek to revise the 2020 Mine Plan to cause marginally less harms so as to avoid triggering the less protective standards of the 2022 PD. Given that the science has progressed and continues to do so regarding the role that fine-scale population structure, due to habitat diversity and genetic diversity, plays in producing the portfolio effect, we support standards more protective than those of the 2014 PD, not less, as the 2022 PD proposes. The following table summarizes some of our recommendations for discharges in the defined area.

[Table Summary of Recommendations for Discharges in the Defined Area included in submission here]

[The first four of EVC and BBFA's recommended limits are based on excerpts of the 2022 PD set forth and discussed in Part A of the "Discussion," below. Also, whereas the 2014 PD and the 2022 PD would apply restrictions only to discharges in the defined area and associated with mining the Pebble deposit, EVC and BBFA's recommended limits apply to discharges in the defined area and associated with mining, including the Pebble deposit. That is broader because of concerns about class-of-one equal protection claims discussed below in Part F.]

EPA Response

With respect to the commenter's contention that EPA did not specify "what sorts of 'restrictions' might be a consequence of surpassing the more permissive 'limits' of the 2022 PD", EPA notes that the FD limits USACE's ability to specify certain waters of the United States as disposal sites for discharges of dredged or fill material for associated with mining the Pebble deposit. The FD therefore forecloses USACE from issuing a CWA Section 404 permit to discharge dredged or fill material associated with mining the Pebble deposit into waters of the United States within the Defined Area for Prohibition or the Defined Area for Restriction if the discharges are subject to the FD. EPA makes clear in Section 5 of the FD "[p]roposals to discharge dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to this determination remain subject to all statutory and regulatory authorities and requirements under CWA Section 404." CWA Section 404 permits, once issued or authorized, have the force of law. Accordingly, if USACE in the future issues any CWA Section 404 permit that specifies disposal sites within the Defined Area for Prohibition or

the Defined Area for Restriction for discharges of dredged or fill material that are not subject to the FD and the permittee subsequently violates that permit, EPA retains the authority to take enforcement action under Section 309 of the CWA, 33 USC 1319, for CWA violations.

See EPA's responses to comments 4.B.27, 7.0.1, and 7.0.2.

5.B.22 Trustees for Alaska et al. (Doc. #0831, p. 25-28)

B. EPA should adopt a restriction that applies in the Defined Area for Restriction regardless of where the fill material originates.

EPA should apply the restriction more broadly to preclude impacts that meet or exceed the thresholds or would have similar ecological effects regardless of whether the fill originated within the “Pebble deposit” as specifically defined in the revised PD. The revised PD establishes a “Defined Area for Restriction that includes areas within the three watershed boundaries where mine claims are currently held and areas where mine claims are available [which] represents locations where there is a potential for the discharge of dredged or fill material associated with mining the Pebble deposit.” [Revised PD at 5-3; see also revised PD at ES-13, 5-2.] EPA’s apparent intention in defining the restriction area in this manner is appropriately to prevent the unacceptable adverse impact to waters within the three watersheds from fill associated with mine development. However, the revised PD also includes a definition of the Pebble deposit, by township and range, and delineated as a 2.5- by 3.5-mile box. [See revised PD at 5-1 (“For the purposes of this proposed determination, EPA Region 10 is describing the “Pebble deposit” by its surficial boundary, which is a rectangular area measuring 2.5 miles north–south by 3.5 miles east–west. As illustrated in Figures ES-5 and ES-6, this area covers: The southeast quarter of Section 17, Township 3 South, Range 35 West, Seward Meridian (S003S035W17); the south half of S003S035W14, S003S035W15, and S003S035W16; the east half of S003S035W20; the entirety of S003S035W21, S003S035W22, S003S035W23, S003S035W26, S003S035W27, and S003S035W28; and the east half of S003S035W29, with corners at approximately latitude 59.917 degrees north (59.917 N) and longitude 155.233 degrees west (155.233 W), latitude 59.917 N and longitude 155.333 W, latitude 59.881 N and longitude 155.333 W, and latitude 59.881 N and longitude 155.233 W.”).] This proposed approach inappropriately limits the restricted area based on the current status of mine claims, rather than on the geographic scope of the mineral deposit. This focus on the current status of mine claims is inappropriate because the destruction, for example, of 8.5 miles of anadromous streams within the Restricted Area is just as unacceptable if it is the result of mining the “Pebble deposit” as defined by EPA in the revised PD, or the result of mining elsewhere within the Restricted Area. [This is especially true given that EPA’s analysis of the unacceptable impacts related to stream destruction, wetlands destruction, and flow alternations does not depend on the chemistry or specific makeup of the fill material.] This is particularly true because the restrictions are intended to apply into the future, and the status of mine claims could change during that time, while the impacts from discharges of dredged or fill material from the mineral deposit—whether in an area currently subject to mine claims or not—will remain consistently harmful.

In fact, over time, what has been regarded as the Pebble deposit has expanded. In the updated May 2020 PLP Pebble Project Description, PLP identifies that it is proposing to develop the “Pebble copper-gold-molybdenum porphyry deposit (Pebble deposit)”[Pebble Limited Partnership, Pebble Project Description, POA-2017-271 (Updated May 2020) (Ex. 162).] It goes on to state that

Northern Dynasty began exploring the property, with significant success, expanding the Pebble Deposit from one billion to four billion tons by the end of 2004. . . In 2005, Northern Dynasty exercised its option to acquire the Project and in the same year discovered a significant, higher grade eastern extension to the deposit. Over the next seven years, the Pebble Deposit was expanded through drilling.[Id. at 2.]

Further in the description, PLP states that “[t]he present geometry of the Pebble Deposit comprises the West Zone, which is covered by thin glacial till and exposed in one small outcrop; the East Zone, which remains concealed by an eastward-thickening wedge of the Copper Lake Formation as well as overlying glacial till; and mineralization that extends an undetermined distance farther to the east but at great depth below the East Graben.”[Id. at 12.] It estimates the extent of the measured, indicated and inferred resource of the Pebble deposit as

approximately 7.1 billion tons containing 57 billion pounds of copper, 70 million ounces of gold, 344 million ounces of silver, and 3.42 billion pounds of molybdenum. In addition, the inferred component of the total deposit is approximately 4.9 billion tons, with 24.5 billion pounds of copper, 36 million ounces of gold, 170 million ounces of silver, and 2.2 billion pounds of molybdenum.[Id.]

In addition to copper, molybdenum and gold, in 2020, NDM released a Technical Report with a revised resource estimate that “established Pebble as the single most significant source of Rhenium in the world.”[See Northern Dynasty Minerals, Ltd., Northern Dynasty issues Technical Report: Southwest Alaska’s Pebble Project hosts the world’s most significant Rhenium resource,]ct. 2, 2020. Ex. 158 (available here <https://www.northerndynastyminerals.com/site/assets/files/4870/2020-10-02-ndm-nr.pdf>).]

In other words, the extent of the Pebble deposit has been and remains an estimate, based on PLP’s exploration; the deposit’s extent is not yet fully determined. In fact, NDM has been clear that the extent of the deposit is “open” in all directions, meaning that the extent or limit of the deposit has not yet been discerned. The following figures illustrate this important fact:[Technical Report on the 2008 Program and Update on Mineral Resources and Metallurgy, Pebble Copper-Gold-Molybdenum Project, Iliamna Lake Area Southwestern Alaska, U.S.A. Northern Dynasty Minerals Ltd., February 13, 2009.]

[Figure 19.1 Plan View of Pebble Deposit Showing Grade Distribution in CuEq from 2008 Mineral Resource Estimate and Figure 19.2 Cross Section of Pebble Deposit Showing Grade Distribution in CuEq from 2008 Mineral Resource Estimate included in submission here]

As seen in both figures, the extent of the deposit is open in all directions and depth. Also, the deposit extends east of the ZG1 fault. Exploration of this deeper east deposit has been limited. If EPA retains the “Pebble deposit” portion of the restriction, EPA should account for the fact that the deposit could be expanded and developed beyond the “deposit area” defined by EPA in the revised PD.

In sum, because the purpose of this proposed action is to prohibit and restrict the disposal of dredge and fill material that would cause unacceptable adverse impacts to the aquatic ecosystem, EPA should make it clear that any fill, originating from anywhere within the Defined Area for Restriction, would be subject to the restriction. The degree to which EPA limits the restriction to fill originating from the Pebble deposit, it should do so with an explicit acknowledgment that the deposit may expand and any potential future mining of that expanded deposit would be subject to the restriction.

EPA Response

Revisions to Section 5 of the FD make it clear that any discharges of dredged or fill material associated with developing the Pebble deposit must be evaluated for effects within the SFK, NFK, and UTC watersheds when determining the applicability of the restriction. Revisions to Section 5 of the FD include the addition of a new subsection that discusses applicability of the restriction (Section 5.2.2 of the FD) and a new text box that describes data requirements associated with applicability assessments (Box 5-1).

As a point of clarification, the Defined Area for Restriction, as defined in Section 5.2.1 of the FD, is based on a contiguous area within the boundaries of the SFK, NFK and UTC watersheds that includes the areas that have the potential to be disposal sites for the discharge of dredged or fill material associated with developing the Pebble deposit. As discussed in Section 5.2.1 of the FD, the areas within the boundaries of the three watersheds where mine claims are currently held and areas where mine claims are available represent locations that have the potential to be a disposal site for the discharge of dredged or fill material associated with developing the Pebble deposit.

The FD continues to describe a clear boundary for the Pebble deposit for purposes of the FD. EPA did not implement the commenters' recommendation to add "an explicit acknowledgment that the deposit may expand and any potential future mining of that expanded deposit would be subject to the restriction," as EPA found that such an acknowledgment would introduce additional uncertainty into the FD regarding what the FD means by the Pebble deposit. See EPA's response to comment 5.C.60 regarding how the definition of the Pebble deposit will be used for purposes of this FD. See EPA's response to comment 4.B.27 regarding why the FD remains focused on discharges associated with developing the Pebble deposit.

5.B.23 Trustees for Alaska et al. (Doc. #0831, p. 28)

Comments on whether and how EPA Region 10's proposed action under CWA Section 404(c) should consider discharges of dredged or fill materials beyond those associated with the mine site and include discharges associated with the construction of other mine infrastructure (e.g., port, pipelines, transportation corridors).

EPA does not need to evaluate the likely impacts of discharges of dredge and fill materials beyond those associated with the mine site (e.g., transportation corridors, a port, pipelines, etc.) to determine that the

impacts of discharges associated with the mine site in the 2020 Mine Plan would cause unacceptable adverse effects to aquatic resources. However, when EPA evaluates whether future mine proposals are subject to the restrictions proposed in the revised PD, EPA's only reasonable course is to include all the impacts from mine development and operation. In other words, looking just to the potential impacts of the mine site itself justifies EPA taking the currently proposed action under § 404(c), but when applying the restriction, EPA needs to evaluate the entirety of the project's impacts to the restricted area—including both direct and indirect impacts. Doing otherwise would arbitrarily narrow EPA's analysis of impacts. EPA should consider including a statement in the Recommended Determination clarifying for potential project applicants that all impacts will be subject to the restriction, and not just those directly associated with a mine site.

EPA Response

See EPA's responses to comments 4.B.50 and 5.B.18.

5.B.24 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 4, 4-5)

{Restriction Recommendations}

(...)

Definition of Pebble Deposit.

Redefine and specify that the "Pebble deposit" is broader than "an area of at least 1.9 by 2.8 miles"[Proposed Determination at page 2-1.] or delineated as a 2.5 mile- by 3.5-mile box[Proposed Determination at page 5-1.] and instead base the definition of the Pebble deposit on the best available information and science of ecological effects from mining pyritic ore. Two options to redefine the "Pebble deposit" include:

a. Remove reference to a specific border for the Pebble deposit and instead focus the restriction on the character of the ore body. As acknowledged by EPA, the full extent of the Pebble deposit is an estimate based on PLP's exploration efforts and should not be used as the basis of the restriction. [Proposed Determination at page 2-1. ("The full extent of the Pebble deposit is not yet defined.")] Because the extent of the deposit may expand over time, the agency should focus on the ore type as it is the ecological effect of mining this ore type that EPA uses to support its restriction.

b. Use the PLP's definition of the Pebble deposit and ore body extent from the company 's 2021 Preliminary Economic Assessment report,[See, Pebble Project Preliminary Economic Assessment NI 43-101 Technical Report, Prepared for Northern Dynasty Minerals Ltd, (effective date: Sept. 9, 2021), Figure 10-2, at p. 109, on file with the Securities and Exchange Commission at:

https://www.sec.gov/Archives/edgar/data/1164771/000165495421011600/ndm_ex991.htm.]

including the full 11 billion tons of measured, indicated, and inferred ore at the Pebble deposit.[See, e.g.,

Northern Dynasty Minerals-Pebble Project Reserves and Resources,
[https://northerndynastyminerals.com/pebble-project/reserves-resources/.](https://northerndynastyminerals.com/pebble-project/reserves-resources/)]

EPA Response

See EPA’s responses to comments 5.B.1 and 5.C.60 regarding the definition of the Pebble deposit for purposes of this FD.

5.B.25 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 61-66)

C. BBNC Supports Clarified Restrictions

EPA is proposing to establish upper limits on the adverse impacts to water resources associated with mining the Pebble deposit. However, as EPA states, this does not mean that PLP proposals that may impact less than the enumerated standards would necessarily be environmentally acceptable or permissible under the CWA. And indeed, the 2022 PD notes that any future proposals to mine the Pebble deposit “that would either individually or collectively result in adverse effects similar or greater in nature and magnitude” would be a proposal “that triggers any one of these four unacceptability findings [and] would be subject to the restriction.” [2022 PD at p. 5-2.]

In order to avoid PLP permitting maneuvers as seen with the 2014 PD and the company’s 2017 permit application, [See, e.g., PLP Website “How Big Is It?” at <https://pebblepartnership.com/size> (“our footprint is a near match for the scenario which even the Obama administration’s EPA said could enter permitting.”).] and to clarify the scope of the restrictions, EPA should explicitly define “adverse effects similar or greater in nature and magnitude” in a Recommended Determination. Here BBNC provides Region 10 with two recommendations towards defining “adverse effects similar or greater in nature and magnitude.” To be most effective, these two recommendations should be taken in conjunction with defining the Pebble deposit as described in section VII(A) above.

Finally, BBNC reiterates our recommendations on EPA’s 2014 PD, namely that Region 10 clarify that the 404(c) restrictions apply on an area-wide basis rather than as limits on individual projects and that the agency should consider strengthening the restrictions by protecting salmon from toxic contamination and by applying a rebuttable presumption of anadromous fish occurrence to unsurveyed streams.

BBNC agrees with EPA’s assessment that “it would not be reasonable or necessary to engage in another multi-year NEPA and CWA Section 404 review process for future plans that propose to discharge dredged or fill material in the Defined Area for Restriction that could result in effects that are similar or greater in nature and magnitude to effects of the 2020 Mine Plan.” [2022 PD at ES-18.] To that end, EPA should provide more certainty to the people of Bristol Bay and clarity to the mining industry about when the agency might apply the 404(c) restrictions a final 404(c) action to any future plans to mine the Pebble deposit.

1. Recommendation #1 – Region 10 Should Elaborate on What Constitutes “Similar or Greater in Nature and Magnitude”

The 2022 PD's restrictions would limit the "discharge of dredged or fill material for the construction and routine operation of any future plan to mine the Pebble deposit that would either individually or collectively result in adverse effects similar or greater in nature and magnitude to those described in Sections 4.2.1 through 4.2.4." [2022 PD at 5-2 (emphasis added).] Each of these four types of impacts "could, independently, result in unacceptable adverse effects on anadromous fishery areas" and, accordingly, any proposal that runs afoul of "any one of these four unacceptability findings would be subject to restriction." [Id.]

The restrictions as drafted – with emphasis on numerical standards for the restrictions and use of "similar or greater" – is vulnerable to future proposals from PLP that would be unacceptable based on the science. The threat that PLP would seek to artificially segment a future mine proposal to maneuver around numerical restrictions is very real and was seen in PLP's marketing of its 2017 permit application as compared to the 2014 PD. [See, e.g., PLP Website "How Big Is It?" at <https://pebblepartnership.com/size> ("our footprint is a near match for the scenario which even the Obama administration's EPA said could enter permitting.").]

In the Recommended Determination, Region 10 should provide more detail as to what constitutes adverse effects "similar or greater in nature and magnitude" as the 2020 Mine Plan. This definition should focus on particular ecological effects supported by sound science, not just numerical standards developed in response to PLP's 2020 mine plan. These ecological effects should be based on the 404(b)(1) Guidelines, specifically as they relate to significant degradation to waters of the United States (40 CFR § 230.10(c)).

The Recommended Determination should also ensure – through clear guidance to the Army Corps, PLP, and people of Bristol Bay – that the restrictions will provide protections from a mine similar to that analyzed in the 2014 PD and the 2014 Watershed Assessment. Region 10 may accomplish this by including in the restrictions standards for permit application data to ensure that EPA can adequately analyze a proposal's impact early in any permitting process. In particular, Region 10 should explicitly require water resources mapping, including field-verified mapping and fine-scale aerial photography interpretation, in any future 404 permit application for a proposal to mine the Pebble deposit. [See, e.g., 2022 PD Box 4-2.] The Recommended Determination should state an expectation that any future mining proposal would include mapping of sufficient detail to allow EPA to more accurately assess the impacts of the proposal. This is data that the Army Corps CWA regulations require for a complete permit application, [33 C.F.R. 325.1.] and is information necessary to ensure compliance with the 404(b)(1) Guidelines. As such, EPA should require this detailed information in any permit application .

Providing this certainty will ensure that the people of Bristol Bay, federal and state regulators, and industry are all clear on the precise meaning and scope of the restrictions prior to any future permitting process of mining in the area, rather than spending numerous financial and human resources in a future environmental review process to determine whether the restrictions will be triggered. In providing further detail regarding the application of the restrictions in the Recommended Determination, Region 10 can more closely align with the 2022 PD's intent that "proposing the restriction now provides the

most effective, transparent, and predictable protection of valuable anadromous fishery areas against unacceptable adverse effects throughout the Defined Area for Restriction.” [2022 PD at p. 2-19.]

2. Recommendation #2 – If Using Numerical Standards, Region 10 Should Account for Numerical Uncertainty

Should Region 10 rely on numerical standards for its restrictions, we recommend that the Recommended Determination account for numerical uncertainty by utilizing numerical ranges of the extent of waters impacted by a proposal to mine the Pebble deposit. This recommendation utilizes the best available information about the extent of mapped waters and wetlands in the North Fork Koktuli, South Fork Koktuli, and Upper Talarik Creek as disclosed through the Army Corps permitting process. In addition, this recommendation accounts for EPA’s finding in the 2014 Watershed Assessment that determinations of impacts to waters and wetlands in the region are improved with “higher-resolution mapping, increased sampling of possible fish-bearing waters, and ground-truthing.” [BBWA, at p. 7-23, Box 7-1.]

The restrictions proposed by Region 10 establish ceilings for aquatic resource losses resulting from the discharge of dredged or fill material from mining the Pebble deposit. These restrictions would apply to any future plans to mine the Pebble deposit and levels of impacts to aquatic resources would be assessed based on a 404 permit application. However, Region 10 and the lengthy Final EIS administrative record note uncertainties with the available data regarding mapped streams, wetlands, anadromous waters, and outside the 2020 Mine Plan footprint, potentially making a judgment about the extent of impacts from a proposal ambiguous at first blush. This concern is not merely academic. As seen in the Army Corps permitting process, it took the agency and PLP more than two years after initial submission of the 404 permit application to fully account for the waters impacted. As such, in the Final EIS issued in 2020, updated mapping and ground-truthing had determined that the project’s impacts to streams was 25% higher than that disclosed in the 2019 draft EIS. [Compare Draft EIS mine site impacts to streams of 73.2 miles (Draft EIS, at Table ES-2, p. ES -60) with Final EIS mine site impacts to streams of 99.7 miles (Final EIS, at Table ES-1, p. ES-93).]

In order to increase certainty to the people of Bristol Bay and to companies seeking to mine the Pebble deposit, Region 10 should implement a numerical range for determining when its restrictions standards automatically apply. In particular, the record indicates the following levels of uncertainties that should be considered:

* Stream miles and wetlands: “the characterization of aquatic habitat area is limited by resolution of the available NWI data, which tend to underestimate their extents. For example, multiple sources of high-resolution remote imaging and ground-truthing were used to map streams and wetlands at the mine site [for the permitting process]. This high-resolution mapping identifies approximately 400 percent more stream miles than the NHD and approximately 40 percent more wetland acres than the NWI in this area [...] However, this high-resolution mapping of aquatic resources is not available for the entire SFK, NFK, and UTC watersheds.” [2022 PD, at p. 3-8. See also 2022 PD, at p. 4-20, Box 4-2 (“The stream and

wetland mapping generated by PLP was developed using more site-specific information than is typically used in the development of NHD or NWI.”.)]

* Streamflow alteration: “EPA Region 10 has concerns with the methods used to establish the ecosystem flow requirements and predict impacts on downstream anadromous fish habitat as presented in the FEIS.” [2022 PD, at p. 4-32]

* Anadromous habitat: The State of Alaska’s Anadromous Waters Catalogue (used by state and federal agencies for documentation of salmon presence and absence) states that “Based upon thorough surveys of a few drainages it is believed that this number represents less than 50% of the streams, rivers and lakes actually used by anadromous species in Alaska.”

[https://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view_article&articles_id=502. See also, BBWA, at p. 7-23, Box 7-1.]

Taking these uncertainties into account, a Recommended Determination could maintain the current 2022 PD restrictions while adding a lower range to which the restrictions would automatically apply to any new permit application to mine the Pebble deposit:

[Table of Recommended Determination Lower Range Restrictions included in submission here] [Where % change = $100 \times (\text{final} - \text{initial}) / |\text{initial}|$]

In a Recommended Determination, Region 10 should be clear that any such lower range should not be interpreted as a floor and that the agency still retains its discretion to utilize final 404(c) restrictions whenever it decides impacts that meet or exceed the thresholds or would have similar ecological effects regardless of whether the fill originated within the Pebble deposit. However, a restrictions lower range could be expressed in the Recommended Determination as a level of impacts at which, if initially determined in a 404 permit application to mine the Pebble deposit, the application of the 404(c) restrictions automatically would apply. This would avoid the need for costly site-specific determinations of wetlands and streams impacted that would only occur well into the permitting process. Creating such a lower range on the restrictions, based on the known uncertainties in the current data availability for wetlands, streams, and fish presence, would increase certainty to the people of Bristol Bay as well as to potential mine developers.

3. Recommendation #3 – Region 10 should clarify and strengthen the 2022 PD restrictions by incorporating BBNC’s recommendations on the 2014 PD

In 2014, BBNC provided Region 10 with extensive recommendations on the 2014 PD restrictions, including requests that the agency clarify and strengthen a number of aspects of the restrictions. For reference, BBNC’s 2014 comment letter is attached in Appendix C. Some of BBNC’s 2014 recommendations remain applicable to the 2022 PD restrictions and are summarized here.

Specifically, as detailed in the 2014 PD comment letter, Region 10 should:

* Clarify that the 404(c) restrictions apply on an area-wide basis rather than as limits on individual projects. As detailed in BBNC’s 2014 recommendations, the use of “individually or collectively” in the

restrictions should be clarified and very clearly stated in the Recommended Determination that the 404(c) restrictions must be implemented on an area-wide basis in order to ensure a mining project is not proposed or developed in a piecemeal fashion so that it avoids the aquatic resource loss ceilings imposed by the restrictions. BBNC's 2014 comment letter contains specific language suggestions for how to define "individually or collectively" to help ensure that the proposed 404(c) restrictions are durable and cannot be evaded through project segmentation or multiple mining proposals. [See enclosed Appx. C, at pp. 157-158 (BBNC comment letter on 2014 PD, at pp. 26-27).]

* Region 10 should apply a rebuttable presumption of anadromous fish occurrence to unsurveyed streams. As detailed in BBNC's 2014 recommendations, fish populations across Bristol Bay have not been comprehensively sampled and, as a result, the Anadromous Waters Catalog ("AWC") and Alaska Freshwater Fish Inventory ("AFFI") databases fail to characterize all potential fish-bearing streams. [See enclosed Appx. C, at p. 165-167 (BBNC comment letter on 2014 PD, at pp. 34-36).] In order to prevent these information gaps from undermining the effectiveness of the proposed restrictions, in its Recommended Determination Region 10 should incorporate a presumption that unsurveyed streams in the impacted area are anadromous. BBNC's 2014 comment letter contains specific language suggestions for how to utilize such a presumption in the restrictions. [See id.]

EPA Response

Section 5 of the FD provides additional clarification regarding what constitutes adverse effects "similar or greater in nature and magnitude," see EPA's response to comment 5.B.8. In addition, as part of the revisions to the restriction in the FD, the term "collectively" referenced by the commenter has been replaced in the FD with the term "cumulatively," see the discussion in Section 5.2.2 of the FD and EPA's response to comment 5.B.15.

See EPA's response to comment 4.B.27 regarding why the FD remains focused on discharges associated with developing the Pebble deposit.

See EPA's response to comment 5.B.1 regarding how EPA will determine applicability of the restriction for future proposals.

It is not clear what the commenter's "numerical uncertainty" values are designed to measure or how they would be scientifically defensible to apply as the commenter recommends. Regardless, the values proposed by the commenter are not technically defensible to apply in this case because the impact values for additional stream loss in the FD do not rely on NHD and the impact values for wetlands/other waters loss in the FD do not rely on NWI. In addition, the AWC value provided by the commenter is not technically defensible to apply in this case because the waters around the Pebble deposit have been more extensively sampled than other waters in the Bristol Bay watershed. Also, the uncertainties of the AWC and other datasets have already been taken into account in developing the FD. EPA found that the commenter's recommendation to apply a

rebuttable presumption would introduce unnecessary confusion into the FD by conflating the meaning of streams with and without documented anadromous fish occurrence.

5.B.26 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 4)

{Restriction Recommendations}

(...)

Elaborate on "similar or greater in nature and magnitude. "

Provide more detail on what constitutes adverse effects "similar or greater in nature and magnitude" with a focus on ecological effects supported by sound science that would restrict a mine similar to that analyzed in the 2014 PD and Watershed Assessment.

EPA Response

Section 5 of the FD was revised since the PD in response to comments to provide additional clarification. See EPA's responses to comments 5.B.1, 5.B.8, and 5.B.15. See EPA's response to comment 7.0.1 regarding mine scenarios analyzed in the 2014 PD.

5.B.27 Bristol Bay Economic Development Corporation (BBEDC) (Doc. #0837, p. 4)

Restriction Recommendations

We appreciate that EPA is seeking to remove the threat of future plans to mine the Pebble deposit through use of a restriction on any future plan that would result in adverse effects "similar or greater in nature and magnitude" to the 2020 Mine Plan. However, the restriction as drafted - with its emphasis on numerical standards for the restriction and use of "similar or greater" - is vulnerable to future proposals from PLP that would be unacceptable based on the well-established science.

EPA Response

Section 5 of the FD was revised since the PD in response to comments to provide additional clarification. See EPA's responses to comments 5.A.1, 5.B.1, 5.B.8, and 5.B.15.

5.B.28 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 20)

Similarly, the revised Proposed Determination restricts future mining of the Pebble deposit that would "either individually or collectively result in adverse effects similar or greater in nature and magnitude to those described in Sections 4.2.1 through 4.2.4" [Revised Proposed Determination at 5-2.] of the revised Proposed Determination. However, the restriction as drafted—with its emphasis on numerical standards and use of "similar or greater"—is vulnerable to future proposals from PLP that would be unacceptable based on the scientific record. For example, as it did in its 2017 permit application, PLP

could seek to evade the restrictions by proposing a “smaller” mine that would still result in significant impacts.

EPA Response

Section 5 of the FD was revised since the PD in response to comments to provide additional clarification. See EPA’s responses to comments 5.A.1, 5.B.1, 5.B.8, and 5.B.15.

5.B.29 SalmonState (Doc. #0858, p. 4-5)

Restrictions

Thank you for proposing restrictions as well as prohibitions on the discharge of dredge or fill into the headwaters of Bristol Bay. SalmonState agrees that alongside the prohibitions set forth, restrictions are also necessary to safeguard the waterbodies and habitat that support Bristol Bay. SalmonState has no comment on the geographic boundaries set forward in which the restrictions would apply. Providing restrictions alongside the prohibitions appropriately provide a clear indication to PLP and future mining companies the importance of the Bristol Bay watershed and the necessity for heightened protections from mining pollutants.

The development of mineral resources in the Pebble deposit area poses a momentous threat to not only the localized area of the mineral deposit, but to the whole of the Bristol Bay watershed. [2014 PD, at ES-5, 5-1.] The development of the Pebble deposit area not only threatens the salmon spawning, and rearing streams by also jeopardize the world-class commercial and sport fishing trades in the downstream Bristol Bay area. “The exceptional quality of the Bristol Bay watershed’s fish populations can be attributed to several factors, the most important of which is the watershed’s high-quality, diverse aquatic habitats unaltered by human-engineered structures and flow management controls. Surface and subsurface waters are highly connected, enabling hydrologic and biochemical connectivity between wetlands, ponds, streams, and rivers and thereby increasing the diversity and stability of habitats able to support fish.” [BBWA, at 8.] These connected high quality diverse aquatic habitats would be destroyed in the face of mineral development of the Pebble deposit area.

Throughout the NEPA review process led by the US Army Corps of Engineers for the Pebble mine project proposal, EPA recognized and expressed grave concern for the impacts of mine development and discharge of mine waste in the South Fork Kuktuli River, North Fork Kuktuli River, or Upper Talarik Creek watersheds. [See EPA letter to US Army Corps of Engineers, May 28, 2020 and EPA comments on Preliminarily Final EIS] Furthermore, in 2014, the EPA, through the BBWA, determined that a mine proposal considerably smaller in size and capacity, would have substantial adverse and unacceptable impacts. Therefore, it is appropriate here, and well within the precincts of the agency’s CWA § 404(c) authority to restrict the discharge of any large-scale mine proposal of the Pebble deposit. To reflect the science in the 2014 BBWA and EPA’s comments throughout the NEPA review process of the Pebble mine project from 2017-2020, SalmonState requests that in a Recommended Determination, EPA clarify that “similar or greater in nature or magnitude” criteria does not follow the numerical thresholds set forward, but rather the ecological harm development of the Pebble deposit would impose.

EPA Response

Section 5 of the FD was revised in response to comments to provide additional clarification. See EPA's responses to comments 5.A.1, 5.B.1, 5.B.8, and 5.B.15. See also EPA's response to comment 1.B.1.

5.B.30 Wassiliisia Bennis (Doc. #2667-18, p. 50-51)

I would like to thank EPA for reinitiating its Clean Water Act, review of the proposed Pebble Mine, and revisiting the Proposed Determination. Please impose tight restrictions - tighter restrictions so we do not have to fear a new, new permitting proposal. We need finality, as we have been engaged in this destructive and threat to this effort for two decades. Our way of life is worth protecting. Please finalize the 404(c) action before the end of this calendar year.

EPA Response

See EPA's response to comment 1.B.1. In addition, Section 5 of the FD, which describes the prohibition and restriction, was revised in response to comments to provide additional clarification. See EPA's responses to comments 5.A.1, 5.B.1, 5.B.8, and 5.B.15.

5.B.31 Deirdre Hill (Doc. #2664-6, p. 7)

Finally, we need strong restrictions in place so Pebble cannot easily put forward another mine plan that must go through this process once again.

EPA Response

See EPA's response to comment 1.B.1. In addition, Section 5 of the FD, which describes the prohibition and restriction, was revised in response to comments to provide additional clarification. See EPA's responses to comments 5.A.1, 5.B.1, 5.B.8, and 5.B.15.

5.B.32 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 53-58)

VIII. The Proposed Prohibitions and Restrictions are Designed to Prohibit Any Development of the Pebble Deposit Rather Than to Avoid Any Unacceptable Adverse Effects

EPA proposes to "prohibit the specification of waters of the United States within the mine site footprint for the 2020 Mine Plan located in the SFK and NFK watersheds as disposal sites for the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan." [Revised Proposed Determination at A-2.] In addition, EPA proposes to "restrict the use of certain waters of the United States within the SFK, NFK, and UTC watersheds for specification as disposal sites for the discharge of dredged or fill material for the construction and routine operation of any future plan to mine the Pebble deposit that would either individually or collectively result in adverse effects similar or greater in nature and magnitude to those associated with the 2020 Mine Plan." [Id.] The restriction would apply to an area that encompasses certain headwaters of the SFK, NFK, and UTC watersheds and includes approximately 309 square miles.

In the Revised Proposed Determination, EPA states that the proposed discharge restriction “applies only to specified discharges...associated with mining the Pebble Deposit.” [Id. at ES 1.] Yet the alleged adverse impacts are based on wetland and stream losses and streamflow changes, which are not impacts specific to the Pebble Deposit or even mining. For example, if EPA is correct that the loss of 8.5 miles of anadromous streams anywhere in this entire 309 square mile area would lead to unacceptable effects on fisheries, then that should apply to any development that causes such losses, whether it be a road, a pipeline, or a residential development. EPA has failed to explain why mining the Pebble Deposit specifically is prohibited, but other activity in the same area, including mining another deposit, would not be prohibited or restricted even if the activity had equivalent impacts.

The CWA authorizes EPA to take action under Section 404(c) only when EPA has demonstrated that a specific project will have “an unacceptable adverse effect” on specific, identified aquatic resources. 33 U.S.C. § 1344(c); see also *James City Cnty.*, 758 F. Supp. at 352 (“EPA has not met its statutory duty of showing that the discharge necessary for the Ware Creek Reservoir will have an unacceptable adverse effect”). EPA’s regulations define an “unacceptable adverse effect” as an “impact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies (including surface or ground water) or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas.” 40 C.F.R. § 231.2(e).

In this case, EPA has not demonstrated any unacceptable adverse effects because the Agency has been unable to quantify any impacts of mine development on any local or regional fish population or fishery. Thus, EPA has not met its burden to demonstrate that discharge of fill into particular streams or waterbodies at the Pebble Deposit will cause unacceptable adverse effects to particular downstream resources. See *Bersani*, 850 F.2d at 40 (EPA bears “[t]he burden of proving that the discharge will have an ‘unacceptable adverse effect.’”) (emphasis added); see also Section 404(c) Procedures, 44 Fed. Reg. 58076, 58078 (recognizing that EPA bears the “responsibility of establishing a basis for any subsequent determination of unacceptable adverse effects”).

EPA cannot take action under Section 404(c) without demonstrating adverse effects, as defined in the CWA and implementing regulations. In other words, EPA can only take such action where it has demonstrated that the discharge, and any secondary impacts such as flow reduction, will result in unacceptable adverse effects on local or regional fish populations or fisheries. For example, changes in downstream flows are a factor to be considered under the Section 404(b)(1) guidelines, 40 C.F.R. § 230.11(b), but a change in downstream flow alone is insufficient to justify action under 404(c) – the Agency must still demonstrate that the change in water flow will have an unacceptable adverse by causing a “significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas.” 40 C.F.R. § 231.2(e). EPA has made no such demonstration in the Revised Proposed Determination.

Instead, EPA engaged in a result-driven analysis. EPA defined the restrictions in terms of the Agency’s desire to forbid any development of the Pebble Deposit, rather than based on the specific impacts to the ecosystem/fisheries. [See, e.g., id. at 5-3 (EPA “focused on areas where mine claims are held” rather than where ecological impacts have been demonstrated).] With this result-driven approach, EPA fails to

comply with its obligations under Section 404(c) to determine the degree of impacts that would cause unacceptable adverse effects to local or regional fish populations or fisheries. EPA has asserted the significance of certain headwater streams and wetlands based on third-party literature and the mere presence of fish, while rejecting the site-specific and relevant data that would have allowed it to make a definitive and scientifically defensible assessment. But, ultimately, the Revised Proposed Determination does not demonstrate empirically and quantitatively that mineral development at Pebble will result in an unacceptable adverse effect on local or regional fish populations or fisheries.

A. The Proposed Defined Area for Restriction is Overbroad

EPA was delegated a narrow window of authority under Section 404(c) of the CWA. As the D.C. Circuit explained, Section 404(c) “affords EPA two distinct (if overlapping) powers to veto the USACE’s specification: EPA may (1) ‘prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site’ or (2) ‘deny or restrict the use of any defined area for specification (including the withdrawal of the specification).” *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 614 n.2 (D.C. Cir. 2013) (quoting 33 U.S.C. § 1344(c)) (emphasis added). And EPA may take such action only after determining “that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.” 33 U.S.C. § 1344(c) (emphasis added).

The legislative history of the CWA further illuminates Congress’s intent to grant authority to EPA only to veto or restrict specific disposal sites. The Senate Debate on the Conference Report explained that the Committee found that EPA “should have the veto over the selection of the site for dredged spoil disposal and over any specific spoil to be disposed of in any selected site.” 118 Cong. Rec. 33,699 (1972), reprinted in 1 Legislative History of the Federal Water Pollution Control Act Amendments of 1972, at 161, 177 (1973) (Senate Debate) (emphasis added). The House Debate on the Conference Report similarly provided that “it is expected that disposal site restrictions or prohibitions shall be limited to narrowly defined areas.” 118 Cong. Rec. 33,766 (1972), reprinted in 1 Leg. History 236, 236 (emphasis added). [See also H.R. 11896 (Mar. 27, 1972), in 1A Legislative History of the Water Pollution Control Act Amendments of 1972, at 325 (1973) (“It is expected that until such time as feasible alternatives methods for disposal of dredged or fill material are available, unreasonable restrictions shall not be imposed on dredging activities essential for the maintenance of interstate and foreign commerce.”).]

Thus, Congress only granted EPA authority to prohibit or restrict specified disposal sites under Section 404(c), not to set aside large areas of land. As the Supreme Court held in *Coeur Alaska Inc. v. Southeast Alaska Conservation Council*, the CWA “gives the EPA authority to ‘prohibit’ any decision by the Corps to issue a permit for a particular disposal site.” 557 U.S. 261, 274 (2009) (emphasis added); see also *Mingo Logan Coal*, 714 F.3d at 610 (“Subsection 404(c) authorizes the Administrator, after consultation with the Corps, to veto the Corps’ disposal site specification.”) (emphasis added). Despite this clear statutory directive, EPA has now asserted authority to restrict disposal under Section 404(c) in a “disposal site” that is 309 square miles. [Revised Proposed Determination at 5-3.] This is far from a specific disposal site. In fact, 309 square miles is more than 23 times the size of the entire mine site in the 2020 Mine

Plan. [See FEIS at 4.5-4.] To put this proposed disposal site in perspective, the site is more than three times the size of the land area of the City of Seattle (83.7 sq. miles). The disposal site proposed in this case is 66 times larger than that designated in any prior Section 404(c) action. The largest disposal site in any final Section 404(c) determination was for the Bayou aux Carpes site in Louisiana, where the disposal site was defined as 3000 acres, or 4.68 square miles. See Final Determination of the Assistant Administrator for External Affairs Concerning the Bayou aux Carpes Site Pursuant to Section 404(c) of the Clean Water Act, 50 Fed. Reg. 47267, 47628 (Nov. 15, 1985).

Under the CWA, EPA should have first identified whether there are particular levels of impacts to specific waterbodies that would involve unacceptable adverse effects. In this case, EPA did not make any real effort to delineate a specific disposal site, but instead simply drew a line around large portions of three watersheds and imposed broad restrictions within those watersheds, with no scientific assessment of consequent effects on fish populations.

It is clear that the Defined Area for Restriction proposed by EPA is not based on science, but instead is based on the Agency's goal of preventing any development of the Pebble deposit. In the Revised Proposed Determination, EPA provides that the proposed Defined Area for Restriction is based on EPA's "belief" that "future plans to mine the Pebble Deposit could result in unacceptable adverse effects on anadromous fishery areas anywhere in the NFK, SFK and UTC watersheds." [Revised Proposed Determination at 5-2.] In other words, EPA defined the disposal site to include any waterbody within a 309 square mile area to ensure that it was able to preclude any development of the Pebble deposit. However, the CWA authorizes EPA to take action under Section 404(c) only when EPA has demonstrated that a specific disposal activity at a specific site will have "an unacceptable adverse effect." 33 U.S.C. § 1344(c); see also James City Cnty., 758 F. Supp. at 352 ("EPA has not met its statutory duty of showing that the discharge necessary for the Ware Creek Reservoir will have an unacceptable adverse effect"). EPA has not demonstrated any unacceptable adverse effects in the Revised Proposed Determination because the Agency has been unable to quantify impacts of any mine plan, current or future, on any local or regional fish population or to relate the significance of any such change on any Bristol Bay fishery – commercial, subsistence or sport.

EPA identified the broadest possible area where mining activity could occur at the Pebble Deposit and then defined the disposal area as broadly as possible to preclude such an operation. EPA's proposal amounts to an attempt to "zone" a 309 square mile area of state-owned land as permanently protected from development. [For example, EPA states that "entire landscapes are involved" to protect fisheries. Id. at 4-11.] Congress did not give EPA such broad authority.

B. The Proposed Defined Area for Restriction is Vague and Unworkable

EPA's proposed Defined Area for Restriction is impermissibly broad and vague; aimed at precluding all development within the area rather than avoiding any demonstrated impacts to fish. EPA proposes to "restrict the use of certain waters of the United States within the SFK, NFK, and UTC watersheds for specification as disposal sites for the discharge of dredged or fill material for the construction and routine operation of any future plan to mine the Pebble deposit that would either individually or

collectively result in adverse effects similar or greater in nature and magnitude to those associated with the 2020 Mine Plan.” [Id. at A-2 (emphasis added).]

EPA does not explain how this vague standard will be applied to future projects. The standard is unworkable because a future applicant will not be able to predict whether its proposed development “would either individually or collectively result in adverse effects similar or greater in nature and magnitude to those associated with the 2020 Mine Plan.” For example, would a future applicant’s compensatory mitigation plan be factored in to demonstrate reduced impacts? If a future application proposed a footprint 10% smaller and impacted 10% fewer wetlands, would that project still be prohibited? These restrictions and definitions do not provide a workable standard for any future applicant to predict what is or is not prohibited within the Defined Area for Restriction.

EPA also does not explain what would be included in assessing “collective” impacts. But by including “collective” impacts, EPA has provided a way to prevent any future development in the 309 square mile area. Any future mine plan, no matter how small, could be deemed to contribute to adverse effects similar to those associated with the 2020 Mine Plan if the plan is viewed collectively with any other present or future development in a 309 square mile area.

EPA has thus crafted overly broad and vague restrictions that preserve its authority to find any future mining development to be prohibited under 404(c). Such vagueness and excessive flexibility violates the Administrative Procedure Act (“APA”). *Talk Am., Inc. v. Mich. Bell Tel. Co.*, 564 U.S. 50, 69 (2011) (Scalia, J., concurring) (it defeats the principles of the APA and administrative law to permit “the agency to enact vague rules which give it the power, in future adjudications, to do what it pleases.”); see also *Trinity Broad. of Fla., Inc. v. FCC*, 211 F.3d 618, 628 (D.C. Cir. 2000) (asking whether “a regulated party acting in good faith would be able to identify, with ascertainable certainty, the standards with which the agency expects parties to conform”).

EPA Response

EPA agrees with the commenter that the Agency must establish a basis for its unacceptable adverse effects determinations, 44 FR 58080. With respect to the commenter’s contention that “[t]he CWA authorizes EPA to take action under Section 404(c) only when EPA has demonstrated that a specific project will have ‘an unacceptable adverse effect’ on specific, identified aquatic resources,” CWA Section 404(c) authorizes EPA to prohibit the specification of any defined area as a disposal site, and to deny or restrict the use of any defined area for specification as a disposal site “whenever” it makes the required determination under the statute. See 33 USC 1344(c) (emphasis added); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (D.C. Cir. 2013). See also section 2 of the FD. EPA need not determine that “a specific project” will have unacceptable adverse effects. EPA does not “evaluate a project” under CWA Section 404(c). EPA evaluates whether discharges of dredged or fill material will have unacceptable adverse effects on specific and identified enumerated resources, and the Agency may exercise CWA Section 404(c) authority at any time, including before a permit application has been submitted.

33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co.*, 714 F.3d at 613 (D.C. Cir. 2013). See also EPA's responses to comment 2.C.22, 2.C.23, 2.C.40, 2.C.41, and 4.A.1.

EPA provides the basis for its determinations that the discharges of dredged or fill material evaluated in the FD will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds in Section 4 of the FD, and EPA's determinations are entitled to deference. See *Mingo Logan Coal Co. v. EPA*, 70 F. Supp. 3d 151, 170 (D.D.C. 2014) (citing *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 513–14, (2009) (citations omitted). "Congress entrusted EPA with the task of protecting the environment, and the Court should not substitute its judgment for EPA's. As long as EPA's conclusion that [the] discharge of dredged and fill material would have an unacceptable adverse effect" on anadromous fishery areas "is reasonable and supported by the record, the Court must defer and the EPA's FD is valid." *Mingo Logan*, 70 F. Supp. 3d 151 at 170 (citing *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)). EPA's determinations that the discharges of dredged or fill material evaluated in the FD will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds are well-supported by an extensive body scientific and technical information that is well within the Agency's areas of expertise. See Section 4 of the FD. See also EPA's response to comment 4.B.41.

With respect to the commenter's contention that EPA must demonstrate that the discharges of dredged or fill material will have unacceptable adverse effects on "local or regional fish populations," nothing in CWA Section 404(c) or its implementing regulations requires EPA to quantify impacts to "local or regional fish populations." See also EPA's response to comment 4.A.1. See also EPA's response to comment 4.C.6.

With respect to the commenter's contention that EPA "has failed to explain why mining the Pebble Deposit specifically is prohibited, but other activity in the same area, including mining another deposit, would not be prohibited or restricted," EPA first notes that EPA's action does not prohibit mining of the Pebble deposit. EPA's CWA Section 404(c) action does not regulate mineral development. EPA's action limits USACE's ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material. EPA also makes clear that the FD does not "forbid any development of the Pebble Deposit" nor does it "'zone' a 309 square mile area of state-owned land as permanently protected from development." See EPA's responses to comment 2.C.8 and 2.C.21. Section 5 of the FD describes the Defined Area for Prohibition and the Defined Area for Restriction, within which EPA's action limits USACE's ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD. The FD only applies to discharges of dredged or fill material associated with developing the Pebble deposit, and only applies

to those discharges if they result in certain levels of aquatic resource loss or streamflow changes in the SFK, NFK, and UTC watersheds that EPA has determined will have unacceptable adverse effects on anadromous fishery areas. EPA focused on these discharges because those are the types of Section 404 discharges at issue, and discharges associated with other activities are not relevant. With respect to the commenter's contention that EPA has rejected site-specific and relevant data and for EPA's justification for developing this action using the most current information available to the Agency, see EPA's responses to comments 7.0.1 and 4.B.27.

With respect to the commenter's contention that "EPA defined the restrictions in terms of the Agency's desire to forbid any development of the Pebble Deposit, rather than based on the specific impacts to the ecosystem/fisheries," EPA disagrees. As discussed previously, EPA's action does not "forbid any development of the Pebble Deposit." As explained in detail in Section 4 and discussed in EPA's response to comment 4.B.41, the basis for EPA's prohibition and restriction is EPA's evaluation of and determination that the impacts from certain discharges of dredged or fill material will have unacceptable adverse effects on specified anadromous fishery areas in the SFK, NFK, and UTC watersheds. To prevent those unacceptable adverse effects, Section 5 of the FD prohibits the specification of and restricts the use for specification of certain waters in the SFK, NFK, and UTC watersheds as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. Moreover, Section 5 of the FD expressly recognizes that future proposals to develop the Pebble deposit may not be subject to the FD and that such "[p]roposals to discharge dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to [the FD] remain subject to all statutory and regulatory authorities and requirements under CWA Section 404." See also EPA's responses to comments 5.B.1 and 5.B.8.

To the extent the commenter contends that EPA "focused on areas where mine claims are held' rather than where ecological impacts have been demonstrated," the commenter conflates EPA's determinations that certain discharges of dredged or fill material will have unacceptable adverse effects on anadromous fishery areas with EPA's explanation of its Defined Area for Restriction. The Defined Area for Restriction is also not, as the commenter asserts, "based on the Agency's goal of preventing any development of the Pebble deposit." As discussed in Section 5.2.1 of the FD, EPA identified the Defined Area for Restriction by including those areas within the boundaries of the SFK, NFK and UTC watersheds with potential to be a disposal site for the discharge of dredged or fill material associated with mining the Pebble deposit. Thus, the Defined Area for Restriction area is preventing unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds that would result from certain discharges of dredged or fill material associated with developing the Pebble deposit. With respect to the commenter's other assertions about the Defined Area for Restriction, including its

size and for an explanation of EPA’s authority as it related to “defined areas,” including with respect to the commenter’s assertions related to the legislative history of the CWA, see EPA’s responses to comments 2.C.20, 2.C.21, and 2.C.40.

With respect to the commenter’s contention that EPA’s “proposed Defined Area for Restriction is impermissibly broad and vague; aimed at precluding all development within the area rather than avoiding any demonstrated impacts to fish,” EPA assumes the commenter is referring to the restriction itself and responds as such. The commenter contends that EPA’s proposal to “restrict the use of certain waters of the United States within the SFK, NFK, and UTC watersheds for specification as disposal sites for the discharge of dredged or fill material for the construction and routine operation of any future plan to mine the Pebble deposit that would either individually or collectively result in adverse effects similar or greater in nature and magnitude to those associated with the 2020 Mine Plan,” is vague and unworkable because it does not explain how it will be applied to future proposals. Section 5 of the FD clarifies how EPA will evaluate the applicability of the FD, including the information EPA needs to evaluate applicability. See Section 5.2.2 of the FD and Box 5-1. EPA’s revisions to Section 5 ensure that USACE and the regulated community are able to identify, with reasonable certainty, the discharges of dredged or fill material that are subject to the FD. Moreover, prospective project proponents may seek an FD applicability evaluation at any time.

EPA also revised the phrase “individually and collectively” cited by the commenter to “individually and cumulatively” because the term “cumulatively” better describes the intent of the restriction. EPA has included additional information in Section 5.2.2 of the FD to explain the meaning of “individually” and “cumulatively,” as those terms are used in the restriction and affect applicability. For example, EPA explains in Section 5.2.2 of the FD that in evaluating applicability of the restriction EPA will consider losses and streamflow changes associated with developing the Pebble deposit that have occurred or that are authorized to occur regardless of the identity of the proponent. Also see EPA’s responses to comments 5.B.1, 5.B.8, and 5.B.15.

With respect to the other questions raised by the commenter regarding applicability, EPA will consider all information that a future project proponent submits to EPA in seeking an applicability determination, including potential mitigation measures and new technology.

See also EPA’s responses to comments 4.B.27, 4.B.41, 4.C.6, 4.C.7, 4.D.1, 4.E.1, 5.B.1, 5.B.8, and 5.B.15.

5.C Proposed Determination

5.C.1 Ekwok Village Council and Bristol Bay Fishermen's Assoc. (Doc. #0807, p. 1-6)

This letter proposes a restriction and prohibition as follows:

If a proposal for open pit mining requires a discharge permit under section 404 of the Clean Water Act and could cause adverse effects to salmon habitat that supports the portfolio effect within the watershed of the Bristol Bay Fisheries Reserve designated by AS 38.05.140(:t), and if the engineering or operational aspects of such a proposal are so conceptual, vague, ill-defined or undeveloped, that a reasonable likelihood exists that such a proposal would significantly affect such habitat, then EPA shall implement a precautionary approach by (1) identifying undesirable outcomes, and (2) shifting the burden of proof by prohibiting such discharges to prevent such outcomes, and requiring the applicant to produce (a) final detailed engineering designs and plans for operation, mitigation, response to unforeseen events, and closure, and (b) final field studies and documentation necessary to prove, by either clear and convincing evidence or beyond a reasonable doubt as the Administrator may determine, that the project will not adversely impact fine-scale habitat diversity, fine-scale genetic diversity, fine-scale immunological diversity, and fine-scale population structures that result in the portfolio effect.

This will rely on regulation, case law, and EPA documents as providing the rationale for such a proposed restriction and prohibition.

DISCUSSION

A. The definition of unacceptable adverse effect is flexible, draws upon EPA's expertise and judgment, and requires only a "reasonable likelihood" that unacceptable adverse effects will occur - not absolute certainty but more than mere guesswork.

The regulations which implement section 404(c) define an "unacceptable adverse effect" in terms of an "impact on an aquatic or wetland ecosystem which is likely to result in significant degradation" of certain resources or uses. 40 C.F.R. § 231.2(e) (*italics added*). In *Trout Unlimited v. Pirzadeh*, 1 F.4th 738 (9th Cir. 2021), the Ninth Circuit explained:

Whether "unacceptable" adverse effects are "likely" is a flexible standard that draws considerably on the agency's expertise and judgment. Cf. 44 Fed. Reg. at 58078 ("[W]hat is required is a reasonable likelihood that unacceptable adverse effects will occur-not absolute certainty but more than mere guesswork.").

1 F.4th at 759 (*italics added*); see also 2022 PD, at 4-2 ("[b]ecause 404(c) determinations are by their nature based on predictions of future impacts, what is required is a reasonable likelihood that unacceptable adverse effects will occur - not absolute certainty but more than mere guesswork" (citing 44 FR 58078)).

B. A restriction or prohibition which uses the precautionary approach can be based on a reasonable likelihood that an overly conceptual design or operation, or lack of field studies and documentation, will result in unacceptable adverse effects on diversity that creates the portfolio effect.

1. The precautionary approach can be an element in such a restriction or prohibition.

On August 5, 2022, I submitted comments on behalf of EVC and BBFA, in which I urged that EPA consider making the precautionary approach an element in appropriate numerical and non-numerical prohibitions and restrictions. I wrote:

The Alaska Board of Fisheries, in its Policy for the Management of Sustainable Salmon Fisheries at 5 AAC 39.222, has elaborated in detail how the Board of Fisheries and the Alaska Department of Fish and Game should use the precautionary approach to protect salmon fisheries and habitat. Both the precautionary approach and the definition of "unacceptable adverse effect" at 40 C.F.R. § 231.2(e) involve the likelihood of outcomes. [The term "unacceptable adverse effect" is defined for purposes of § 404(c) in terms of an "impact on an aquatic or wetland ecosystem which is likely to result in significant degradation" of certain resources or uses. 40 C.F.R. § 231.2(e).] Therefore, EPA's staff should be able to use the precautionary approach as an element in some prohibitions or restrictions. Doing so should reflect "the agency's expertise and judgment" that "a reasonable likelihood" exists that unacceptable adverse effects will occur. See *Trout Unlimited v. Pirzadeh*, I F.4th 738, 759 (9th Cir. 2021). That seems the case particularly in light of the greater and improving understanding of the portfolio effect. [August 5, 2022 Comments at 26 (full citation added).]

The State's "Policy for the Management of Sustainable Salmon Fisheries" at 5 AAC 39.222(c)(5) provides that-

in the face of uncertainty, salmon stocks, fisheries, artificial propagation, and essential habitats shall be managed conservatively as follows:

(A) a precautionary approach, involving the application of prudent foresight that takes into account the uncertainties in salmon fisheries and habitat management, the biological, social, cultural, and economic risks, and the need to take action with incomplete knowledge, should be applied to the regulation and control of harvest and other human-induced sources of salmon mortality; a precautionary approach requires

(i) consideration of the needs of future generations and avoidance of potentially irreversible changes;

(ii) prior identification of undesirable outcomes and of measures that will avoid undesirable outcomes or correct them promptly;

(iii) initiation of any necessary corrective measure without delay and prompt achievement of the measure's purpose, on a time scale not exceeding five years, which is approximately the generation time of most salmon species;

(iv) that where the impact of resource use is uncertain, but likely presents a measurable risk to sustained yield, priority should be given to conserving the productive capacity of the resource;

(v) appropriate placement of the burden of proof, of adherence to the requirements of this subparagraph, on those plans or ongoing activities that pose a risk or hazard to salmon habitat or production;

(B) a precautionary approach should be applied to the regulation of activities that affect essential salmon habitat. [Italics added]

The Policy defines at 5 AAC 39.222(c)(1)(A)(iv) states that "essential habitats include spawning and incubation areas, freshwater rearing areas ... and migratory pathways." That is consistent with protecting fine-scale habitat diversity as the foundation of fine-scale genetic diversity, fine-scale immunological diversity, and fine-scale population structures that result in the portfolio effect, as discussed below.

Our proposed restriction or prohibition, stated at the outset, relies on (1) prior identification of undesirable outcomes and measures to avoid and correct them, and (2) appropriate placement of the burden of proof.

2. An overly conceptual design and operation, or lack of field studies and documentation, any of which can jeopardize the portfolio effect should trigger a restriction or prohibition that uses the precautionary approach.

a. EPA recognizes the risks associated with overly conceptual designs and operations and lack of field studies and documentation.

EPA's comments on the draft EIS in 2019, and the 2022 PD, provide examples of the sort of factual circumstances in which the precautionary approach can be an appropriate element in a 404(c) determination that draws upon the expertise and judgment of EPA to determine that, if project designs and operations are overly conceptual, or there is a lack of field studies and documentation, then a reasonable likelihood exists that unacceptable adverse effects will occur when the fine-scale aspects of the portfolio are at issue.

In its 2019 comments, EPA took issue with the overly conceptual designs and operational plans, and the lack of documentation necessary to support, the Pebble Limited Partnership's proposal to develop the Pebble deposit. EPA wrote:

Project Description and Mitigation Details.

The DEIS and supporting reference information acknowledge that key aspects of the Pebble Project are at a conceptual level (i.e., early or initial stage) of design and development. Critical but conceptually developed project components include: the open pit mine dewatering system; the dams retaining the mine's tailings and main water management pond; the collection, pumpback, and monitoring systems for managing seepage from the TSFs and main water management pond; and the closure water

treatment plant. Critical plans that are yet to be developed or are only conceptually described in the DEIS include plans for: mine reclamation and closure; environmental monitoring; adaptive management; tailings and waste rock characterization and management; fugitive dust control; and strategic timing of water discharges.

More detailed versions of these project components and plans, however, are critical to the evaluation of environmental impacts, alternatives and mitigation. Without more detail, many of the predictions associated with these components and plans in the DEIS do not appear to be fully supported based on the current level of documentation. Given the scale of the project and importance of the aquatic resources in the Bristol Bay watershed, we recommend including more developed designs and plans in the EIS to provide a level of detail that will allow for more meaningful disclosure of the project's potential impacts and the effectiveness of its pollution control infrastructure and plans that are important for environmental protection and mitigation. [EPA Comments on Pebble DEIS, Chris Hladick, EPA Reg. 10 to Shane McCoy, US Army Corps of Engineers, Alaska District, July 1, 2019, p. 2 (Italics added), available at <https://www.regulations.gov/document/EPA-R10-0W-2022-0418-0068> (visited Sept. 6, 2022).]

In the 2022 PD at 6-12, EPA similarly took issue with the conceptual nature of the design and function of the tailings facilities as set forth in the final EIS.

While the FEIS assesses impacts of a partial breach of the pyritic TSF, as discussed above, it does not quantify or model the extent of impacts that could be caused by a catastrophic failure of the pyritic or bulk TSF dams. USACE determined that a full breach analysis was not necessary because it determined that the probability that a full breach could occur is very remote based on the tailings management plans and TSF designs.

However, EPA believes there could be uncertainty with this conclusion due to the conceptual nature of the TSF designs, potential future changes to the TSF water balances due to climate change, the possibility that design or operational changes could occur during implementation, and the very long time frames over which the bulk TSF dams would need to be maintained. In addition, the FEIS identifies that there is uncertainty associated with the ability of the bulk tailings to drain sufficiently, which would result in the majority of the tailings remaining in a saturated condition and a higher phreatic surface than assumed in the main dam drainage design. The FEIS identifies that this could be monitored during operations and corrected by changes to designs of future dam raises. The FEIS acknowledges that the common factor in all major TSF failures has been human error, including errors in design, construction, operations, maintenance, and regulatory oversight. FEIS Appendix K4.27 includes a review of recent tailings dam failures including Mount Polley (Canada, 2014), Fundao (Brazil, 2015), Cadia (Australia, 2018), and Feijao (Brazil 2019). Some of these failures have caused severe environmental damage and fatalities.

b. EPA recognizes the need to protect the portfolio effect.

Regarding the portfolio effect, the 2022 PD, at ES-11, 3-38 - 3-48, 4-9-4-11, 4-18, shows that the scientific literature has progressed in recent decades, particularly in the last decade, and continues to evolve, with respect to how fine-scale habitat diversity, fine-scale genetic diversity, and fine-scale immunological diversity [The 2022 PD mentions immunological diversity only in passing, so our comments of June 23 cited relevant literature provided by Dr. Patty Zwollo, who operates the fisheries research lab at the College of William and Mary and has published on immunological diversity in sockeye salmon in Alaska.] create the fine-scale population structures upon which the portfolio effect of Pacific salmon depends and sustains the salmon fisheries. I believe that the most useful summary in the 2022 PD occurs at pp. 3-47 - 3-48, which says:

The potential for fine-scale population structuring of salmon fisheries, particularly in terms of Sockeye and Coho salmon, exists throughout the entire Bristol Bay watershed. Finer-scale habitats can sustain unique, genetically distinct populations, each of which helps to maintain the integrity of overall salmon stocks across the Bristol Bay watershed and contributes to the overall resilience of these stocks to perturbation. For example, Sockeye Salmon that use spring-fed ponds and streams as close as approximately 0.6 mile (1 km) apart exhibit differences in traits (e.g., spawn timing, spawn site fidelity, and productivity) that suggest they may comprise discrete populations (Rand et al. 2007, Ramstad et al. 2010, Quinn et al. 2012). Genetic population structure also occurs at a fine geographic scale for Coho Salmon, with many populations found in small first and second-order headwater streams (Olsen et al. 2003). The ability of Bristol Bay to sustain diverse salmon populations is, therefore, dependent on sustaining the viability of the vast network of unique habitats at small spatial scales across the landscape. This suggests that even the loss of a small population within the Bristol Bay watershed's overall salmon populations may have more significant effects than expected, due to associated loss of genetic and phenotypic diversity of a discrete population (Schindler et al. 2010, Moore et al. 2014, Waples and Lindley 2018).

In summary, a substantial body of research supports the conclusion that a diversity of habitats is necessary for maintaining locally adapted populations that create a stock portfolio of individual species. The multiple, genetically distinct populations of Sockeye Salmon that have been documented in the SFK, NFK, and UTC watersheds contribute to the region's wild salmon portfolio. It is clear from the evolving understanding of the stabilizing effects of the salmon portfolio that the conservation of habitat diversity, which leads to locally adapted population diversity across the landscape, is critical to achieve and maintain the sustainability of Bristol Bay's salmon populations.

EPA Response

EPA agrees with the commenter that the Agency's CWA Section 404(c) regulations provide that "unacceptable adverse effect" means the "impact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies (including surface or ground water) or significant loss of or damage to fisheries,

shellfishing, or wildlife habitat or recreation areas.” 40 CFR 231.2(e).¹⁷ Because “CWA Section 404(c) determinations are by their nature based on predictions of future impacts,” 44 FR 58078, EPA also agrees that EPA’s unacceptable adverse effects determinations draw upon the Agency’s expertise and judgment and requires only a “reasonable likelihood that unacceptable adverse effects will occur - not absolute certainty but more than mere guesswork.” *Id.*

EPA disagrees with the commenter that EPA can merely identify “undesirable outcomes” and that EPA should or can “shift the burden of proof.” EPA must establish a basis for any determination of unacceptable adverse effects under CWA Section 404(c). See 44 FR 58080. It is also unnecessary for EPA to, as the commenter suggests, require applicants “to produce (a) final detailed engineering designs and plans for operation, mitigation, response to unforeseen events, and closure, and (b) final field studies and documentation necessary to prove, by either clear and convincing evidence or beyond a reasonable doubt as the Administrator may determine, that the project will not adversely impact fine-scale habitat diversity, fine-scale genetic diversity, fine-scale immunological diversity, and fine-scale population structures that result in the portfolio effect.” Because EPA’s CWA Section 404(c) determinations, including the FD, limit USACE’s ability to specify disposal sites for certain discharges within defined areas, USACE is already foreclosed from issuing a CWA Section 404 permit to discharge dredged or fill material associated with mining the Pebble deposit into waters of the United States within the Defined Area for Prohibition or the Defined Area for Restriction if the discharges are subject to the FD. Prospective project proponents may seek an FD applicability evaluation at any time and Section 5 of the FD clarifies how EPA will evaluate the applicability of the FD and describes the data EPA needs to evaluate applicability (see Box 5-1).

Section 4 of the FD provides the basis for EPA’s determination that certain discharges of dredged or fill material from developing the Pebble deposit will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. Section 5 of the FD describes the defined area for prohibition and the defined area for restriction, within which EPA’s action limits USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. EPA has explained why it limited its evaluation of unacceptable adverse effects to certain discharges. See EPA’s responses to comments 7.0.1 and 4.B.27. EPA’s FD is consistent with, and supported by, the science and technical information cited by the commenter.

¹⁷ 40 CFR 231.2(e) also provides that “[i]n evaluating the unacceptability of such impacts, consideration should be given to the relevant portions of the section 404(b)(1) guidelines (40 CFR part 230).

5.C.2 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 17-23)

II. PROHIBITIONS AND RESTRICTIONS APPLICABLE TO FUTURE MINE PLANS SHOULD BE BASED ON THE FINE-SCALE FINDINGS RELATED TO THE PORTFOLIO EFFECTS AND NOT ON THE 2020 MINE PLAN.

The 2022 PD has to be redone. My letter of June 23, 2022 explains that basing restrictions of discharges associated with future mine plans on unacceptable adverse effects caused by the 2020 Mine Plan lacks a rational connection to the factual findings about the portfolio effect and is contrary to those findings because they stress the importance of maintaining habitat diversity, genetic diversity, and population structure at far finer scales than the levels of harm caused by the 2020 Mine Plan. Instead, EPA should base prohibitions and restrictions applicable to future mine plans on the importance of maintaining fine-scale habitat diversity, fine-scale genetic diversity, and fine-scale immunological diversity which created the fine-scale population structures upon which the portfolio effects is based and sustains the fisheries.

That point has an additional dimension. In 2021 and early 2022, some who purport to oppose Pebble mine floated ideas for legislation which was deceptive in that it appeared to offer hope for conserving the watershed of the Bristol Bay Fisheries Reserve but in fact included four new scenarios for developing Pebble mine, each of which would depend on basing the restrictions not on the fine-scale aspects of the portfolio effect but on increasing the limits over those of the 2014 PD, as would occur by basing them on the 2020 Mine Plan. These four new scenarios would allow other entities to join with or step into the shoes of PLP, revise the mine plan to be within the increased limits, and apply for and obtain a § 404 permit to build Pebble mine under a future federal administration favorable to it. Each of these four new scenarios could make EPA's use of its 404(c) authority more difficult with respect to such a revised mine plan. Therefore, EPA should also reject basing restrictions on the 2020 Mine Plan because they facilitate such legislative ideas and undermine EPA's 404(c) authority. Accordingly, we recommend, through EPA to the Administration, alternative legislation (Attachment A) that would use the appropriations process to underwrite voluntary, conservation agreements, land exchanges, and acquisitions, to conserve the watershed of the Bristol Bay Fisheries Reserve.

A. The legislative ideas would have created four new scenarios to develop Pebble mine, all of which depend on increasing the limits substantially over the 2014 PD.

1. Introduction to the legislative ideas and their nexus with the 2022 PD.

Superficially, the legislative ideas were to provide that if the State of Alaska offers to sell to the United States the State's interest in locatable minerals in state-patented and tentatively approved land within the Bristol Bay Fisheries Reserve or its watershed (the drafting is imprecise), then the Secretary of the Interior shall (1) accept the offer, (2) pay \$5 billion dollars to the State apportioned for certain purposes and payable in installments, and (3) establish within 180 days of the offer a "Bristol Bay Future Trust" under the Government Corporation Control Act which will require the Trust to submit to the President a proposed budget each fiscal year for the congressional appropriations process. The conveyance upon

full payment would be contingent on a "condition precedent" that the State terminates the mining claims and any other rights of PLP to commercially extract locatable minerals from the Pebble deposit.

Although such ideas appear directed at conserving the watershed of the Bristol Bay Fisheries Reserve, they would create at least four new scenarios to develop Pebble mine.

(1) Pursuant to a statute based on these ideas, the Secretary and the Board of the Trust would be exempted from federal ethics regulations which prohibit a federal employee from accepting gifts from entities with which their agency does business. Therefore, PLP could give its mining claims to the Trust, or to the Secretary on behalf of the Trust, and PLP and the Trust could establish a business relationship, such as a contractual relationship, joint ownership, a partnership, or some other joint venture, to develop Pebble mine.

(2) Pursuant to a statute based on these ideas, PLP could sell its mining claims to the Trust. Because it is established under the Government Corporation Control Act, the Trust could avail itself to the annual budget and appropriation process to secure federal funds to pay for the mining claims and develop Pebble mine.

(3) Pursuant to a statute based on these ideas, the State would terminate PLP's mining claims but not complete the conveyance, and would rescind the offer. The State would then enter into a "Cooperative Resource Management or Development Agreement" under AS 38.05.027 with the Trust allowing it to step into the shoes of PLP to develop Pebble mine.

(4) Pursuant to a statute based on these ideas, the State would terminate PLP's mining claims but not complete the conveyance, and would rescind the offer. In the event that Congress extinguishes the Trust or repeals the statute based on these ideas, the State would then enter into a "Cooperative Resource Management or Development Agreement" under AS 38.05.027 with some other corporation allowing it to step into the shoes of PLP to develop Pebble mine.

In each of these four new scenarios, the entities involved could revise the 2020 Mine Plan to be within the increased limits of the 2022 PD, and apply for and obtain a discharge permit from a future federal administration favorable to a Pebble mine. Furthermore, the entities involved could subsidize the planning, exploration, permitting, and development of a Pebble mine by using (1) federal funds that would be directly available to the Trust through the annual federal budget and appropriation cycle, or (2) federal funds paid to the State for a statewide economic development fund that would fund projects such as Pebble mine. Funds appropriated to the Trust could even be used to purchase PLP's mining claims, so that the Trust could develop Pebble mine.

A combined effect of the increased limits in the 2022 PD and these legislative ideas is that for three reasons EPA could be less likely to exercise its 404(c) authority over a future revised mine plan. First, an entity with ties to Bristol Bay, such as the Trust created as a Government corporation, or some other corporation with ties to the Bristol Bay watershed, could already be involved in revising the mine plan to be within the limits of the 2022 PD and seeking a discharge permit necessary to develop Pebble mine. That could make it less likely that EPA would invoke its § 404(c) authority. Second, federal funds derived

from a statute based on these legislative ideas could already have subsidized and could be subsidizing the planning, engineering, exploration, permitting, and development of a Pebble mine. That, too, could make it less likely that EPA would invoke its § 404(c) authority, particularly if the Trust had used federal funds to purchase PLP's claims in order to develop the mine. Third, the increased limits imply that such a revised mine plan should not be subject to § 404(c). In these respects, the combined effect would facilitate Pebble mine, jeopardize all interests associated with the salmon, and erode public confidence in EPA and other public officials.

2. The essential elements of the legislative ideas which create the four new scenarios that could take advantage of the increased limits of the 2022 PD.

The essential elements of the legislative ideas are:

(1) Provide that if the State of Alaska offers to convey to the United States all right, title, and interest of the State in and to locatable mineral interests in all State- patented and tentatively approved land in the Reserve, then the Secretary of the Interior ("Secretary") shall accept the offer and pay \$5 billion to the State, and that the effective date of the conveyance is the latter of (A) the date 50 percent of the payments has been made, and (B) the date on which the Secretary and the State enter into an agreement that provides for the remainder of the payment, which means the State can rescind the offer after less than full payment to the State.

(2) Provide a condition precedent to the conveyance that the State must terminate all existing rights held under the mining laws and any other applicable laws to commercially extract locatable minerals from the Pebble deposit. Provide further that a condition precedent to the conveyance is that the State has relinquished the selection rights of the State to State selected, but not yet conveyed, land containing locatable minerals in the Reserve.

(3) Provide that the \$5 billion dollars is distributed by the Secretary as follows -

(i) 45 percent (\$ 2,250,000,000) to the University of Alaska,

(ii) 40 percent(\$ 2,000,000,000) to the State of Alaska to facilitate economic development including energy and natural resource projects which could include mining projects such as Pebble mine, and

(iii) 15 percent(\$ 750,000,000) to a Bristol Bay Future Fund.

(7) Provide that the Secretary shall withdraw any land or interests in land acquired by the Secretary within the Reserve from operation of the federal mining laws.

(8) Provide that not later than 180 days after the State makes the offer, the Secretary shall establish a Bristol Bay Future Trust ("Trust") "that shall conduct business within the State and the United States" for the following purposes: (A) managing the Fund, (B) making dispositions from it for "sustainable economic development in the Bristol Bay Region" in cooperation with federal, state and local governments, tribes, and Alaska Native Corporations, and (C) ensuring that economic development projects funded through the Fund are compatible with commercial, sport and subsistence fisheries,

wildlife, aquatic habitat and Provide further cultural resources of the Bristol Bay Region, and (D) improving the quality of life of residents of the Bristol Bay Region.

Provide further that the Trust would be a wholly owned Government corporation established by the Secretary under 31 U.S.C. Chap. 91 (the "Government Corporation Control Act"). It will require the Trust to submit a proposed budget to the President, for submission to Congress each fiscal year, as long as the Trust exists, for an appropriation of federal funds, in addition to federal dollars paid to the Fund to be managed by the Trust.

Provide further that the Trust shall be governed by a nine-person board composed of: (A) the state director of the federal Bureau of Land Management, (B) the Commissioner of Natural Resources of the State of Alaska, (C) six who are from, and residents of, six sub-regions of the Bristol Bay Region, to be appointed by the Secretary, and (D) one at-large representative of the region, appointed by the Governor of the State.

Provide further that the members of the Board of the Trust shall not be considered a Federal employee by reason of membership on the Board, except for purposes of ... the Ethics in Government Act of 1978 (5 U.S.C. App.), which creates mandatory, public disclosure of financial, and employment history of public officials as well as their immediate families.

Provide further that the Trust shall prepare biennially a management plan that describes projects which will be carried out using amounts in the Fund to achieve the purposes of the Trust. Section 7(e)(3) provides that projects using amounts in the Fund may not include mining projects for mining locatable minerals. However, the management plans and the exclusion of such mining would not apply to federal monies the Trust obtains through future federal budgets, and nothing would prevent the Trust from being involved in mining operations that do not involve the Fund.

Provide further that the Secretary or the Board of the Trust may solicit and accept donations of money, property, supplies, or services from any entity, including the Pebble Limited Partnership, for purposes of carrying out provisions related to the Trust and the Fund, regardless of whether the applicable donor conducts business with any Federal department or agency. That exempts the Secretary, and the Board of the Trust regardless of the extent to which they are federal employees, from federal regulation at 5 C.F.R. § 2635.202 which prohibits a federal employee from directly or indirectly soliciting or accepting a gift from a "prohibited source." A "prohibited source" is defined at 5 C.F.R. § 2635.203(d) as including "any person who ... [d]oes business or seeks to do business with the employee's agency." A "person" includes a "corporation and subsidiaries it controls." 5 CFR § 2635.102(k). An "agency" includes a government corporation such as the Trust. See 5 C.F.R. § 2635.203, 5 C.F.R. § 2635.102, 5 U.S. Code § 105.

All this results in the four new scenarios for developing Pebble mine summarized at the outset of this section and now stated more fully.

First, exempting the Secretary and the Board of the Trust from federal regulations at 5

C.F.R. § 2635.202 which prohibits a federal employee from directly or indirectly soliciting or accepting a gift from a "prohibited source," which is defined at 5 C.F.R. § 2635.203(d) as including a corporation which does "business or seeks to do business with the employee's agency," allows the Secretary or the Board could accept a gift from PLP of its mining claims at the Pebble deposit for purposes of carrying out provisions related to the Trust. Those purposes include the Trust's purpose of "to improve the quality of life of the residents of the Bristol Bay Region." Therefore, these legislative ideas allow the Trust or the Secretary to accept an otherwise prohibited gift of PLP's mining claims so that PLP and the Trust can join in a business arrangement to develop Pebble mine.

Second, establishing the Trust as a wholly owned Government corporation under the Government Corporation Control Act requires the Trust to submit annually a proposed budget for the annual budget and appropriation process. The Trust could seek and use such federal funds to buy PLP's mining claims, and develop and subsidize Pebble mine.

Third, requiring the Secretary to accept the State's offer, pay \$5 billion apportioned to certain purposes, and establish the Trust within 180 days of the offer, and allowing payment in installments, allows the State to terminate PLP's mining claims at the Pebble deposit as a "condition precedent" to the conveyance upon full payment, gets rid of PLP, and then allows the State to rescind the offer before full payment has been made. At that point, (1) PLP's mining claims are terminated; (2) the Trust is established; (3) the State has not conveyed any of its interest in locatable minerals in the Reserve; (4) the State has received partial payment, presumably about 50 percent of the \$5 billion apportioned pro rata so that the State's economic development fund has received about \$1 billion which can be used to subsidize Pebble mine; and (5) the Trust submits budget requests for congressional appropriations which can be used to subsidize Pebble mine. Then, the Alaska Department of Natural Resources could then enter into a "Cooperative Resource Management or Development Agreement" under AS 38.05.027. It allows the Department to do so "with the federal government, a state agency, a village or municipality, or a person" which includes corporations (see AS 01.10.060). The Department of could do so with the Trust so as to allow it to step into the shoes of PLP to develop Pebble mine.

Fourth, if essentially the same events occur as in the third scenario through termination of PLP's mining claims, and thereafter Congress repeals the Trust or the statute based on the legislative ideas at issue, then that would extinguish the Trust. At that point, the Alaska Department of Natural Resources could then enter into a "Cooperative Resource Management or Development Agreement" under AS 38.05.027 with a corporation, including a Native corporation with ties to Bristol Bay and supportive of Pebble mine, to step into the shoes of PLP to develop Pebble mine.

B. The four new scenarios depend on the nexus of EPA increasing the limits and Congress enacting a statute based on these legislative ideas.

For purposes of discussion, assume as follows:

(1) In 2022, EPA adopts a § 404(c) determination that is essentially the 2022 PD, and compared to the 2014 PD, increases the limits on the four categories of potentially allowable adverse effects used to restrict future mine plans for the Pebble deposit.

(2) In 2023, Congress enacts legislation that embodies the ideas at issue.

(3) In 2024, the Alaska Department of Natural Resources undertakes a validity examination of the mining claims under the marketability test, concludes they are invalid, and requests the Alaska legislature to close the area of the Pebble deposit under AS 38.05.300 to new mining claims, so that (a) the Department can terminate the claims, (b) the legislature can consider waiving AS 38.05.125, and (c) the State can make the offer. The legislature does so, and the State makes the offer, upon which the Secretary is required to accept the offer and establish the Trust within 180 days. The Secretary does so and makes a 50 percent payment of \$2.5 billion, apportioned pro rata as 45 percent (\$1,125,000,000) to the University of Alaska, 40 percent (\$1,000,000,000) to the State to facilitate economic development "including energy and natural resource projects" which could include Pebble mine and other potential mines, and 15 percent (\$375,000,000) to the Fund.

(4) In 2025, PLP conveys by gift its mining claims at the Pebble deposit to the Trust or to the Secretary for the Trust. PLP and the Trust enter into a business arrangement to develop and operate Pebble mine. The State and the Trust enter into an agreement to use the \$1,000,000,000 the Secretary provided to the State to facilitate economic development, "including energy and natural resource projects," to subsidize Pebble mine. PLP and the Trust revise the 2020 Mine Plan to be within the increased limits of the 2022 PD. Thereafter, PLP and the Trust seek and several years later obtain a discharge permit from a future federal administration favorable to Pebble mine. Thereafter, in subsequent years, the Trust uses federal funds obtained in the annual budget cycle to subsidize Pebble mine.

(5) Alternatively, in 2025 same events occur as in paragraph (3), except that PLP sells rather than gives its mining claims at the Pebble deposit to the Trust to develop Pebble mine. Thereafter, in subsequent years, the Trust uses federal funds obtained in the annual budget cycle to subsidize Pebble mine.

(6) Alternatively in 2025, the State terminates PLP's mining claims, and the Secretary and the State fail to reach an agreement which provides for the remainder of the payment. A subsequent and different state legislature rescinds the offer. The Alaska Department of Natural Resources enters into a "Cooperative Resource Management or Development Agreement" under AS 38.05.027 with the Trust by which the Trust steps into the shoes of PLP to develop Pebble mine. The State uses the formerly federal funds from the \$1,000,000,000 the Secretary provided to the State to facilitate economic development to subsidize Pebble mine. Thereafter, in subsequent years, the Trust uses federal funds obtained in the annual budget cycle to subsidize Pebble mine.

(7) Alternatively, in 2025 same events occur as in paragraph (6), except Congress abolishes the Trust or repeals the statute based on the ideas at issue. The Alaska Department of Natural Resources enters into a "Cooperative Resource Management or Development Agreement" under AS 38.05.027 with some other corporation by which the other corporation steps into the shoes of PLP to develop Pebble mine. To

subsidize Pebble mine, the State uses the \$1,000,000,000 the Secretary gave to the State to facilitate economic development. The federal government would probably have to litigate to "claw back" its money, and a federal administration favorable to Pebble might not do so.

(8) Thereafter, PLP - or whoever in the future owns or controls mineral interests at the Pebble deposit – (a) revises the 2020 Mine Plan to be within the increased limits of the § 404(c) determination, which are those of the 2022 PD, and (b) applies for and later obtains a discharge permit from a future federal administration favorable to Pebble mine.

(9) As long as the Trust is involved, it could use federal funds obtained in the annual budget cycle to subsidize a Pebble mine that operates within the limits of EPA's § 404(c) determination that are the same as those of the 2022 PD.

For each of the four new scenarios to work, two events would have to transpire. First, EPA's 404(c) determination would have to increase significantly the limits on potentially allowable adverse effects over those of the 2014 PD. The 2022 PD does so. Second, Congress would have to enact legislation that would: (a) allow the Secretary or the Trust to accept an otherwise prohibited gift from PLP of its mining claims so that PLP and the Trust enter into a business arrangement to develop Pebble mine; (b) allow the Trust to purchase PLP's claims; (c) allow the Trust to step into the shoes of PLP after its claims are terminated; and (d) allow some other corporation to step into the shoes of PLP after its claims are terminated in the event that Congress extinguishes the Trust. The legislative ideas which circulated would do all that.

To reiterate, a combined effect of the increased limits in the 2022 PD and these legislative ideas is that for three reasons EPA could be less likely to exercise its 404(c) authority over a future revised mine plan. First, an entity with ties to Bristol Bay, such as the Trust created as a Government corporation, or some other corporation with ties to the Bristol Bay watershed, could already be involved in revising the mine plan to be within the limits of the 2022 PD and seeking a discharge permit necessary to develop Pebble mine. That could make it less likely that EPA would invoke its § 404(c) authority. Second, federal funds derived from such legislation could already have subsidized and could be subsidizing the planning, engineering, exploration, permitting, and development of a Pebble mine. That, too, could make it less likely that EPA would invoke its § 404(c) authority, particularly if the Trust had used federal funds to purchase PLP's claims in order to develop the mine. Third, the increased limits imply that such a revised mine plan should not be subject to § 404(c). In these respects, the combined effect would facilitate Pebble mine, jeopardize all interests associated with the salmon, and erode public confidence in EPA and other public officials.

The point of reiterating is that EPA cannot afford to use its § 404(c) authority in a manner which facilitates such outcomes. EPA must adopt much stricter standards based on science, facts, the precautionary approach in fisheries management, good judgment, and the case law.

EPA Response

See EPA's responses to comments 5.C.1, 5.C.41, and 7.0.1. Proposed legislation and legislative ideas are outside the scope of this CWA Section 404(c) action.

5.C.3 World Wildlife Fund (WWF) (Doc. #0138, p. 2)

As described in the Proposed Determination published on May 26, 2022, all available data confirm that the 2020 Pebble Mine Plan, with its associated discharge of dredged or fill material for the construction and routine operation, will result in unacceptable adverse effects on anadromous fishery areas in the South Fork Koktuli River (SFK), North Fork Koktuli River (NFK), and Upper Talarik Creek (UTC) watersheds. Because of these findings and the associated unmitigable risks to the Nushagak and Kvichak Rivers, the only reasonable course of action is to prohibit and restrict the use of these waters as disposal sites. We encourage the EPA to complete the process as swiftly as possible, and we are committed to assisting you and your staff in any way possible to achieve that goal.

EPA Response

See EPA's response to comment 1.B.1.

5.C.4 World Wildlife Fund (WWF) (Doc. #1739, p. 1)

Because of these findings and the associated unmitigable risks to the Nushagak and Kvichak Rivers, the only reasonable course of action is to prohibit and restrict the use of these waters as disposal sites. We encourage the EPA to complete the process as swiftly as possible, and we are committed to assisting you and your staff in any way possible to achieve that goal.

EPA Response

See EPA's response to comment 1.B.1.

5.C.5 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 9)

[T]he PD is insufficient by considering impacts to only the streams directly connected to the footprint described in Pebble Limited Partnership's (PLP's) 2020 Mine Plan (hereafter referred to as the Mine Plan)—namely the North Fork Koktuli (NFK), South Fork Koktuli (SFK) and to a far lesser degree, Upper Talarik Creek (UTC). As the PD acknowledges and according to clear indications by PLP and others, the footprint would ultimately expand beyond the currently proposed Mine Plan to include at least the entire known ore body and likely beyond. The PD also fails to consider impacts of supporting infrastructure described in the Mine Plan that would inordinately multiply impacts of the footprint alone, including the road, gas pipeline, and deepwater port. Impacts of infrastructure expand unacceptable adverse effects far beyond NFK, SFK, and UTC well into other Kvichak drainage watersheds, and across the Bristol Bay divide into Cook Inlet where salmon populations already suffer declines resulting from multiple stressors. Moreover, the PD neglects to consider impacts of the many

surrounding mine claims that would be far more likely to be explored and developed once infrastructure is in place. Indeed, exploration of at least one adjacent claim (the Groundhog claim in the Chulitna River watershed) has undergone some exploration. Construction and use of infrastructure and exploration and development of adjacent claims would cause direct adverse effects extending into the Chulitna watershed that flows into Lake Clark National Park, Lower Talarik Creek, Kaskanak Creek, and the Stuyahok Rivers, all of which have documented anadromous salmon populations despite the majority of streams never being sampled for fish presence. The PD also fails to adequately consider inevitable accidents and spills resulting from mine construction and operation. In so doing, the PD underestimates unacceptable adverse effects by untold orders of magnitude.

EPA Response

See EPA's responses to comments 4.B.27, 4.B.50, 4.J.6, and 5.B.19. See also Section 2 of the FD.

5.C.6 United Tribes of Bristol Bay (Doc. #0615, p. 2)

The majority of Alaskans support EPA action to end the threat of Pebble and want to see Bristol Bay permanently protected. The Revised Proposed Determination is a good first step but should be strengthened to truly prevent the storage or disposal of mine waste from the entirety of the Pebble deposit, not just limit its development based on past iterations of mine plans. The EPA's action must protect several critical sub watersheds: the North Fork Kaktuli, South Fork Kaktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon. The 404(c) action must address downstream impacts to provide lasting protections to the region's headwaters.

EPA Response

See EPA's response to comment 1.B.1. In addition, Section 5 of the FD, which describes the prohibition and restriction, was revised in response to comments to provide additional clarification. See EPA's responses to comments 5.A.1, 5.B.1, 5.B.8, and 5.B.15.

5.C.7 United Tribes of Bristol Bay (UTBB) (Doc. #0823, p. 6)

II. THE UNITED TRIBES OF BRISTOL BAY SUPPORTS ROBUST PROTECTIONS FOR THE HEADWATERS OF THE BRISTOL BAY WATERSHED.

UTBB supports EPA action to end the threat of Pebble and wishes to see Bristol Bay permanently protected. The section 404(c) action should provide protections that prevent Pebble, and other potential large mining operations like it, from storing or disposing of mining waste at the headwaters of the Bristol Bay fishery, including the sub watersheds of the North Fork Kaktuli, South Fork Kaktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon and are under threat from developing the Pebble Deposit. As such, UTBB recommends that EPA adopt the below described amendments to the proposed section 404(c) action and encourage that they be incorporated into any Recommended Determination published by the Region 10 Administrator.

EPA Response

See EPA's response to comment 4.B.27.

5.C.8 Midgard Environmental Services LLC (Doc. #0616, p. 2)

Comment #1 - I strongly support the proposed determination to prohibit and restrict the use of certain waters in the Bristol Bay watershed as a disposal site for the discharge of dredged or fill material associated with the Pebble ore body. Given the very large inherent and unavoidable impacts to wetlands and streams associated with open pit mining in this environmental setting, the prohibition of dredge and fill activities within the proposed 2020 open pit footprint is in particular fully justified (see comment #2). The broader area of restriction is also well justified given the environmental and commercial importance, and extreme sensitivity of the SFK, NFK and UTC watersheds. A recommended determination should be prepared for review by the Assistant Administrator for the Office of Water and a final determination should be issued as soon as possible.

EPA Response

See EPA's response to comment 1.B.2.

5.C.9 Earthworks Action (Doc. #1748, p. 1)

The 404(c) protections should prevent Pebble, and other potential large mining operations like it, from storing or disposing of mining waste in Bristol Bay's headwaters. The EPA's action must protect several critical sub watersheds: the North Fork Koktuli, South Fork Koktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon.

EPA Response

See EPA's responses to comments 1.B.1 and 4.B.27.

5.C.10 Mass Mailing Campaign (Doc. #2549, p. 1)

In order to do so, the outcome of this process must include protections for several watersheds critical to the productivity of Bristol Bay, including the North Fork Koktuli, South Fork Koktuli and Upper Talarik Creek, all of which are under threat from Pebble and other proposed largescale mines.

EPA Response

See EPA's responses to comments 1.B.1 and 4.B.27.

5.C.11 Backcountry Hunters & Anglers (BHA) (Doc. #1749, p. 1)

The EPA's action must include protections for several critical watersheds including: the North Fork Koktuli, South Fork Koktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon and are under threat from Pebble and other large-scale mines like it.

EPA Response

See EPA's responses to comments 1.B.1 and 4.B.27.

5.C.12 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 13)

Comments regarding the approach used to delineate the Defined Area for Prohibition and the Defined Area for Restriction and whether there are other factors or approaches EPA Region 10 should consider in delineating these areas.

The differences between "prohibition" and "restriction" are outside my area of expertise. However, given the number of claims adjacent to and nearby the Pebble deposit, and the similar nature of area streams and salmon use, protections should be expanded beyond NFK, SFK, and UTC to include at least the Chulitna River (in which the Groundhog Claim is currently undergoing active exploration), The Stuyahok River, Kaskanak Creek, and Lower Talarik Creek. Moreover, in light of well documented impacts of roads, protections should also be expanded to include watersheds crossed by the proposed road corridor.

EPA Response

See EPA's response to comment 5.B.19 regarding the size of the areas protected in the FD.
See also EPA's responses to comments 4.B.27 and 4.B.50.

5.C.13 Commercial Fishermen for Bristol Bay (CFBB) (Doc. #2064, p. 1)

We specifically call for CWA § 404(c) action that provides comprehensive protections which prevent Pebble, and other potential large-scale mining operations like it, from storing or disposing of mining waste at the headwaters of the Bristol Bay fishery, including the sub watersheds of the North Fork Kuktuli, South Fork Kuktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon and are under threat from developing the Pebble deposit.

EPA Response

See EPA's responses to comments 1.B.1, 1.B.2, and 4.B.27.

5.C.14 Bristol Bay Defense Fund (Doc. #2661, p. 1)

The EPA's action must protect several critical Bristol Bay subwatersheds: the North Fork Kuktuli, South Fork Kuktuli, and Upper Talarik Creek-all of which support the productivity of Bristol Bay's wild salmon and are under threat from Pebble and large-scale mines like it.

EPA Response

See EPA's responses to comments 1.B.1, 1.B.2, and 4.B.27.

5.C.15 Mass Mailing Campaign (Doc. #2565, p. 1-2)

The 404(c) protections should prevent Pebble, and other potential large mining operations like it, from storing or disposing of mining waste at the headwaters of Bristol Bay. The EPA's action must protect several critical sub watersheds: the North Fork Koktuli, South Fork Koktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon and are under threat from Pebble and large-scale mines like it.

EPA Response

See EPA's responses to comments 1.B.1, 1.B.2, and 4.B.27.

5.C.16 Bristol Bay Native Association (BBNA) (Doc. #0802, p. 2)

BBNA has consistently engaged in dialogue with the EPA. In March of 2012 BBNA requested the EPA to use the 404(c) authority to protect our waters. We reiterate our request for EPA to use this authority to impose restrictions on regulated discharges of dredged or fill material (i.e., mine waste) that would result from mining operations of the Pebble ore deposit. These included the following: 1) a prohibition on discharge of mine waste into salmon habitat; 2) a prohibition on the discharge of mine waste that does not meet testing requirements demonstrating that such material is not toxic to aquatic life; and 3) a prohibition on the discharge of mine waste where runoff or seepage from the waste would require treatment in perpetuity [Bristol Bay Native Association, March 23, 2012 Resolution 2012-04].

While the 2022 RPD is much smaller in scope than our 2012 request, BBNA supports EPA action to end the threat of Pebble and wishes to see Bristol Bay permanently protected. This section 404(c) action should be amended to provide comprehensive protections that prevent Pebble, and other potential large-scale mining operations like it, from storing or disposing of mining waste at the headwaters of Bristol Bay.

EPA Response

The FD limits USACE's ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with mining the Pebble deposit because EPA has determined that such discharges will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds (see Section 4 of the FD). Although EPA did not draw a dividing line below which impacts to water resources are considered acceptable and Section 5 of the FD makes clear that "[p]roposals to discharge dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to [the FD] remain subject to all statutory and regulatory authorities and requirements under CWA Section 404," the discharges that are subject to the FD are limited to those that EPA evaluated. See EPA's response to comment 7.0.1. EPA considered the commenter's request that the Agency prohibit "the discharge of mine waste that does not meet testing requirements demonstrating that such material is not toxic to aquatic life." Such discharges would not

be authorized under the 404(b)(1) guidelines, so a prohibition under Section 404(c) is unnecessary. EPA also considered the commenter’s request that the Agency prohibit discharges that would require treatment in perpetuity. Such a prohibition would be inconsistent with existing approaches that have authorized perpetual water treatment backed by financial assurance at some mines in Alaska and across the country.

See EPA’s responses to comments 1.B.1, 1.B.2, and 4.B.27.

5.C.17 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 19)

Comments regarding whether the discharge of dredged or fill material associated with mining the Pebble deposit should be prohibited, prohibited/restricted as proposed, prohibited/restricted in another manner, or not prohibited/restricted at all. In particular, EPA Region 10 is seeking comment on whether environmental effects associated with the discharge of dredged or fill material from mining the Pebble deposit in amounts other than those proposed in the 2020 Mine Plan (1.3 billion tons of ore over 20 years) could provide a basis for alternative or additional restrictions.

Section 404(c) of the Clean Water Act empowers EPA to prohibit, withdraw, restrict, or deny any dredge and fill projects that pose an “unacceptable adverse effect” on the environment. [33 U.S.C. § 1344(c).] EPA may initiate a Section 404(c) process “whenever” it “has reason to believe” a future discharge is reasonably likely to cause “an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.” [Id.; see also 40 CFR § 231.3(a); Mingo Logan Coal Co. v. EPA (“Mingo Logan II”), 714 F.3d 608, 612–14 & n.2 (D.C. Cir. 2013), remanded to 70 F. Supp. 3d 151 (D.D.C. 2014), aff’d 829 F.3d 710, 729 (D.C. Cir. 2016)

[<https://perma.cc/QL6N-Y7AC>] (describing flexibility afforded by the Clean Water Act regarding when EPA can exercise its Section 404(c) powers).] As one court succinctly put it, “[EPA’s] authority to veto to protect the environment is practically unadorned.” [James City County v. EPA, 12 F.3d 1330, 1336 (4th Cir. 1993).]

Because EPA may issue 404(c) determinations “whenever,” EPA is not tied to specific project plans and can rely on information not only from a permit application but also from pre-and post-permit information and other relevant data. [Mingo Logan II, 714 F.3d at 613.] In its revised Proposed Determination, EPA tied the proposed prohibition and restrictions to PLP’s 2020 Mine Plan and a narrow definition of the Pebble deposit. Although the prohibition and restrictions are fully supported by the science, EPA should not constrict its Final Determination to the 2020 Mine Plan. We urge EPA to issue a Final Determination with strong, durable, and comprehensive protections that protect Bristol Bay not only from the mine plan proposed by PLP in 2020, but also from any large-scale porphyry ore mining with similar or greater ecological impacts.

EPA Response

Section 5 of the FD was revised since the PD in response to comments to provide additional clarification. See EPA’s responses to comments 5.A.1, 5.B.1, 5.B.8, and 5.B.15.

See EPA’s response to comment 5.C.60 regarding the definition of the Pebble deposit for purposes of this FD.

See EPA’s response to comment 4.B.27 regarding why the FD remains focused on discharges associated with developing the Pebble deposit.

5.C.18 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 22-23)

Comments on whether and how EPA Region 10’s proposed action under CWA Section 404(c) should consider discharges of dredged or fill materials beyond those associated with the mine site and include discharges associated with the construction of other mine infrastructure (e.g., port, pipelines, transportation corridors).

Given the unacceptable adverse environmental effects that would result from the construction and operation of the proposed Pebble Mine—including the destruction of thousands of acres of wetlands and one hundred miles of streams—EPA has more than enough justification to support a final 404(c) determination that protects Bristol Bay from large-scale porphyry ore mining on the Pebble deposit.

However, EPA can and should consider all impacts from the entire project and not just those associated with the mine site itself, including both direct and indirect impacts from mining infrastructure. According to mining expert Richard Borden:

[A] disturbance to streams and wetlands that occurs within the SFK, NFK and UTC watersheds associated with Pebble mine development must be accounted for in the proposed restrictions. An acre of wetlands filled for access road development, pipelines or ports is just as damaging as an acre filled for infrastructure construction within the immediate mine footprint.

Any planned direct or indirect disturbance associated with the mine access road, pipelines, powerlines, powerplants, ports, or other ancillary infrastructure that would occur within the defined area for restriction should count against the maximum allowable disturbance calculations whether they occur within the immediate mine footprint or outside of it. [Letter from Richard Borden, Midgard Environmental Services LLC, to Casey Sixkiller, EPA 10 Regional Administrator (Aug. 12, 2022) at 4.]

EPA should restrict all impacts, not just those directly associated with the mine site.

EPA Response

The prohibition and restriction are discussed in Section 5 of the FD. See EPA’s responses to comments 4.B.27, 4.B.50, 5.B.18, and 5.B.19.

5.C.19 United Tribes of Bristol Bay (Doc. #0140, p. 1)

The majority of Alaskans support EPA action to end the threat of Pebble and want to see Bristol Bay protected for good. It is time for the EPA to expedite the 404(c) process and finalize protections this year. The 404(c) protections should prevent Pebble, and other potential large mining operations like it,

from storing or disposing of mining waste at the headwaters of our fishery. The EPA's action must protect several critical sub watersheds: the North Fork Kuktuli, South Fork Kuktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon and are under threat from Pebble and large-scale mines like it. The 404(c) must provide true protections to the headwaters, not just limitations based on past mine plans.

EPA Response

See EPA's responses to comments 1.B.1 and 4.B.27.

5.C.20 Action Network (Doc. #1753, p. 1)

The EPA's action must protect several critical sub watersheds: the North Fork Kuktuli, South Fork Kuktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon and are under threat from Pebble and large-scale mines like it. The 404(c) must provide true protections to the headwaters, not just limitations based on past mine plans.

EPA Response

See EPA's responses to comments 1.B.1 and 4.B.27.

5.C.21 Natural Resources Defense Council et al. (Doc. #0617, p. 2, 3)

[O]ur region couldn't be more united in our call on the EPA that the 404c protections must provide true protections to the headwaters, not just limitations based on past mine plans. ...The Tribes have asked for prohibitions of this type of development in the headwaters since they petitioned the EPA back in 2010. And we have not changed that ask over the last 12 years...[W]e encourage the EPA to think more holistically about the headwaters area.[Statement by Alannah Hurley, UTBB Executive Director, Bristol Bay Leaders call on EPA to finalize comprehensive protections this year (June 1, 2022), [https://www.utbb.org/press-releases.](https://www.utbb.org/press-releases)]

The people of Bristol Bay have been seeking these protections for more than two decades and while this is an important step we need comprehensive protections so that future generations are not left with this threat.[Statement by Gayla Hoseth, BBNA Natural Resources Director, Bristol Bay Leaders call on EPA to finalize comprehensive protections this year (June 1, 2022), [https://www.utbb.org/press-releases.](https://www.utbb.org/press-releases)]

(...)

The indisputable facts, clear science, and extensive administrative record overwhelmingly support a final 404(c) determination that protects Bristol Bay's headwaters from not only the mine plan proposed by PLP in 2020, but any future large-scale porphyry ore mining proposed for the Pebble deposit.

EPA Response

See EPA's responses to comments 1.A.1 and 4.B.27.

5.C.22 Patagonia (Doc. #2061, p. 2)

The 404(c) must provide true protections to the headwaters, not just limitations based on past mine plans. The threat of toxic large-scale hard rock mining, such as the proposed Pebble Mine, will continue to loom over Bristol Bay until real permanent protections are secured for the region.

EPA Response

See EPA's responses to comments 1.B.1 and 4.B.27.

5.C.23 Veto Pebble Mine (Doc. #2557, p. 1)

The Clean Water Act 404(c) process must provide true protections to the headwaters, not just limitations based on past mine plans. Please finish the job and protect Bristol Bay.

EPA Response

See EPA's responses to comments 1.B.1 and 4.B.27.

5.C.24 National Wildlife Federation (Doc. #2067, p. 10-11, 14)

{D. Both the Recommended and Final Determinations should adopt additional and modified restrictions and requirements that will protect the pristine Bristol Bay watershed from any large-scale mine.

The National Wildlife Federation strongly supports the revised PD's clear prohibition of the 2020 Mine Plan and the restrictions that would prohibit mines that would cause ecological impacts similar to those posed by the 2020 Mine Plan. We also support the revised PD's delineation of the geographic scope of Defined Area for Prohibition and the Defined Area for Restriction, both of which are highly reasonable. However, as highlighted throughout these comments, information in the revised PD and in the vast record supporting the revised PD clearly justify: the adoption of more stringent restrictions that will protect the pristine Bristol Bay watershed from any large-scale mine; and additional requirements to ensure that all direct, indirect, and cumulative impacts will be accounted for in determining whether any future mine proposal is prohibited by the Final Determination. To help achieve these goals, the National Wildlife Federation recommends that EPA include at least the four changes outlined below in both the Recommended and Final Determinations.}

(...)

4. Require consideration of the full array of reasonably foreseeable impacts when evaluating whether future mine proposals are prohibited by the Final Determination.

Both the Recommend and Final Determinations should include a specific requirement for EPA to assess the full array of all reasonably foreseeable direct, indirect, and cumulative impacts—including the impacts from mine development and operation and the impacts from the construction and operation of mine infrastructure located outside of the mine site—to determine whether any future mine proposal is

prohibited by the Final Determination. Adding this clear requirement will provide important clarity for future administrations, future mine applicants, and the public.

While it is not necessary to evaluate all of these impacts to determine that the 2020 Mine Plan would cause unacceptable adverse effects, evaluating all of these impacts is the only reasonable approach for determining whether any future mine proposals are prohibited by the Final Determination. Doing otherwise would arbitrarily and inappropriately narrow EPA's analysis of impacts.

EPA Response

See EPA's responses to comment 4.B.50, 5.B.16, and 5.B.18.

5.C.25 National Wildlife Federation (Doc. #2067, p. 5)

The certain and highly significant impacts that would result from any required transportation corridor, in combination with the many other impacts, justify more stringent restrictions to safeguard the Bristol Bay watershed from any large-scale mine.

At an absolute minimum, the Recommended and Final Determinations should clarify that EPA is required to evaluate the impacts of all mine infrastructure including infrastructure located outside of the mine site—and the entirety of the project's direct, indirect, and cumulative impacts—when determining whether any future mine proposal may proceed in light of the Final Determination.

EPA Response

See EPA's responses to comments 4.B.27, 4.B.50, and 5.B.18.

5.C.26 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 21-22)

If the prohibition and restrictions are tied to the 2020 Mine Plan and a narrowly defined Pebble deposit, PLP—or any other mining company—could try to evade them. Mining expert Richard Borden, former Head of Environment for Rio Tinto's Copper, Copper & Diamonds and Copper & Coal Product Groups who has performed environmental, permitting and closure work at over fifty mines, projects and operations, found that EPA's restrictions—so narrowly drafted—are "not well supported from an environmental impact perspective." [Letter from Richard Borden, Midgard Environmental Services LLC, to Casey Sixkiller, EPA 10 Regional Administrator (Aug. 12, 2022) at 4.]

The Pebble ore body is the largest and best defined mineralized zone within a much broader mineralized district. Logically, dredging and filling operations associated with another ore body within the broader mineralized district would have the same impact per acre or stream mile as disturbance associated with the Pebble ore body alone. Unacceptable adverse impacts would be just as harmful if the dredge and fill is generated by some other mine within the SFK, NFK and UTC watersheds. The proposed restrictions should explicitly apply to all mining disturbance within the three watersheds...

This is not just an academic exercise. To directly quote the most recent corporate presentation from Northern Dynasty (Northern Dynasty Minerals LTD, March, 2022 – The Pebble Project; PDF accessed from Northern Dynasty website on 6 June, 2022):

* “A zone of sulphide mineralization is indicated by an induced polarization chargeability anomaly at least 25 km by 7 km in size”;

* “Sulphides and hydrothermal alteration confirmed by drilling that discovered mineralization in zones outside the Pebble deposit”; and

* “There is good potential for a cluster of deposits to occur in the vicinity of Pebble”. [Id.]

EPA found in its 2014 Proposed Determination and Watershed Assessment that mining even a fraction of the size (0.25 billion tons) as proposed in the 2020 Mine Plan could result in “significant and unacceptable adverse effects on ecologically important streams, wetlands, lakes, and ponds and the fishery areas they support.” [2014 Proposed Determination at ES-3-6.] The agency should not now bind its revised Proposed Determination solely to the 2020 Mine Plan and a narrow definition of the Pebble deposit. Instead, EPA should issue a Final Determination that “provides certainty to the people of Bristol Bay that, in the event that PLP decides to re-initiate 404 permitting, any final 404(c) prohibition would not be a dead letter that only applied to a now obsolete mine plan.” [BBNC Comments on the Revised Proposed Determination at Section VII(B)(2).] Further, that restrictions will “focus on particular ecological effects supported by sound science, not just numerical standards developed in response to PLP’s 2020 mine plan” and “will provide protections from a mine similar to that analyzed in the 2014 [Proposed Determination] and the 2014 Watershed Assessment.” [Id. at VII(C)(1).]

We urge EPA to finalize prohibitions and restrictions that protect Bristol Bay’s headwaters not only from the mine plan proposed by PLP in 2020, but also from any future large-scale porphyry ore mine plans substantially similar or greater—not just in scale but in ecological impacts. We further urge EPA to clarify that both the prohibition and restrictions will remain unaffected by any changes in ownership of the mining claims.

EPA Response

See EPA’s responses to comments 4.B.27, 5.C.60, and 7.0.1. Section 4 of the FD provides the basis for EPA’s determination that discharges of dredged or fill material from developing the Pebble deposit will result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. The prohibition and restriction in the FD apply to certain discharges of dredged or fill material into certain waters of the United States that will result in certain aquatic resource losses and changes to streamflow that EPA has determined will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. The prohibition and restriction apply regardless of ownership of mine claims or the identity of the project proponent. Similarly, the geographic boundaries within which the prohibition and restriction are applicable (i.e., the Defined Area for Prohibition and the Defined Area for Restriction, respectively) do

not change based on changes in ownership of mine claims or the identity of the project proponent.

See also EPA's response to comment 5.C.41.

5.C.27 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 22-23)

Pg. 5-2: "The Defined Area for Prohibition is the portion of the mine site footprint for the 2020 Mine Plan within the SFK and NFK watersheds..."

Comment: The prohibition and restriction should extend to Upper Talarik Creek in addition to other surrounding watersheds that are all equally susceptible to impacts from mining, and where mine claims currently exist. These include the Chulitna River, Stuahok River, Kaskanak Creek, Lower Talarik Creek, and the remainder of the Kaktuli River watershed.

EPA Response

See EPA's responses to comments 4.B.27 and 5.B.19.

5.C.28 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 27)

{III. PROMPT AGENCY AND LEGISLATIVE ACTIONS ARE NECESSARY TO KEEP THIS SITUATION FROM BEING COUNTERPRODUCTIVE.

A. EPA should issue a revised 2022 PD that rewrites Chapters 4 and 5 to be much stronger, and engage in a renewed public process that corrects EPA's errors and omissions and their consequences, and allows the public to comment more usefully.

(...)

BBFA and EVC offer ten suggestions for how EPA should rewrite Chapters 4 and 5 of the 2022 PD to be much stronger, issue a revised 2022 PD, and engaged in a renewed public process.}

(...)

8. When the science, facts, the precautionary approach, good judgment, and case law facts justify, EPA should lean toward adopting more prohibitions and restrictions rather than just a few.

A corollary of relying on severability as an aide to resolving this matter is that every time a court severs an unlawful part of a regulation and lets the rest stand creates stability. EPA can enhance stability by employing more, rather than fewer, prohibitions and restrictions, and they should have different natures derived from the science, facts, the precautionary approach, good judgment, and case law. The 2022 PD does not do so. Its four restrictions applicable to future mine plans have the same nature. They are all derived from the effects of the 2020 Mine Plan. If a court overturns as arbitrary and capricious the dividing line that separates unacceptable adverse effects (those which meet or exceed the harms of

the 2020 Mine Plan) from potentially acceptable adverse effects (those which do not meet or exceed the harms of the 2020 Mine Plan) - as I think a court will because that dividing line lacks a rational connection to the factual findings about the portfolio effect and is contrary to those findings which stress the importance of maintaining habitat diversity, genetic diversity, and population structure at far finer scales than the levels of harm caused by the 2020 Mine Plan -- then all four limits will fall, and EPA will have put all its eggs in one basket. It will be forced to start over. Do not put all your eggs in one basket.

EPA Response

Section 4 of the FD provides the basis for EPA’s determination that discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. The prohibition and restriction are discussed in Section 5 of the FD. Although EPA did not draw a dividing line below which impacts to water resources are considered acceptable and Section 5 of the FD makes clear that “[p]roposals to discharge dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to [the FD] remain subject to all statutory and regulatory authorities and requirements under CWA Section 404,” the discharges that are subject to the FD are limited to those that EPA evaluated. The administrative record, which includes extensive scientific information, including information regarding the portfolio effect, supports EPA’s unacceptable adverse effects determinations. See EPA’s responses to comments 4.B.27 and 7.0.1. With respect to severability, see EPA’s response to comment 2.C.1.

5.C.29 Ekwok Village Council and Bristol Bay Fisherman's Association (Doc. #2664-22, p. 19)

And you hid the ball by not including that comparison in chapter six of the proposed determination in 2022. This proposed determination will not protect the Bristol Bay ranges from a revised Pebble Mine plan, that comes in with marginally less harm than the 2020 mine plan. In other words, Pebble will proceed to permitting for a slightly different mine plan, and you will have accomplished virtually nothing with the proposed determination. There are a lot of people who are asking for a more comprehensive approach. We agree. We're asking for stricter standards.

EPA Response

See EPA’s responses to comments 4.B.27 and 7.0.1. Section 4 of the FD provides the basis for EPA’s determination that discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. The prohibition and restriction are discussed in Section 5 of the FD, which has been revised since the PD to provide additional clarification. See also EPA’s responses to comments 5.A.1, 5.B.1, and 5.B.8.

5.C.30 Friends of the Earth US (Doc. #2667-38, p. 89)

I've been working on this Pebble Mine issue with Alannah for almost 20 years, ever since I graduated from this very school in 2004. We need to put the nail on the coffin of Pebble Mine once and for after this comment period.

EPA must strengthen the protections you've proposed. EPA must stop any development of the entire Pebble deposit - not just place limitations based on Pebble's past misleading mine plans. We need full protection of the headwaters of our fishery, permanently, and not leave the door to open - for future developments under a new mine plan. EPA must finalize the strengthen - and strengthen protections by the end of 2022. And EPA must assure that the full deposit will not be developed, and put strict restrictions in the entire watershed, if the intent is to protect their salmon.

EPA Response

See EPA's response to comment 1.B.1. Section 5 of the FD was revised since the PD in response to comments to provide additional clarification. See EPA's responses to comments 5.A.1, 5.B.1, and 5.B.8.

5.C.31 Bristol Bay Native Corporation (Doc. #2667-49, p. 113)

We need you, as soon as possible, to finalize an action that protects the resource that is paramount here, the salmon. And it's not just about stopping the 2020 mine proposal, but it is about stopping future iterations of that proposal.

EPA Response

See EPA's responses to comments 1.B.1 and 5.A.1.

5.C.32 Cook Inletkeeper (Doc. #2664-13, p. 12)

The voices of the region are clear, the tribes, fishermen, and businesses of Bristol Bay have a vision of the future that does not include Pebble Mine. EPA's action is clearly justified and necessary, EPA should use its authority to protect Bristol Bay. However, the proposed determination does not go far enough. The Pebble Mine is a complex project in a highly sensitive area. And the Pebble Limited Partnership has changed the configuration of the mine in its transportation quarter, numerous times over just the past several years Cook Inletkeeper encourages EPA to not be limited by Pebble's latest Hail Mary mining plan, and to safeguard Bristol Bay from future mine plans and new mining companies. The people at Bristol Bay have had the threat of Pebble hanging over their heads for 20 years. Enough is enough, please strengthen and then finalize protections

EPA Response

See EPA's responses to comments 1.B.1, 4.B.27, 5.A.1, 5.B.1, 5.B.8, and 5.C.41.

5.C.33 Cook Inletkeeper (Doc. #2664-18, p. 15)

And I just think that a lot of people who are very engaged in their communities don't have time to continue fighting over this. So while I would like to say that while I am glad that the EPA is moving towards finalizing the 404(c) veto, I would encourage you to make it as comprehensive as possible so that these valuable waters and everything they provide Alaska are truly protected.

(...)

I understand that you have received several requests for extensions for the comment period, and would encourage you not to further delay this decision.

EPA Response

See EPA's responses to comments 1.B.1 and 1.A.142.

5.C.34 Rick Hatford (Doc. #2667-25, p. 63)

We think you can beef it up a little bit. We know you have a very political world. You have a lot that you have to deal with. But we believe that the Proposed Determination is a big step in the right direction. And it can get a little bigger with just minor additions that make it surer for us. But it is the big first step toward permanent protection for Bristol Bay for all generations.

EPA Response

See EPA's response to comment 1.B.1. Section 5 of the FD was revised since the PD in response to comments to provide additional clarification. See EPA's responses to comments 5.A.1, 5.A.7, 5.B.1, 5.B.8, and 5.B.15.

5.C.35 Cassandra Johnson (Doc. #2667-26, p. 64)

But as proposed, this Revised Determination does not provide the whole protections that we've requested for so long. So I urge you to strengthen the 404(c) Revised Proposed Determination, and finalize the - our PD as soon as possible.

EPA Response

Section 5 of the FD was revised since the PD in response to comments to provide additional clarification. See EPA's responses to comments 5.A.1, 5.A.7, 5.B.1, 5.B.8, and 5.B.15.

5.C.36 Daniel Schindler (Doc. #2667-31, p. 72)

So when we move ahead, hopefully, with this 404(c), it has to have serious bite, and has to have serious longevity, because future game playing is going to play out. And this is the opportunity to lock it up for good.

EPA Response

See EPA's response to comment 1.B.1. Section 5 of the FD was revised since the PD in response to comments to provide additional clarification. See also EPA's responses to comments 5.A.1, 5.A.7, 5.B.1, 5.B.8, and 5.B.15.

5.C.37 Delores Larson (Doc. #2667-34, p. 78)

First of all, I'd like to thank the EPA for re-initiating the 404(c) process to protect Bristol Bay from a large scale, toxic large scale mining within our watershed. We have been stressed with the thought of Pebble destroying our livelihoods for nearly two decades. I am respectfully asking EPA not to only finalize protections for Bristol Bay by the end of the year and no later, but to strengthen the prohibitions, and the restrictions, and use your power to protect our watershed for good.

With the way the RPD is written, it still leaves Bristol Bay vulnerable to future mining proposals. We need to be certain that these protections are finalized, so we won't have to worry about Pebble threatening our livelihoods, into the future.

EPA Response

See EPA's response to comment 1.B.1. Section 5 of the FD was revised since the PD in response to comments to provide additional clarification. See also EPA's responses to comments 5.A.1, 5.B.1, and 5.B.8 regarding applicability of the FD.

5.C.38 Kent Mingneau (Doc. #2667-44, p. 102)

But we need to take this further, and stop any development of the entire Pebble deposit. We need full protection of not only the headwaters; we need protection of the streams, and the tundra, as well.

EPA Response

See EPA's response to comment 1.B.1. Section 5 of the FD was revised since the PD in response to comments to provide additional clarification. See also EPA's responses to comments 4.B.27, 5.A.1, 5.B.1, and 5.B.8.

See EPA's response to comment 5.B.19 regarding the size of the areas protected by the FD.

5.C.39 Maria Dosal (Doc. #2667-46, p. 105-106)

As, as an Alaskan and a commercial fisherman, we know how to find and use our resources. We are asking you, the Environmental Protection Agency, to use your resources, find them elsewhere. Don't come here. Please place permanent protections on this area.

I look at the map and the red lines, and I see a small area compared to what Bristol Bay as a whole is. We are asking for more. We want permanent protections for this whole area, for us to survive and thrive.

EPA Response

See EPA's responses to comments 1.B.1 and 5.B.19.

5.C.40 Bristol Bay Regional Seafood Development Association (BBRSDA) (Doc. #2062, p. 8)

First, BBRSDA supports an effort to clarify the definition of the Pebble deposit to allow for a more scientific approach and an evolving understanding of the deposit. BBRSDA agrees that this will lead to a more durable and transparent determination.

EPA Response

See EPA's response to comments 5.C.60.

5.C.41 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 66-67)

D. Region 10 Should Clarify that the Prohibition and Restrictions Will Not Be Affected by Changes in Ownership of the Mining Claims and Permit Applicant

In defining the "disposal site" encompassed by the proposed 404(c) restrictions, Region 10 has explained that the area includes locations "where mine claims are currently held and areas where mine claims are available to represent locations where there is a potential to be a disposal site. [2022 PD, at p. 5-3.] Accordingly, EPA has defined the area for the restrictions "that includes areas within the three watershed boundaries where mine claims are currently held and areas where mine claims are available." [2022 PD, at p. 5-3.] As explained in the preceding section, BBNC agrees with this geographic scope as it is well-founded in the record. However, as BBNC commented to Region 10 in 2014, EPA should clarify that both the prohibition and restrictions will not be affected by changes in ownership of the mining claims. [See enclosed Appx. C, at p. 159 (BBNC comment letter on 2014 PD, at pp. 27-29).]

Ownership of mining claims can change rapidly, particularly where a mine operator is experiencing financial or other challenges, as is true at Pebble. Indeed, the mining claims at and around the Pebble deposit have been far from static. For instance, NDM subsidiaries have over the years expanded and exercised options to acquire mining claims in the region from other mineral exploration companies. [See, e.g., Dave Bendinger, Liberty Star transfers mining claims north of Pebble to Northern Dynasty, ALASKA DISPATCH NEWS (June 6, 2014), available at <http://www.adn.com/article/20140606/liberty-star-transfers-mining-claims-north-pebble-northern-dynasty-0>. See also, NDM, Preliminary Assessment of the Pebble Project Southwest Alaska, prepared by Wardrop (issue date Feb. 17, 2011), available at: <https://www.sedar.com/DisplayCompanyDocuments.do?lang=EN&issuerNo=00003151> (filed on March 22, 2011) [hereinafter "2011 PEA"] (describing PLP's rights circa 2011 to acquire interests in mineral claims by incurring exploration expenditures on behalf of other mineral claim holders – rights which PLP later exercised in acquiring claims from Full Metal Minerals and Liberty Star).] Likewise, some mining claims around the Pebble deposit have been abandoned or relinquished, leaving the potential that some may be restaked. [For example, in December 2013 Liberty Star abandoned hundreds of claims in the Pebble region, from 413 claims down to 54 claims. Liberty Star, News Release—Liberty Star's Big

Chunk Alaska Claims Paid (Dec. 6, 2013), available at <http://www.libertystaruranium.com/2013/12/06/nr-169-liberty-stars-big-chunk-alaska-claimspaid/>. These claims currently have no holder and may be restaked in the future by NDM subsidiaries or other exploration companies.] From 2011 to 2014, PLP's claims and interests in claims were reduced from 3,108 [2011 PEA, at 19. This number of claims includes PLP's direct and indirect holdings of claims in 2011.] to 2,776 active claims, [See enclosed Appx. C, at p. 159 (BBNC comment letter on 2014 PD, at p. 28, n. 173).] and currently stands at 1,840 mineral claims, [NDM, Second Quarter Financial Report for the period ending June 30, 2022 (filed with the SEC Aug. 16, 2022), available at: https://www.sec.gov/Archives/edgar/data/0001164771/000165495422011412/ndm_6k.htm.] leaving many relinquished claims open for potential restaking by new owners. Moreover, the CEO of NDM has noted in public statements that NDM and PLP are unlikely to construct and operate a mine at the Pebble deposit; rather, he anticipates "somebody will come along and take us over." [Ron Thiessen interview on Frank Curzio Show, episode 579 (December 20, 2017), <https://www.curziosearch.com/new-era-northern-dynasty/>.]

In the event that mine claims do change hands, or active PLP mine claims are abandoned or relinquished, it will be critical to the clarity and durability of the 404(c) determination that the legal description of the potential disposal site be considered controlling. Therefore, BBNC requests, as we did in our comment letter on the 2014 PD, that Region 10 state explicitly in the Recommended Determination that mine claim ownership was merely a practical mechanism for narrowing the geographic scope of the restrictions and prohibition, but that the applicability of the restrictions and prohibition is governed by the current legal description.

EPA did responsively modify its description from the 2014 PD to the 2022 PD in that the focus of the defined area for the restrictions changed from "all mine claims owned by NDM subsidiaries in the three watersheds" [2014 PD, at p. 2-18.] to "areas within the three watershed boundaries where mine claims are currently held and where mine claims area available." [2022 PD, at p. 5-3.] As such, EPA recognizes, in the PD Appendix A, that "the ownership status of mine claims could change over time" and that the agency "now believes that both currently held claims and areas where mine claims are available in the SFK, NFK, and UTC watersheds better represent locations that have the potential to be disposal sites associated with mining the Pebble deposit." [2022 PD, Appx. A, p. A-2.] While this recognition is useful and warranted in describing the Defined Area for Restriction, EPA should clarify as well that both the prohibitions and restrictions control within the defined state lands within the watershed boundaries and are not dependent on PLP being the company holding the mineral claims nor submitting the mine plan and permit application.

EPA Response

The prohibition and restriction in the FD apply to certain discharges of dredged or fill material into certain waters of the United States that will result in certain aquatic resource losses and changes to streamflow that EPA has determined will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC

watersheds. The prohibition and restriction apply regardless of ownership of mine claims or the identity of the project proponent. Similarly, the geographic boundaries within which the prohibition and restriction are applicable (i.e., the Defined Area for Prohibition and the Defined Area for Restriction, respectively) do not change based on changes in ownership of mine claims or the identity of the project proponent.

5.C.42 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0136, p. 4)

Representatives of BBFA and Ekwok Village Council (EVC) and I have repeatedly urged EPA Region 10 to consider non-numerical prohibitions as well as numerically-based restrictions or prohibitions such as EPA's four proposed numerical limits in the current 2022 PD. We are concerned that such numerical approaches invite arguments over the accuracy of numerical data and are unlikely to function well in situations involving close calls, data uncertainty, and the like. In our petition and in our comments to date, we have offered at least nineteen specific ideas for how EPA could frame stricter standards or prohibitions. [Our petition offers nine ideas. Our initial comments offer seven more, In EVC-EPA's government-to-government consultation, we offered a one-sentence version of our petition (see option 8 in Appendix A used the government-to-government consultation. In yesterday's conference call, we included the precautionary approach and the no-perpetual-care standard.[We have suggested how to apply a 404(c) determination to Pebble plus four other deposits that would or could use the same sites as a Pebble mine, to the watershed of the Bristol Bay Fisheries Reserve, and to most of the watershed of Bristol Bay.] We have suggested how to apply a 404(c) determination to Pebble plus four other deposits that would or could use the same sites as a Pebble mine, to the watershed of the Bristol Bay Fisheries Reserve, and to most of the watershed of Bristol Bay.] We have also offered at least three specific ideas for how EPA could apply them more broadly than to mining only the Pebble deposit.³ Many other organizations, interest groups and people have also called for broader more comprehensive approaches and stricter standards, but have yet to offer specifics comparable to our efforts to do so. As I said yesterday, all that triggers issues related to requirements for public notice, and issues related to BBFA's request that EPA extend the period for this process so that EPA can go back into the field to address misunderstandings of the current 2022 PD and address potential revisions to it, and so that everyone can comment more effectively.

EPA Response

See EPA's responses to comments 4.B.27, 5.A.2, 5.A.3, 5.A.4, 5.B.13, 5.B.21, 5.C.1, 5.C.2, 5.C.28, 5.C.29, 5.C.43, 5, C.44, and 7.0.1. Section 4 of the FD provides the basis for EPA's determination that certain discharges of dredged or fill material from developing the Pebble deposit will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. The prohibition and restriction are discussed in Section 5 of the FD, which has been revised to provide additional clarification. See also EPA's responses to comments 5.A.1, 5.B.1, and 5.B.8.

5.C.43 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 26)

{III. PROMPT AGENCY AND LEGISLATIVE ACTIONS ARE NECESSARY TO KEEP THIS SITUATION FROM BEING COUNTERPRODUCTIVE.

A. EPA should issue a revised 2022 PD that rewrites Chapters 4 and 5 to be much stronger, and engage in a renewed public process that corrects EPA's errors and omissions and their consequences, and allows the public to comment more usefully.

(...)

BBFA and EVC offer ten suggestions for how EPA should rewrite Chapters 4 and 5 of the 2022 PD to be much stronger, issue a revised 2022 PD, and engaged in a renewed public process.}

(...)

6. EPA should consider making the precautionary approach an element in appropriate numerical and non-numerical prohibitions and restrictions.

The Alaska Board of Fisheries, in its Policy for the Management of Sustainable Salmon Fisheries at 5 AAC 39.222, has elaborated in detail how the Board of Fisheries and the Alaska Department of Fish and Game should use the precautionary approach to protect salmon fisheries and habitat. Both the precautionary approach and the definition of "unacceptable adverse effect" at 40 C.F.R. § 231.2(e) involve the likelihood of outcomes. [The term "unacceptable adverse effect" is defined for purposes of § 404(c) in terms of an "impact on an aquatic or wetland ecosystem which is likely to result in significant degradation" of certain resources or uses. 40 C.F.R. § 231.2(e).] Therefore, EPA's staff should be able to use the precautionary approach as an element in some prohibitions or restrictions. Doing so should reflect "the agency's expertise and judgment" that "a reasonable likelihood" exists that unacceptable adverse effects will occur. See *Trout Unlimited v. Pirzadeh*, 1 F.4th at 759. That seems the case particularly in light of the greater and improving understanding of the portfolio effect.

EPA Response

See EPA's response to comment 5.C.1.

5.C.44 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 25)

{III. PROMPT AGENCY AND LEGISLATIVE ACTIONS ARE NECESSARY TO KEEP THIS SITUATION FROM BEING COUNTERPRODUCTIVE.

A. EPA should issue a revised 2022 PD that rewrites Chapters 4 and 5 to be much stronger, and engage in a renewed public process that corrects EPA's errors and omissions and their consequences, and allows the public to comment more usefully.

(...)

BBFA and EVC offer ten suggestions for how EPA should rewrite Chapters 4 and 5 of the 2022 PD to be much stronger, issue a revised 2022 PD, and engaged in a renewed public process.}

(...)

5. EPA should consider non-numerical prohibitions and restrictions, in addition to those based on numerical limits.

There is no justification for relying only on restrictions that use numerical limits. EPA should assemble staff who can draft and justify potential non-numerical prohibitions and restrictions for consideration by the public. The State has used non-numerical prohibitions, restrictions and standards to protect salmon habitat for decades in the 1984, 2005 and 2013 versions of the Bristol Bay Area Plan for State Lands, Mineral Closing Order 393 (1984), and the Policy for the Management of Sustainable Salmon Fisheries at 5 AAC 39.222. Although Section 404(c) is not a land use planning statute, neither is the state Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222).

EPA Response

See EPA's response to comment 5.C.1. EPA considered a number of potential non-numerical approaches (see, for example, EPA's response to comment 5.C.16), but ultimately the Agency found that because the FD is not prohibiting and restricting all discharges associated with developing the Pebble deposit that including numerical values was important to ensuring this FD is clear and workable.

5.C.45 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (BBFA) (Doc. #0830, p. 5)

A. EPA should use non-numerical approaches to establishing pre-application limits, including situation-specific prohibitions, as well as numerical approaches.

An obvious difference exists between, on the one hand, EVC and BBFA's recommendations for the pre-application portion, and on the other hand, EPA's proposed pre application limits in the 2022 PD and the 2014 PD. EVC and BBFA's recommendations include:

Prohibit discharge into waters (1) managed by State to protect habitat, public access, or for multiple use that includes fish, game, habitat, recreation, or subsistence, or (2) for which a salmon escapement goal has not been met for more than a life cycle of the relevant species, or (3) where the State will deny a permit.

Thus, EVC and BBFA do not rely solely on a numerical approach to establishing limits on discharges of dredged or fill material and include situation-specific non-numerical prohibitions as well as numerical limitations. EPA Region 10 uses solely a numerical approach to limitations.

EVC and BBFA's approach is supported by the Ninth Circuit's conclusion that whether an unacceptable adverse effect is "likely" is a "flexible standard that draws considerably on the agency's expertise and judgment," citing Fed. Reg. at 58078 ("what is required is a reasonable likelihood that unacceptable

adverse effects will occur-not absolute certainty but more than mere guesswork.") 1 F.4th at 759. EPA Region 10, instead, ties itself to a rigid numerical approach that would restrict discharges only if they would cause harm that is "similar or greater in nature and magnitude" to those of the 2020 Mine Plan. 2022 PD at 5-2. Of course, EVC and BBFA's recommended prohibition could be revised to be "prohibit or restrict," but the point is that EVC and BBFA rely on the Ninth Circuit's conclusion that EPA has reasonable flexibility. So, EPA should not exclusively use numerical approaches. Its lawyers should help EPA's scientists, technical staff, and managers understand that the law requires less certainty (e.g., substantial evidence) than confidence intervals (e.g., a 95-percent confidence interval) used in science. Implicitly, EPA Region 10 recognizes our point when it expresses "concern" about the accuracy of methods used to measure "ecosystem flow requirements and predict impacts on downstream anadromous fish habitat," and essentially says it needs flexibility in its numerical approach to make decisions based on "a reasonable minimum approximation of impacts and the best available information." See 2022 PD at 4-32. Likewise, EPA should rely on the flexibility to establish reasonable non-numerical limits. That is why EVC and BBFA offer their example, above, of how EPA can do so by using numerical and non-numerical approaches to establishing reasonable limits or prohibitions necessary to protect aquatic resources and uses.

EPA Response

See EPA's responses to comments 5.C.1 and 5.C.44.

5.C.46 Midgard Environmental Services LLC (Doc. #0616, p. 3-4)

Comment #9 – The discharge of dredged or fill material from mining of the Pebble deposit should be prohibited and restricted as proposed in the Proposed Determination but with three suggested refinements.

The proposed determination states that "discharges of dredged or fill material associated with future plans to mine the Pebble deposit could result in unacceptable adverse effects on anadromous fishery areas anywhere in the SFK, NFK and UTC watersheds if the effects of such discharges are similar or greater in nature and magnitude to the adverse effects of the 2020 Mine Plan.....". I fully agree that the 20-year mine plan evaluated in the FEIS would have unacceptable adverse effects. The proposed restrictions are clearly based on the evaluated 2020 mine plan, are well justified, and therefore do not represent a pre-emptive veto. However, the document is silent about what lesser impacts would be considered acceptable. If the Pebble ore body were developed in a manner that resulted in ten percent fewer impacts (7.6 miles of anadromous fish streams; 82 miles of supporting streams; 1900 acres of wetlands; or flow impacts to 26 miles of anadromous fish streams) would this represent an acceptable adverse impact to the Bristol Bay Watershed? In reality, I believe it would be possible to demonstrate that even half of the impacts predicted by the FEIS would represent unacceptable adverse effects given the extreme sensitivity of the local environment. If there are legal or regulatory reasons to base the proposed restrictions solely on the predicted impacts of the 2020 Mine Plan these should be stated in the text.

The rationale for the defined geographical extent of the “Pebble Deposit” as shown in Figures ES-5 and ES-6 should be detailed within the document. The roughly four by five kilometer area appears to capture the entire 0.3% copper-equivalent shell of the known ore body as defined by drilling (Northern Dynasty Minerals LTD, March, 2022 – The Pebble Project; PDF file accessed from Northern Dynasty website on 6 June, 2022). However the limits of the ore body are not well defined on the east side of the ZG1 Fault and it could potentially extend several kilometers even further to the east. Similarly the ore body may extend further to the north or south at depth (below the deepest drill holes completed to date). Does the area defined on Figures ES-5 and ES-6 account for this uncertainty in ore body extent with the addition of a buffer zone? The Proposed Determination should clearly define what is meant by the “Pebble Deposit”. Does it only include all mineralized rock within the roughly four by five kilometer area; or does it include all potentially ore-grade mineralization that is contiguous with the currently known extent of potentially ore-grade material known as the “Pebble Deposit” even if it extends outside of the four by five kilometer area?

Within the 309 square mile area for restriction, the Proposed Determination would limit the scale of disturbance to streams and wetlands to proscribed limits based on the 2020 Mine Plan and the FEIS. However, as worded these restrictions would appear to only apply to mining and dredge/fill placement directly associated with development of the Pebble deposit. There may be legal reasons for this wording, but it is not well supported from an environmental impact perspective. The Pebble ore body is the largest and best defined mineralized zone within a much broader mineralized district. Logically, dredging and filling operations associated with another ore body within the broader mineralized district would have the same impact per acre or stream mile as disturbance associated with the Pebble ore body alone. Unacceptable adverse impacts would be just as harmful if the dredge and fill is generated by some other mine within the SFK, NFK and UTC watersheds. The proposed restrictions should explicitly apply to all mining disturbance within the three watersheds, or text should be added to explain why this is not possible from a legal or regulatory perspective. This is not just an academic exercise. To directly quote the most recent corporate presentation from Northern Dynasty (Northern Dynasty Minerals LTD, March, 2022 – The Pebble Project; PDF accessed from Northern Dynasty website on 6 June, 2022):

* “A zone of sulphide mineralization is indicated by an induced polarization chargeability anomaly at least 25 km by 7 km in size”;

* “Sulphides and hydrothermal alteration confirmed by drilling that discovered mineralization in 11 zones outside the Pebble deposit”; and

* “There is good potential for a cluster of deposits to occur in the vicinity of Pebble”.

EPA Response

See EPA’s responses to comments 4.B.27, 5.C.60, and 7.0.1. EPA did not draw a dividing line below which impacts to water resources are considered acceptable and the discharges that are subject to the FD are limited to those that EPA evaluated. Section 5 of the FD makes clear that “[p]roposals to discharge dredged or fill material into waters of

the United States associated with mining the Pebble deposit that are not subject to [the FD] remain subject to all statutory and regulatory authorities and requirements under CWA Section 404.”

Section 5 of the FD has been revised to include the Agency’s rationale for the description of the Pebble deposit boundary.

5.C.47 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 27)

{III. PROMPT AGENCY AND LEGISLATIVE ACTIONS ARE NECESSARY TO KEEP THIS SITUATION FROM BEING COUNTERPRODUCTIVE.

A. EPA should issue a revised 2022 PD that rewrites Chapters 4 and 5 to be much stronger, and engage in a renewed public process that corrects EPA's errors and omissions and their consequences, and allows the public to comment more usefully.

(...)

BBFA and EVC offer ten suggestions for how EPA should rewrite Chapters 4 and 5 of the 2022 PD to be much stronger, issue a revised 2022 PD, and engaged in a renewed public process.}

(...)

9. EPA should apply restrictions to other potential mines that would or could use the same sites for facilities, including TSF sites, as a Pebble mine, and thereby avoid a class-of-one equal protection claim.

I have written previously that the Pebble-only approach is likely to trigger a class-of-one equal protection claim because the 2014 Watershed Assessment found that potential mines at the Pebble South PEB, Big Chunk South, Big Chunk North, and Groundhog deposits would or could use the same sites for facilities, particularly TSF sites, as a Pebble mine. [EPA, Watershed Assessment (2014) at 13-8, 13-10, 13-21 (Table 13-8 n. "a"), 13-22, 13-23.] EPA should avoid such claims by re-issuing the 15-day notice to apply to any discharges from those potential mines in the defined area where the restrictions would apply.

EPA Response

“Class of one” equal protection claims have been recognized by the Supreme Court when the plaintiff is (1) intentionally treated differently from others who are similarly situated and (2) there is no rational basis for the difference in treatment.” *Village of Willowbrook v. Olech*, 528 U.S. 562, 564 (2000). The Supreme Court has since recognized that what was significant in *Olech* and the cases on which it relied “was the existence of a clear standard against which departures, even for a single plaintiff, could be readily assessed.” *Engquist v. Oregon Dept. of Agr.*, 553 U.S. 591, 602 (2008). The Supreme Court has further explained that “[t]here are some forms of state action . . . which by their nature involve

discretionary decision-making based on a vast array of subjective, individualized assessments.” *Id.* In such cases, the government does not violate “the rule that people should be ‘treated alike, under like circumstances and conditions’ when one person is treated differently from others, because treating like individuals differently is an accepted consequence of the discretion granted.” *Id.* “In such situations, allowing a challenge based on the arbitrary singling out of a particular person would undermine the very discretion that such state officials are entrusted to exercise.” *Id.*

A “class of one” equal protection claim related to EPA’s action here cannot stand for several reasons. First, as explained in Section 2 of the FD, EPA has broad discretion to decide whether, when, and how to exercise its CWA Section 404(c) authority to prevent unacceptable adverse effects to the enumerated resources. Specifically, Congress enacted CWA Section 404(c) to provide EPA the ultimate authority, if it chooses on a case-by-case basis, to prohibit, withdraw, deny, or restrict the use of any defined area for specification as a disposal site for the discharge of dredged or fill material into waters of the United States “whenever” the Agency makes the required determination under the statute. 33 USC 1344(c); 40 CFR 231.1(a), (c); 44 Fed. Reg. 58076 (October 9, 1979); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 612-613 (D.C. Cir. 2013). EPA thus exercises its discretionary CWA Section 404(c) authority on a case-by-case basis based on an assessment of the specific facts of each situation. EPA’s action involves exactly the type of discretionary decision-making that EPA has been “entrusted to exercise” under CWA Section 404(c) and allowing a challenge based on the purported singling out of a particular entity would undermine that very discretion, *id.*, and undercut EPA’s ability to prevent unacceptable adverse effects to enumerated resources. EPA also notes that, although it is not exercising such authority in this action, the Agency has express authority under CWA Section 404(c) to withdraw the specification any defined area as a disposal site after the issuance of a CWA Section 404 permit, *see Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 609 (D.C. Cir. 2013). A post-issuance withdrawal of specification naturally “singles out” an individual or entity (i.e., the permittee). That a permittee, applicant, or future project proponent may be treated differently is an acceptable consequence of the discretion granted to EPA. *See Engquist*, 553 U.S. at 602.

Moreover, EPA is not treating any individual or entity differently from others similarly situated. The prohibition and restriction apply within the Defined Areas for Prohibition and the Defined Area for Restriction, respectively, regardless of ownership of the surface land and/or subsurface mineral rights, the identity of the mineral lease holder, or the identity of the project proponent, now and over time.

Finally, even to the extent that EPA’s action incidentally effects certain individuals and/or entities differently (e.g., the owners of record of the land on which EPA’s FD applies to waters of the United States), EPA has provided a rational and well-reasoned explanation

for limiting the discharges that are subject to the FD. See EPA's responses to comments 7.0.1 and 4.B.27.

5.C.48 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (BBFA) (Doc. #0830, p. 23)

F. We reiterate our concern about a potential class-of-one equal protection claim.

The Assessment found that mines at four of the other porphyry copper deposits, i.e., the Pebble South/PEB, Big Chunk North, Big Chunk South, and Groundhog deposits, would or could use these same TSF sites as a Pebble mine. [Watershed Assessment at 13-8, 13-10, 13-21 (Table 13-8 n. "a"), 13-22, 13-23.] Those four other potential mines, particularly at Pebble South PEB which is partly within the defined area and like Pebble straddles the divide between the Nushagak and Kvichak drainages, could build exactly the same dams and bulk TSF at exactly the same sites as a Pebble mine and cause exactly the same harms as doing so for Pebble mine.

That will trigger a class-of-one equal protection claim by PLP because the limits and restrictions in the pre-application portion of the 2022 PD apply to discharges of dredged or fill material associated with mining the Pebble deposit, including to build bulk a bulk TSF for a Pebble mine, but those limits and restrictions do not apply to such discharges associated with mining those other four deposits and building the exact same bulk TSF for any of those other four potential mines.

EPA Response

The discharges that are subject to the FD are limited to those that EPA evaluated, and Section 5 of the FD makes clear that EPA will carefully evaluate all future proposals to discharge dredged or fill material in the region in light of the immense and unique economic, social, cultural, and ecological value of its aquatic resources, including the fishery areas in the SFK, NFK, and UTC watersheds, and their susceptibility to damage. See EPA's responses to comments 4.B.27, 7.0.1, and 5.C.47.

5.C.49 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, p. 25)

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(...)

BBFA and EVC offer ten suggestions for how EPA should rewrite Chapters 4 and 5 of the 2022 PD to be much stronger, issue a revised 2022 PD, and engaged in a renewed public process.}

(...)

3. EPA should inform the public that PLP - or whoever in the future owns or controls mineral interests at the Pebble deposit -- submits a revised mine plan that evades the higher limits in the 2022 PD would go through ordinary permitting.

EPA should discuss the ways in which a revised mine plan could evade the limits of the 2022 PD. We described in our initial comments of June 10, 2022 how PLP perhaps could move the bulk TSF to TSF site 4, 25, or 26 outside the defined area of restriction, or to TSF2 or TSF3 within the defined area of the restriction. EPA should discuss the legislative ideas that would help conserve the watershed of the Bristol Bay Fisheries Reserve.

EPA Response

EPA has engaged in an open and transparent CWA Section 404(c) review process and after consideration of an extensive scientific and technical record, as well as the public comments on the PD, determined that the discharges evaluated in the FD would result in unacceptable adverse effects on anadromous fishery areas. See also EPA’s response to comment 2.D.1. Section 4 of the FD describes the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas. See EPA’s response to comment 7.0.1 for an explanation of why EPA evaluated the discharges of dredged or fill material proposed in the 2020 Mine Plan. The FD makes clear that “[p]roposals to discharge dredged or fill material into waters of the United States associated with developing the Pebble deposit that are not subject to [the FD] remain subject to all statutory and regulatory authorities and requirements under CWA Section 404” (see Section 5 of the FD). EPA disagrees that it should “discuss the ways in which a revised mine plan could evade the limits of the 2022 PD.” The FD does not regulate mining or mineral development. EPA’s CWA Section 404(c) action limits USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material. Comments regarding potential legislation are outside the scope of this CWA Section 404(c) action.

5.C.50 Bristol Bay Regional Seafood Development Association (BBRSDA) (Doc. #2062, p. 3)

A. The RPD should better acknowledge the existential risk of economic damage that the mine imposes on the Bristol Bay commercial salmon fishery.

BBRSDA suggests adding language equivalent or similar to the Final Proposed Determination (“FPD”):

The Bristol Bay commercial salmon fishery is highly dependent upon sockeye salmon’s market position as a premium seafood product. Wild sockeye salmon, including those caught in Bristol Bay, generally fetch prices substantially higher than farmed salmon. The proposed Pebble Mine project could easily jeopardize the premium market position of Bristol Bay sockeye due to negative impacts on fish quality

or consumer perception, which could result in the region's commercial fishery becoming economically infeasible.

EPA Response

See *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska (EPA 2023b)* (referenced in Section 4.4 of the FD) for more information about EPA's consideration of cost-related issues. Also see EPA's responses to comments in Topic 6.F.

5.C.51 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 68-70)

Regardless of whether EPA adopts and includes these recommendations, risks remain that PLP or another future company may seek to maneuver around EPA's final 404(c) action and to mine the Pebble deposit in a manner that would still cause unacceptable adverse impacts to Bristol Bay's unique, and uniquely sensitive, wild salmon habitat. To guard against this, Region 10 should take steps to ensure the prohibition and restrictions are fully implemented.

Active EPA involvement in any future 404 permitting process will be critical to the success of 404(c) restrictions in protecting Bristol Bay water and salmon. Since EPA already possesses ample oversight authority, BBNC encourages Region 10 to include a statement in the Recommended Determination indicating its intent to ensure that the 404(c) restrictions, once finalized, are fully implemented and enforced.

A. EPA Oversight Tools

EPA oversees the 404 permitting program through a variety of authorities, including but not limited to comments on permit applications, restrictions on the use of a defined area as a disposal site, elevation of disputed decisions involving aquatic resources of national importance, and an array of administrative, civil, and criminal enforcement authorities. [See 33 U.S.C. §§ 1319, 1344(a), (c), (q); Clean Water Act Section 404(q) Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army (1992), available at <http://water.epa.gov/lawsregs/guidance/wetlands/dispmoa.cfm>; EPA Fact Sheet, Wetland Regulatory Authority, EPA843-F-04-001 (April 2004), available at http://water.epa.gov/lawsregs/lawsguidance/cwa/wetlands/upload/reg_authority_pr.pdf.] EPA should express its commitment to using these permitting oversight tools as a means to ensure that the 404(c) restrictions are properly implemented and enforced, with an emphasis on tools that limit the impact on the people of Bristol Bay of unnecessary administrative processes.

B. EPA Involvement in Review of 404 Permit Applications

Should a Pebble mine proposal be again presented to the Army Corps or should PLP win its administrative appeal of the permit denial, EPA will have a responsibility to provide comments setting forth its analysis of the consistency of the permit application with 404(c) requirements as well as 404 permitting requirements. [See, e.g., 33 U.S.C. § 1344(b)(1); 40 C.F.R. part 230; and 33 C.F.R. § 323.6(a)]

(requiring specific findings about numerous types of impacts, avoidance and minimization of impacts, and compensatory mitigation for unavoidable impacts).] EPA may be called upon to address some or all of the following issues:

- * Evasion of the restrictions through attempts to phase or segment a mining project with an uneconomical project design;
- * The potential impacts to fisheries from the loss of miles of streams and acres of wetlands, lakes, and ponds below the thresholds set in the restrictions.
- * Proper determination of which streams support anadromous fish;
- * Application of the restrictions to indirect tributaries;
- * Copper toxicity from the leaching of tailings, waste rock piles, and the mine pit;
- * Risk of failure from inadequate design and/or improper operation of a tailings dam or water treatment plant;

With respect to all these issues and any others that may arise during 404 permitting for a Pebble mine project, it will be critical for EPA to play an active role in order to ensure the effectiveness of its 404(c) restrictions and to prevent unacceptable effects on Bristol Bay salmon resources.

One key issue involves the calculation of stream, lake, pond, and wetland losses. For every 404 permit application, the Army Corps is required to undertake a jurisdictional determination to delineate waters of the U.S. that are subject to 404, [See U.S. Army Corps of Engineers, Regulatory Guidance Letter No. 08-02 (June 26, 2008), available at <http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl08-02.pdf>.] and to ensure compliance with 404(b)(1) guidelines. [See, e.g., 33 U.S.C. § 1344(b)(1); 40 C.F.R. part 230; and 33 C.F.R. § 323.6(a) (requiring specific findings about numerous types of impacts, avoidance and minimization of impacts, and compensatory mitigation for unavoidable impacts).] An accurate and complete accounting of jurisdictional waters and affected stream, wetland, and anadromous habitat is thus always necessary to comply with 404 permitting requirements. [See 33 C.F.R. § 325.1(c), (d)(1), 325.3(a) (permit application and public notice requirements); Army Corps, Application for Department of the Army Permit ¶ 22 (requiring a statement of the surface area filled, in acres of wetlands or linear feet of “other waters”), available at http://www.poa.usace.army.mil/Portals/34/docs/regulatory/engform_4345_2013july.] Given the sensitive aquatic resources in Bristol Bay, in any Pebble mine permitting process it would be important for EPA and the Army Corps to ensure that comprehensive, up-to-date, and specific data about stream, wetland, and anadromous habitat losses is available, both to determine whether the proposal complies with the 404(c) restrictions and for rigorous 404 permit review. This complete and accurate accounting could be accomplished by means of “improved, higher-resolution mapping, increased sampling of possible fish-bearing waters, and groundtruthing,” [BBWA at 7-23, Box 7-1.] and could be assisted by the jurisdictional determination process as well. In particular, Region 10 should explicitly require water resources mapping, including field-verified mapping and fine-scale aerial photography interpretation, in

any future 404 permit application for a proposal to mine the Pebble deposit, as the 2022 PD notes this type of detailed, field-verified mapping can result in the identification of 40% more wetlands and four times as many streams as compared to national stream and wetland datasets. [See, e.g., 2022 PD Box 4-2.] Thus, the Recommended Determination should state an expectation, implicit in the 2022 PD at Box 4-2, that any future mining proposal would include mapping of sufficient detail to allow EPA to more accurately assess the impacts of the proposal.

Another key issue for EPA to address early on in any new permit application to mine the Pebble deposit is the economic viability of such a proposal.

PLP has failed to provide a feasibility study to show that the 2020 Mine Plan to mine less than 12% of the Pebble deposit is economically feasible or that it will not mine the full 12.125 billion US tons (11 billion metric tons) that the company 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. [See, supra section III(D).] 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...[See, e.g., 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>.]

Since the Army Corps public interest review regulations at 33 C.F.R. Part 320 directs the Army Corps to consider project economics in the context of the overall benefit to the public, EPA might, in line with its duties to oversee proper implementation of the CWA, direct the Army Corps to undertake such a review prior to initiating the NEPA process and further processing the 404 permit application. The Army Corps regulations state that "the district engineer in appropriate 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." [33 C.F.R. § 320(q).] Obtaining this vital economics information at the earliest point possible in the permitting process would help ensure that PLP is not seeking to artificially segment its mine plans to evade final 404(c) action.

C. Severability of the Prohibition and Restrictions

An additional step Region 10 could take to ensure the 404(c) prohibition and restrictions are fully implemented is to clarify that the agency intends the prohibition and restrictions to be severable. This would bolster EPA action in the event of any judicial challenges to the agency's final 404(c) action. Region 10 could clarify that each is based on separate, but overlapping, factual underpinnings that support separate determinations under 404(c).

EPA Response

Although the discharges that are subject to the FD are limited to those that EPA evaluated, Section 5 of the FD makes clear that “[p]roposals to discharge dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to [the FD] remain subject to all statutory and regulatory authorities and requirements under CWA Section 404.” Section 5 of the FD also makes clear that EPA will carefully evaluate all future proposals to discharge dredged or fill material in the region in light of the immense and unique economic, social, cultural, and ecological value of its aquatic resources, including the fishery areas in the SFK, NFK, and UTC watersheds, and their susceptibility to damage. EPA has and will continue to actively engage in the review of proposed CWA Section 404 permits in all regions of Alaska, including within the Defined Area for Prohibition and the Defined Area for Restriction for this FD.

The FD itself is an adequate statement of EPA’s intent to ensure that the FD is fully implemented and enforced. Section 5 of the FD describes the Defined Area for Prohibition and the Defined Area for Restriction, within which EPA’s action limits USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD, including the information required to evaluate applicability.

EPA agrees with the commenter that USACE should consider the economic viability of any future proposals early in the NEPA/Section 404 review process.

With respect to severability, see EPA’s response to comment 2.C.2.

5.C.52 Center for Science in Public Participation (CSP2) (Doc. #0607, p. 1-2)

EPA Region 10 is seeking comment on whether environmental effects associated with the discharge of dredged or fill material from mining the Pebble deposit in amounts other than those proposed in the 2020 Mine Plan (1.3 billion tons of ore over 20 years) could provide a basis for alternative or additional restrictions.

EPA should also consider the inevitable mine impacts of subsequent and additional mining that will result if the construction and operation of the Pebble Mine, as proposed in the 2020 Mine Plan, is authorized.

The 2020 Mine Plan proposed to develop approximately 12% of the mineral resource that has been identified. For large mineral deposits it is common to open a mine with development plans only for that portion of the identified mineral resource necessary to justify the required initial economic investment.

The inferred mineral resource at Pebble is much larger than the amount of the resource proposed for development in the 2020 Mine Plan. It is undoubtedly the expectation of the investors in the Pebble Limited Partnership that the mineral resource will ultimately be developed to the full extent allowed by the existing economic environment. It is also reasonable to assume this would be the goal and intent of company management too, even though they have publically stated they have no plans for further mine development beyond the existing proposal.

The 2020 Mine Plan proposes a project that is probably uneconomic. To achieve economic viability a larger project that will have drastically different impacts is in reality what will be implemented. In addition, the 2020 Mine Plan does not honestly evaluate the potential impacts of even the 2020 Mine Plan project because the project will really involve permanent storage of waste rock on the surface and a permanent pyritic tailings impoundment, rather than submerging waste in the pit. Although the 2020 Mine Plan proposes to backfill the pyritic tailings and waste rock into the mine pit, this will not happen because it is counter to the fiscal expectations of, and promises made to, investors in the Pebble Limited Partnership. The 2020 Mine Plan is a planning charade.

The 2020 Mine Plan closure proposal to backfill the open pit with pyritic tailings and waste rock, and flood the pit with water, would “sterilize” the mineral resource. In order to conduct any future open pit mining the pit would not only need to be drained of any accumulated water before additional mining could occur, but the backfilled tailings and waste rock would need to be removed. This would probably be prohibitively expensive.

The Proposed Project closure alternative could sterilize 88% of the mineral resource. It is virtually unheard-of in the mining industry to intentionally sterilize a known mineral resource, and most state and federal regulators make efforts in their permit decisions to avoid sterilization of a mineral resource. It is highly likely that investors would remove the board and management of a company if the actions proposed in the 2020 Mine Plan were viewed as a serious development proposal. However, it is also obvious that Pebble Limited Partnership does not intend to sterilize this mineral resource, and it has every intention to proceed with mining the larger mineral resource after receiving its permits and beginning mining.

The underground resource is not included in the present mineral resource estimate. Backfilling the pit could also prevent mining of the underground mineral resource. When the backfilled tailings are saturated with water they will flow like a liquid. If there are any fractures that could connect the pit with the underground workings, the underground miners are at risk. This is exactly what happened at the Mufulira Mine in Zambia, killing 89 miners. Since this accident in 1970, mining engineers have been reluctant to mine under tailings because the fracture systems that would allow the migration of tailings to the underground workings are difficult to detect.

The probable buildout of the Pebble Mine would include a second bulk tailings impoundment; and a second impoundment for pyritic tailings. Much more waste rock would be produced per ton of ore in subsequent mining. This waste rock will be disposed on the surface in enormous waste rock dumps, many times larger than those described in the 2020 Mine Plan. Half of the larger open pit and all of the

large North Waste Rock facility lie in the Upper Talarik drainage, a drainage that is intentionally unimpacted by the 2020 Mine Plan. Much of the underground mine development, with accompanying subsidence, would take place in the Upper Talarik drainage. Additional mining will impose significant impact on the Talarik Creek drainage, which is assumed to be unimpacted in the 2020 Mine Plan.

Expansion of the Pebble Mine beyond that of the size of the mine proposed in the 2020 Mine Plan is not only reasonably foreseeable, many of the specific details are already known. The mine proposed in the 2020 Mine Plan is analogous to the camel with its nose under the tent. A much larger body will inevitably follow. A mine 5 to 10 times the size of the proposed mine is reasonably foreseeable, and should be included in the analysis of reasonably foreseeable development.

It is also highly likely that if the transportation infrastructure associated with the Pebble Mine is constructed, in addition to further development of the Pebble orebody, will also facilitate the development of other mineral deposits in areas adjacent to the Pebble Mine. While the size and exact location of these future developments cannot be explicitly defined, the additional potential impacts to the Bristol Bay fishery should be acknowledged.

EPA Response

See EPA's response to comment 4.B.27. Although not a basis for the FD, EPA discusses the cumulative effects of a future expanded mine scenario in Section 4.3.1.2 of the FD.

5.C.53 National Association of Wetland Managers (NAWM) (Doc. #0606, p. 4)

Proposed Prohibition and Restriction: [USEPA Solicitation of Comments #9: "Comments regarding whether the discharge of dredged or fill material associated with mining the Pebble deposit should be prohibited, prohibited/restricted as proposed, prohibited/restricted in another manner, or not prohibited/restricted at all."] Notably, the proposed determination is limited in that it only applies to discharges of dredged or fill material associated with mining the Pebble deposit. The proposed "prohibited" defined area only pertains to the mine site footprint located in the SFK and NFK watersheds (the mine site proper). In defining the prohibited area, EPA should additionally consider potential aquatic impacts of discharges associated with the complete project, including construction and operation of mine infrastructure (e.g., port, pipelines, and transportation corridors). [USEPA Solicitation of Comments #10: "Comments on whether and how EPA Region 10's proposed action under CWA Section 404(c) should consider discharges of dredged or fill materials beyond those associated with the mine site and include discharges associated with the construction of other mine infrastructure (e.g., port, pipelines, transportation corridors)."] Construction of major infrastructure will cause additional and potentially significant ecological impacts similar to those of the mine site footprint, and spills or other failures of this infrastructure could result in "severe impacts to aquatic resources" in the SFK, NFK, and UTC watersheds." [USEPA. 2022 Proposed Determination. p. 6-6]

EPA Response

See EPA's responses to comments 4.B.27 and 4.B.50. The Defined Area for the Prohibition has been revised since the PD. See Section 5.1.1. of the FD and EPA's response to comment 5.A.1.

EPA discusses the cumulative effects of a future expanded mine scenario in Section 4.3.1.2 of the FD and spills and failures in Section 6 of the FD.

5.C.54 Kim Williams (Doc. #2667-17, p. 48)

I want to, I want to speak to the proposed determination because yesterday, your presentation to us - there needs some more work on it. We need some protections around the South Fork of the Koktuli. There are areas in - when Pebble has given their own mine plan, where they put dredge and fill material along the South Fork. And I think there needs to be some further restrictions placed in there.

And while the PD does speak to the transportation corridor, and the adverse impacts associated with the transportation corridor, I think we need to strengthen it, because a, a corridor in itself will cause some adverse impacts from a dredge and fill. And I think that needs some further work.

EPA Response

See EPA's responses to comments 4.B.27 and 4.B.50. Section 4 of the FD provides the basis for EPA's determination that discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

5.C.55 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 22)

Pg. 4-53: "The following analysis does not consider associated facilities and transportation corridors."

Comment: Given known, well-documented impacts of roads to salmon and other aquatic life, the failure to consider them in the PD results in a substantial underestimate of adverse effects of mine development.

EPA Response

See EPA's response to comment 4.B.50.

5.C.56 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 16)

Pg. 2-2: "EPA did not evaluate the ancillary project components along the transportation corridor or at the Diamond Point port; therefore, this proposed determination does not address these components."

Comment: In neglecting to consider these components, the PD grossly underestimates project impacts to anadromous fishery areas.

EPA Response

See EPA's response to comment 4.B.50.

5.C.57 Center for Science in Public Participation (CSP2) (Doc. #0607, p. 2-3)

Whether and how EPA Region 10's proposed action under CWA Section 404(c) should consider discharges of dredged or fill materials beyond those associated with the mine site and include discharges associated with the construction of other mine infrastructure (e.g., port, pipelines, transportation corridors).

Roads and associated infrastructure are one of the top causes of the impending collapse of wild salmon populations in the lower 48 states, and the billions of dollars spent attempting to retrofit structures and restore habitat has failed to recover wild salmon populations.

The 2020 Mine Plan requires the construction of an approximately 82-mile road, with associated copper concentrate pipeline, molybdenum concentrate trucking, diesel and natural gas fuel pipelines. Roads and pipelines will permanently alter and bifurcate functioning habitat and create fragmented and disconnected habitats and migratory corridors. The Pebble Project would install 17 bridges and some 80 new culverts into rivers and streams during access road construction.

It has been estimated that approximately 13 percent of the road corridor passes through wetlands or waterbodies.

Leaks from the pipelines are inevitable, and can affect both streams and groundwater that slowly feeds into adjacent streams.

In the EIS it was estimated that there would be roadway truck traffic of 35 round trips per day. Some of these trucks would carry molybdenum concentrate. If a spill were to occur, long lasting stream and groundwater contamination could result.

The mine road, and port the associated port infrastructure, are a significant part of the 2020 mine proposal. The road corridor is long, and crosses many salmon streams. The impacts of the road would probably add significantly to the potential impacts of mine development on fisheries resources, and should be included in the environmental analysis of the proposed mine.

EPA Response

See EPA's response to comment 4.B.50.

5.C.58 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 76-77)

Response to Question #10 – EPA Region 10’s proposed action need not consider impacts associated with other mine infrastructure

In its solicitation of comments, EPA Region 10 requests comments on whether and how EPA Region 10’s proposed action under CWA Section 404(c) should consider discharges of dredged or fill materials beyond those associated with the mine site and include discharges associated with the construction of other mine infrastructure (e.g., port, pipelines, transportation corridors).

As described in section V above, the impacts associated with mining the Pebble deposit alone are unprecedented and support the agency’s unacceptable adverse effects finding. The additional impacts associated with other mine infrastructure in the 2020 Mine Plan such as the port site, pipelines, and transportation corridors amount to an additional 1,595 acres of direct and indirect permanent impacts to waters with 205 stream and river crossings across six major watersheds. [Final EIS, Executive Summary, p. 98.]

These impacts, while large and destructive, were not closely analyzed by the Army Corps due to PLP’s failure to provide important baseline data such as detailed mapping, salmon surveys, stream flow surveys, habitat typing, and detailed construction plans. Missing from the administrative record are important factors such as the number of streams that are salmon-bearing, which streams would be filled for culverts versus bridges, and the variable seasonal flow of the streams. To the extent that EPA ties its effects analysis to the more detailed baseline data and mapping such as that available at the mine site, including transportation corridor impacts would be less precise as compared to the analysis of impacts at the mine site.

In addition, as a practical matter, due to private landowner objections, PLP does not have a viable transportation corridor and port site plan. Throughout the permitting process, BBNC unequivocally objected to PLP’s proposal to use of BBNC subsurface and surface estate for the transportation corridor. [See enclosed Appx. C, pp. 402 to 405 (BBNC letter to Army Corps (June 19, 2019), “PLP does not have BBNC’s permission to trespass our subsurface or surface lands or utilize any of our subsurface resources.”) and pp. 718 to 751 (BBNC letter to Army Corps (May 21, 2020) and associated enclosures regarding the northern transportation corridor and BBNC surface and subsurface estate, writing “to reiterate that our surface and subsurface estate is not available” to PLP.).] The north road alternative would require PLP to bisect BBNC surface estate along the north shore of Iliamna Lake, as well as utilize BBNC rock and gravel subsurface estate. In addition, subsequent to PLP’s submission of the 2020 Mine Plan to the Army Corps, private landowners such as BBNC purchased lands that PLP proposed to use for its road, pipeline, and port facilities. [See enclosed Appx. C, pp. 718 to 751. In addition, BBNC purchased Native allotment AKAA 51014—the site PLP proposed to use for its Port Facilities and a section of the Diamond Point port road—in August 2021. According to the Final EIS, the 2020 mine plan would impact 15 acres at Native allotment AKAA 51014. See Final EIS, at Table 3.2-1 and Final EIS Appx. N (Project Description), at p.18.] Without permissions to use private property parcels essential to its 2020 Mine Plan transportation infrastructure, which BBNC will not provide, PLP will need to amend its plans in the

event of any future permitting process. This again raises BBNC's concerns, discussed in section VII above, that the 404(c) prohibition must be clarified to avoid the scenario where PLP could make minor changes to its transportation infrastructure plans, resubmit a new 404 permit application that is not for the "2020 Mine Plan," and avoid the 404(c) prohibition.

EPA Response

See EPA's response to comment 4.B.50 regarding the scope of discharges and impacts evaluated in the FD. See EPA's responses to comments 3.A.3, 4.D.2, 4.D.3, and 4.F.5 and Appendix B of the FD for more information about baseline and mapping data quality.

5.C.59 Bristol Bay Regional Seafood Development Association (BBRSDA) (Doc. #2062, p. 8)

C. The Recommended Determination should consider discharges associated with other mine infrastructure, particularly the transportation corridor.

The RPD, and particularly Section 6, does not include any discussion of the transportation corridor. BBRSDA suggests that a brief discussion of adverse effects from the transportation corridor outside of the mine site is warranted, especially given that they compound the adverse effects to the fishery resources to such an extent that they alone could justify EPA action under Section 404(c).

EPA Response

See EPA's response to comment 4.B.50.

5.C.60 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 52-56, 75-76)

VII. BBNC SUPPORTS FINAL 404(C) ACTION AND REQUESTS EPA ISSUE A RECOMMENDED DETERMINATION WITH A STRENGTHENED PROHIBITION AND STRONGER RESTRICTIONS

BBNC supports final 404(c) action and asks that EPA Region 10 consider clarifying the prohibition and restrictions to protect Bristol Bay from the threat posed by mining the Pebble deposit. BBNC's recommendations are in line with the agency's intent in releasing the 2022 PD, are supported by the robust record before the agency, are responsive to the Pebble permitting process and PLP's 2020 Mine Plan, would not expand the geographic scope of the agency's action beyond its current proposal, and are well within the agency's statutory authority. BBNC's recommendations, if incorporated into the final determination, will provide more certainty to the people of Bristol Bay by crafting more effective and durable 404(c) protections and will also provide more clarity to any company proposing to mine the Pebble deposit.

Looking ahead to a Recommended Determination, the Regional Administrator must specifically "confirm or modify the proposed determination, with a statement of reasons." [40 C.F.R. § 231.5(d)(2).] The Recommended Determination must include: (1) a summary of the unacceptable adverse effects that

could occur from use of the disposal site for the proposed discharge and (2) recommendations regarding a Final Determination to prohibit, deny, restrict, or withdraw, specifically confirming or modifying the Proposed Determination with a statement of reasons. [40 C.F.R. § 231.5(d)(1)-(2).] Here we provide Region 10 with specific modifications to the Proposed Determination and the justifications for each modification.

A. Geographic Scope

As an initial matter, BBNC is providing EPA feedback on the geographic delineations of three important components of the 2022 PD—the definition of the Pebble deposit orebody, the Defined Area for the Prohibition, and the Defined Area for the Restriction. As detailed here, the 2022 PD definition of the Pebble deposit should be amended and clarified throughout a Recommended Determination in order to more closely align with how PLP itself describes the deposit and to provide more certainty to mine developers and the people of Bristol Bay regarding the applicability of the 404(c) action. In addition, while EPA has appropriately delineated the Defined Area for the Restriction, EPA should re-delineate and clarify the Defined Area for the Prohibition. Importantly, none of BBNC’s recommendations would expand the geographic scope of any aspect of the proposed 404(c) action beyond the mine claim holders currently identified by EPA as holding claims impacted by the 2022 PD.

1. Region 10 Should Clarify the Definition of the Pebble Deposit Orebody

In crafting the 2022 PD prohibition and restrictions, Region 10 references the “Pebble deposit” as defined by its surficial boundary. [2022 PD at p. 5-1. We also note that the 2022 PD varies in how it describes this surficial boundary, in one place defining the deposit as covering “an area of at least 1.9 by 2.8 miles” and in another place defining the deposit as delineated by a 2.5 mile- by 3.5-mile box. Compare 2022 PD at p. 2-1 with 2022 PD at p. 5-1. EPA should rectify these discrepancies in the Recommended Determination.] When clarifying the Pebble deposit definition as recommended in this section, the Recommended Determination should ensure a uniform definition of the Pebble deposit as it applies to both the prohibition and restrictions. [See 2022 PD at p. 5-1 (noting that the prohibition and restriction both reference the same definition of the Pebble deposit). It is important that Region 10 define and delineate the Pebble deposit for purposes of the prohibition because, as discussed in section B(2) below, one of BBNC’s recommendations for clarifying the prohibition is to include a reference to the Pebble deposit in the prohibition itself.]

The Army Corps and EPA have identified certain levels of impact that, on their face, are unacceptable in the North Fork Kuktuli, South Fork Kuktuli, and Upper Talarik Creek watersheds. That conclusion is well-founded in the administrative record. Region 10’s intent in the 2022 PD is to prevent these levels of impacts of mining pyritic ore from occurring in these watersheds. This intent is advanced by applying those prohibitions and restrictions to any hardrock mining efforts that would have those levels of impacts in the area of the prohibition and restrictions.

Thus, in the Recommended Determination, Region 10 should base the definition of the Pebble deposit on the best available information and science of ecological effects from mining pyritic ore. Region 10 may

accomplish this in one of two ways. The following two alternative recommendations will help Region 10 clarify that its definition of the Pebble deposit includes the entire 11.0 billion metric tons currently delineated [<https://www.northerndynastyminerals.com/pebble-project/project-overview/>] (describing a resource estimate at the Pebble deposit as 6.5 billion metric tons measured and indicated and 4.5 billion metric tons inferred).] and confirmed in PLP's 404 permit application. [Final EIS, Appx. N. Project Description.]

First, Region 10 should redefine the Pebble deposit by removing the reference to a specific border for the Pebble deposit and instead focusing the prohibition and restrictions on the character of the orebody and the resulting ecological effects from mining this ore type. By using this approach, the Recommended Determination's definition of the "Pebble deposit" would account for the ever-expanding delineation of the Pebble deposit resource, as well as account for other exploration and development prospects within PLP's claim block. EPA acknowledges that the full extent of the Pebble deposit is an estimate based on PLP's exploration efforts and "is not yet defined." [2022 PD at p. 2-1.] Indeed, in defining its 11.0 billion metric ton deposit, PLP 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. [<https://www.northerndynastyminerals.com/pebble-project/geology-and-exploration/>] Moreover, as discussed in section III(D) above, PLP also describes additional mineralized areas—specifically areas of pyrite alteration—within its mining claims (identified as "Mineral Prospect" in Figure 6 below) 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." [Id.]

Because the extent of the Pebble deposit may expand over time and may include other mineral prospects on PLP's mining claims, the Recommended Determination's prohibition and restrictions should reference the ore type as it is the ecological effect of mining this ore type that EPA uses to support its restrictions. The robust record from the Final EIS and ROD as well as EPA's 2014 Watershed Assessment supports a 404(c) action that focuses on the effects of the mining pyritic ore within the boundaries of the 2022 PD's Defined Area for Restriction, regardless of the source of that pyritic ore.

In the alternative, Region 10 should redefine the Pebble deposit by relying on NDM's definition of the "Pebble Deposit Area" in its financial filings with the U.S. Securities and Exchange Commission ("SEC") and Canadian Securities agencies. [See, Pebble Project Preliminary Economic Assessment NI 43-101 Technical Report, Prepared for Northern Dynasty Minerals Ltd., Prepared by Ausenco Engineering Canada (effective date: Sept. 9, 2021), Figure 10-2, at p. 109, on file with the Securities and Exchange Commission at: https://www.sec.gov/Archives/edgar/data/1164771/000165495421011600/ndm_ex991.htm.] NDM defines this as the area, 4.5 miles by 3.5 miles, where the most advanced geotechnical drilling of the Pebble deposit has occurred. To help Region 10 understand the differences between the 2022 PD and NDM's SEC delineation of the "Pebble Deposit Area," BBNC has mapped the following comparison:

[Figure 6. Map of Pebble Deposit Area as Defined by EPA and NDM/PLP included in submission here]
[GIS data for “Mineral Prospect” from USGS Alaska Resource Data File, <https://mrdata.usgs.gov/ardf/>.
GIS data for state mining claims from ADNR Alaska Mine Claims Mapper, <http://akmining.info/>.]

Region 10’s adoption of either alternative would result in a stronger Recommended Determination and more durable and transparent prohibition and restrictions. This recommendation is supported by the robust record before the agency, is responsive to the Pebble permitting process and PLP’s 2020 Mine Plan, would not expand the geographic scope of the agency’s action beyond its current proposal, and is well within the agency’s statutory authority.

2. Region 10 Should Re-Delineate the Defined Area for Prohibition

The 2022 PD Defined Area for Prohibition encompasses only the 2020 Mine Plan footprint at the mine site within the South Fork Koktuli and North Fork Koktuli watersheds. [2022 PD, at Figure ES-5 and p. 5-2..] The discharges prohibited within the Defined Area for Prohibition are dredged and fill material for the construction and routine operation of the 2020 Mine Plan. But, as described in section VII(B) below, the combination of a limited geographic scope for the Defined Area for Prohibition, in conjunction with the limitation to “the construction and routine operation of the 2020 Mine Plan,” is vulnerable to future creative permit application proposals from PLP that are in effect the same as that mine plan but not identical in geographic configuration.

In specifying waters that cannot be used as a disposal area, Region 10 should not limit the Defined Area for Prohibition to the 2020 Mine Plan footprint, but rather prohibit discharges into designated rectangular survey system township, range, and section units that encompass: (1) areas PLP proposed to use in the 2020 Mine Plan (i.e., the current 2022 PD Defined Area for Prohibition) as well as (2) areas PLP proposed and the Corps considered as other options for mine site tailings storage facilities and the water treatment ponds as analyzed and rejected in the EIS process. [PLP’s options and associated footprint maps are found in the Army Corps record in PLP’s responses to Army Corps Requests For Information (“RFI”) numbers 69, 98, and 150. See enclosed Appx. C pp 2192 to 2287. See also, Final EIS Appx. B Figure B-4.] In section VII(B) below, BBNC provides EPA with specific feedback and mapping on how to re- delineate the Defined Area for Prohibition.

3. BBNC Supports the Defined Area for the Restriction

The 2022 PD Defined Area for Restriction encompasses certain headwaters of the South Fork Koktuli, North Fork Koktuli, and Upper Talarik Creek and is approximately 309 square miles. [2022 PD at p. 5-3.] It “includes areas within the three watershed boundaries where mine claims are currently held and areas where mine claims are available to represent locations where there is a potential for the discharge of dredged or fill material associated with mining the Pebble deposit.” [2022 PD at p. 5-3.]

BBNC supports the Defined Area for Restriction as it is appropriately tailored to the Pebble Project and state lands around the Pebble deposit where mining claims may be staked. Region 10’s Defined Area for Restriction is supported by the factual record developed during Army Corps permitting process in that it encompasses the three watersheds that PLP proposed to locate its mine site facilities. In addition, as the

Defined Area for Restriction focuses on state lands where mining claims are available for staking, which is appropriately tailored to the threat.

(...)

I. Response to Question #9 – The effects associated with mining the Pebble deposit warrants a clarified prohibition and restrictions

In its solicitation of comments, EPA Region 10 requests comments regarding whether the discharge of dredged or fill material associated with mining the Pebble deposit should be prohibited, prohibited/restricted as proposed, prohibited/restricted in another manner, or not prohibited/restricted at all. In particular, EPA Region 10 is seeking comment on whether environmental effects associated with the discharge of dredged or fill material from mining the Pebble deposit in amounts other than those proposed in the 2020 Mine Plan (1.3 billion tons of ore over 20 years) could provide a basis for alternative or additional restrictions.

BBNC unequivocally supports preparing a recommended determination with strong, durable protections to protect Bristol Bay from the proposed Pebble mine project. As described in section VII above, BBNC proposes clarifications and expansions to the proposed prohibition and restrictions. To summarize BBNC’s proposals are:

PROHIBITION RECOMMENDATIONS

Recommendation	Justification
<p><i>Definition of the Pebble Deposit</i> Redefine and specify that the “Pebble deposit” is broader than “an area of at least 1.9 by 2.8 miles” or delineated as a 2.5 mile- by 3.5-mile box and instead base the definition of the Pebble deposit on the best available information and science of ecological effects from mining pyritic ore. In the alternative, when defining the Pebble deposit ore body that, when mined, would be subject to the prohibition, use PLP’s definition of the Pebble deposit as seen in its filings with the U.S. and Canadian Securities agencies.</p>	<p>The prohibition as drafted – with a qualification that it applies only to the 2020 Mine Plan – is vulnerable to future evasive permit application proposals from PLP that would have the same effect as the 2020 Mine Plan but are not identical.</p> <p>This threat is very real. For example, after the Army Corps denied PLP’s permit application the CEO of PLP’s parent company publicly stated that the company was looking for ways to amend its mine plan to maneuver around permit denial. Changes to PLP’s proposed transportation corridor, port site, or compensatory mitigation projects would similarly result in modifications to the 2020 Mine Plan, rendering the prohibition a dead letter even though impacts to the mine site would remain unchanged.</p>
<p><i>Prohibit Alternative Mine Facility Locations Proposed by PLP in the Permitting Process</i> In specifying waters that cannot be used as a disposal area, do not limit the area to the 2020 Mine Plan footprint, but rather prohibit discharges into designated rectangular survey system township, range, and sections that encompass: (1) areas PLP proposed to use in the 2020 Mine Plan as well as (2) areas PLP proposed as other options for mine site tailings storage facilities and the water treatment ponds as analyzed and rejected by the Corps in the EIS process.</p>	

<p><i>Remove limitation to PLP's 2020 Mine Plan</i></p> <p>Focus the prohibition on a broader set of mining activities that target the Pebble deposit, e.g., prohibit discharges within the prohibited disposal area (see #1 above). For example:</p> <ul style="list-style-type: none"> • “prohibit . . . the discharge of dredged or fill material for the construction and routine operation of a large-scale porphyry mine at the Pebble deposit.” <p>or</p> <ul style="list-style-type: none"> • “prohibit . . . the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan (PLP 2020b, USACE 2020a:Appendix J) and substantially similar mine plans.” 	
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RESTRICTION RECOMMENDATIONS

Recommendation	Justification
<p><i>Elaborate on “similar or greater in nature and magnitude”</i></p> <p>Provide more detail on what constitutes adverse effects “similar or greater in nature and magnitude” with a focus on ecological effects supported by sound science that would restrict a mine similar to that analyzed in the 2014 PD and Watershed Assessment.</p>	<p>The restrictions as drafted – with an emphasis on numerical standards for the restrictions and use of “similar or greater” – is vulnerable to future proposals from PLP that would be unacceptable based on the science.</p> <p>This threat is also very real and was seen in PLP’s marketing of its 2017 permit application, namely that its mine proposal was “a near match for the scenario” analyzed by EPA in 2014.</p>
<p><i>Definition of the Pebble Deposit</i></p> <p>Redefine and specify that the “Pebble deposit” is broader than “an area of at least 1.9 by 2.8 miles” or delineated as a 2.5 mile- by 3.5-mile box and instead base the definition of the Pebble deposit on the best available information and science of ecological effects from mining pyritic ore. In the alternative, when defining the Pebble deposit ore body that, when mined, would be subject to the prohibition, use PLP’s definition of the Pebble deposit as seen in its filings with the U.S. and Canadian Securities agencies.</p>	

Finally, as described in section VIII above, any additional restrictions defined in the Recommended Determination should be explicitly severable from all other restrictions and Region 10 should take steps to ensure the prohibition and restrictions are fully implemented.

EPA Response

Regarding the first point on clarifying the Definition of the Pebble deposit orebody, Section 5 of the FD has been revised to address the commenter’s recommendation to clarify the description of the Pebble deposit boundary, but the definition has not changed since the PD. The FD continues to describe a clear boundary for the Pebble deposit for purposes of the FD.

As described in Sections 2.1.1 and 5 of the FD, the extent of the mineralization associated with the Pebble deposit extends over an area of at least 1.9 by 2.8 miles and the full extent of the mineralization zone is not yet defined. As described in Section 5, for administrative convenience, EPA has identified a 2.5-mile by 3.5-mile area that encompasses the approximate known extent of the Pebble deposit based on publicly available and commonly understood property boundaries, i.e., Public Land Survey System (PLSS) quarter sections. This same definition of the Pebble deposit is applicable under the prohibition and restriction, which was requested by the commenter and has remained consistent since the PD.

For purposes of the FD, the definition of the Pebble deposit is only critical for identifying which mining operations would be subject to the prohibition and restriction. Dredged or fill material need not originate within the boundary of the Pebble deposit defined in Section 5 of the FD to be associated with mining the Pebble deposit and, thus, potentially subject to the prohibition or restriction.

Regarding the two options for revising the Pebble deposit, EPA disagrees that the two recommended options would provide improved ways to define the Pebble deposit. EPA found the first option of basing “the definition on the best available information and science of ecological effects from mining pyritic ore” would introduce additional uncertainty into the FD regarding the meaning of the Pebble deposit for purposes of this CWA Section 404(c) action. Furthermore, regarding the commenter’s second option, to redefine the Pebble deposit to align with the extent of Figure 10-2 in NDM’s financial filings with the U.S. Securities and Exchange Commission and Canadian Securities agencies (i.e., Kalanchey et al. 2021), EPA found that, although this figure has a title of “Pebble Deposit Area,” the accompanying text does not indicate that NDM identified this map as a “definition” of the extent of the mineral resources. As such, EPA found this option is not appropriate because it is not clearly supported by the document cited by the commenter.

See also EPA’s responses to comments 5.A.1, 5.A.7, and 5.C.28.

5.C.61 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 18-19)

Comments regarding the approach used to delineate the Defined Area for Prohibition and the Defined Area for Restriction and whether there are other factors or approaches EPA Region 10 should consider in delineating these areas.

EPA’s approach used to delineate the Defined Area for Prohibition and Defined Area for Restriction is reasonable. However, EPA defines the “Pebble deposit” narrowly as a 2.5 by 3.5-mile box. [Id. at 5-1.] This inappropriately limits the proposed restrictions to just the 2020 Mine Plan, rather than to the geographic scope of the entire mineral deposit. EPA should define the “Pebble deposit” more broadly to

include the entire deposit area as defined by PLP and Northern Dynasty Minerals—not just that proposed in the artificially narrow 2020 Mine Plan. In materials provided to investors—as opposed to the 2020 Mine Plan submitted to the Army Corps—PLP and Northern Dynasty Minerals define the project and its resources more broadly than the 1.4-billion-ton project proposed in its permit application. According to Northern Dynasty Minerals’ website:

In total, the Pebble resource estimate includes 6.5 billion tonnes in the measured and indicated categories containing 57 billion lb copper, 71 million oz gold, 3.4 billion lb molybdenum, 345 million oz silver and 2.6 million kg of rhenium; and 4.5 billion tonnes in the inferred category, containing 25 billion lb copper, 36 million oz gold, 2.2 billion lb molybdenum, 170 million oz silver and 1.6 million kg of rhenium. Quantities of palladium also occur in the deposit. [Northern Dynasty Minerals, Pebble Project, Geology and Exploration, available at <https://northerndynastyminerals.com/pebble-project/geology-and-exploration/>.]

Further, Northern Dynasty’s description of the Pebble deposit has expanded over time:

Exploration work since 2001 resulted in a significant overall increase in the Pebble deposit, including discovery of the higher grade eastern part of the deposit, and the identification of other copper, gold, molybdenum and silver occurrences along the extensive northeast-trending mineralized system that underlies the property.

There also remains exciting exploration potential to add to the known resource. The deposit is most significantly open to the east, at depth and, possibly, to the south.

Two drill holes are highlighted...hole 6348 is outside the current resource but demonstrates the high-grade potential to the east. [Id.]

According to Northern Dynasty Minerals, the extent of the Pebble deposit is not yet fully determined and will expand based on exploration. Given the expected expansion of the Pebble deposit, it is particularly important for EPA to avoid unnecessarily defining the deposit narrowly based on the artificially low and economically infeasible 2020 Mine Plan.

EPA Response

See EPA’s responses to comments 5.A.7 and 5.C.60. Section 5 of the FD has been revised to address the commenter’s recommendation to clarify the description of the Pebble deposit boundary.

5.C.62 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 5)

The EPA Should Make Clear that the Restrictions Apply to Discharges of Material taken from Anywhere within the Entire Pebble Deposit.

Trout Unlimited and KSP appreciate that the revised PD includes restrictions on potential future discharges from mining of the Pebble deposit into Bristol Bay's headwaters. However, the revised PD includes too narrow a definition of the "Pebble deposit." The EPA should use the best science and information available to clearly and more broadly define the "Pebble deposit" to encompass the entire mineral formation.

The revised PD defines the Pebble deposit as "an area of at least 1.9 by 2.8 miles" [Revised PD at 2-1.] or as an area delineated as a 2.5 mile by 3.5 mile box. [See id. at 5-1.] These definitions are unnecessarily restrictive, inconsistent, and only capture a fraction of the full deposit. This leaves significant portions of the ore body outside the defined area and, therefore, potentially not subject to the revised PD's restrictions. There is no scientific rationale for the EPA to adopt this unnecessary and arbitrarily narrow definition of the "Pebble deposit" since ore from these outer areas: (1) are from the same geologic formation and have similar mineral and chemical properties; and (2) will cause the same unacceptable adverse impacts if discharged into Bristol Bay's headwaters as ore from within the defined boundary.

While the EPA recognizes "[t]he full extent of the Pebble deposit is not yet defined," [Id. at 2-1.] the EPA nonetheless provides a geographically limited definition without any rationale for the limited definition. The EPA's definition in the revised PD is much more limited than PLP's own descriptions of the deposit, which, according to the PLP's 2021 Preliminary Economic Assessment Report, describes the Pebble deposit has including the full 11 billion tons of measured, indicated, and inferred ore. [See, Ausenco Engineering Canada, Pebble Project Preliminary Economic Assessment NI 43-101 Technical Report, Prepared for Northern Dynasty Minerals Ltd Figure 10-2, at 109 (Sept. 9, 2021), available at https://www.sec.gov/Archives/edgar/data/1164771/000165495421011600/ndm_ex991.htm; Northern Dynasty Minerals, Pebble Project Reserves and Resources, <https://northerndynastyminerals.com/pebble-project/reserves-resources/>.]

The EPA should adopt an expansive definition for the "Pebble deposit" based on the best available information and science that includes the entire orebody. This definition should recognize that our knowledge of the extent of the deposit likely will expand over time. The EPA should define the deposit based on the character of the ore body and include all minerals that are similar in geologic and/or chemical makeup since all such minerals pose a similar threat of impacts if discharged into Bristol Bay's headwaters. The EPA's definition should focus on the character of the ore body, and not be bound by a box on a map that fails to account for our limited knowledge of the extent of the deposit.

EPA Response

See EPA's response to comment 5.C.60.

5.C.63 Trustees for Alaska et al. (Doc. #0831, p. 19)

Comments regarding the approach used to delineate the Defined Area for Prohibition and the Defined Area for Restriction and whether there are other factors or approaches EPA Region 10 should consider in delineating these areas.

EPA's approach for delineating the geographic scope of Defined Area for Prohibition and the Defined Area for Restriction is reasonable and we have no suggestions for EPA's consideration.

EPA Response

Section 5 of the FD was revised in response to comments. See EPA's responses to comments 5.A.1 and 5.A.7 regarding changes to the prohibition, including a modification to the Defined Area for Prohibition.

5.C.64 H2T Mine Engineering Services, LLP (Doc. #0270, p. 2)

Pebble is an asset for Alaska

1. The proposed determination intentionally elevates one resource at the expense of another rather than working within Alaska's long-standing environmental framework of co-existence among industries.

EPA Response

See EPA's response to comment 5.B.32. The FD is designed to prevent unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds from certain discharges of dredged or fill material associated with developing the Pebble deposit. The FD does not prevent all potential development of the Pebble deposit.

5.C.65 Owl Ridge Natural Resource Consultants, Inc. (Doc. #0865, p. 1)

EPA's presumptions referenced above have been characterized as a 'pre-emptive veto.' Whichever way it is characterized, the 2022 PD effectively blocks any mineral development actions across 309 square miles in Alaska proximate to the Pebble site.

EPA Response

See EPA's responses to comments 1.C.1 and 5.B.32

5.C.66 Cook Inlet Tug & Barge, LLC (Doc. #1987, p. 1)

* The justification for Pebble action could be applied to any watershed in Alaska including the Copper River, Yukon River or Kuskokwim River.

EPA Response

See EPA's response to comment 4.B.27. This FD does not apply to anadromous fishery areas in the Copper River, Yukon River, or Kuskokwim River.

5.C.67 Alaska Peninsula Corporation (APC) (Doc. #2668, p. 3-4)

2. The 404(c) Determination Amounts to Red-zoning APC Properties.

APC objects to the Section 404(c) determination based upon its property ownership pattern. APC selected the Upper Talarik watershed because of APC's mandate under ANCSA to maximize its lands for economic purposes. As detailed above, few APC shareholders in either Kokhanok or Newhalen own commercial fishing permits. In the absence of development, those two communities experienced extremely high unemployment until the Pebble development provided opportunities for economic growth in conjunction with APC's aggressive efforts to obtain the same. The practical effect of the EPA's Section 404(c) proposed determination amounts to discriminatory zoning of APC's lands. As a result, the local economies of Newhalen and of Kokhanok, which had returned to almost 100% employment as a result of the Pebble project,, will be reversed, and the value of APC's landholdings as an economic base for APC shareholders will be, significantly degraded and will suffer significant losses.

The preemptive veto, although limited to Pebble at this point, is really unlimited. During the consultation, we at APC questioned whether adjacent prospects to the Pebble prospect were included in the proposed Section 404(c) action. We were told that because those projects had not yet sought Section 404 permits, that they were not included.

Within the universe of potential projects is the Groundhog project, immediately adjacent to the Pebble prospect. The Groundhog and any other potential prospects within the watersheds of the Koktuli and Upper Talarik Creeks are directly impacted by the proposed 404(c) action. In short, the proposed action is a preemptive veto of any future proposals in the watersheds. Thus, the EPA action is intended to preclude any activity within the watersheds with boundaries that enclose the North Fork Koktuli, the South Fork Koktuli, and Upper Talarik Creek. In tum, one of those watersheds, the Upper Talarik Creek watershed, is in large part on APC lands. Consistent with APC's position that the immediate effect is to degrade and devalue APC's economic interests, the long-term impact is to continue that degradation.

EPA Response

To the extent the commenter contends that EPA's action is discriminatory, EPA disagrees. The commenter does not explain how EPA's action "amounts to red-zoning." However, EPA notes that the Agency's action, which is well within its authority under CWA Section 404(c), is limited to prohibiting the specification of and restricting the use of certain waters of the United States within particularly defined areas as disposal sites for certain discharges of dredged or fill material that EPA has determined will have unacceptable adverse effects on anadromous fishery areas within the SFK, NFK, and UTC watersheds. As an initial matter, EPA's action does not constitute zoning or land use. See EPA's responses to comments 5.B.32, 2.C.8, 2.C.21, 2.C.23, and 2.C.44. To the extent that the commenter's contention that EPA's action "amounts to red-zoning" is based on property ownership, and in particular property owned by the Alaska Peninsula Corporation, EPA notes that the Alaska Peninsula Corporation does not own any property within the area subject to EPA's action. See EPA's response to comment 2.C.59. To the extent that the commenter asserts that EPA's action is contrary to or violates ANCSA "because of APC's

mandate under [that statute] to maximize its lands for economic purposes,” see EPA’s response to comment 2.C.26.

With respect to the commenter’s concerns related to jobs and other forms of economic growth in the absence of the development of the Pebble deposit, see *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b) (referenced in Section 4.4 of the FD) for more information about EPA’s consideration of these issues. See also EPA’s responses to comments in Topic 6.F.

To the extent the commenter contends that EPA’s action is a “preemptive veto of any future proposals in the watersheds,” including the “Groundhog project,” see Section 2 of the FD, which explains EPA’s authority and its rationale for acting now and Section 5 of the FD, which explains the defined areas in which EPA’s action applies. Section 5 of the FD also describes the discharges of dredged or fill material to which EPA’s action applies.

EPA’s action limits USACE’s ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material. The FD only applies to discharges of dredged or fill material associated with developing the Pebble deposit, and only applies to those discharges if they result in certain levels of aquatic resource loss or streamflow changes in the SFK, NFK, and UTC watersheds. See Section 5 of the FD.

The commenter asserts that, when asked whether prospects adjacent to the Pebble deposit were included in the Agency’s proposed CWA Section 404(c) action, EPA told the commenter that “because those projects had not yet sought Section 404 permits, that they were not included.” The commenter appears to have misunderstood EPA’s response. Section 404(c) of the CWA provides EPA with independent authority, separate and apart from the USACE permitting process, to review and evaluate potential discharges of dredged or fill material into waters of the United States. See EPA’s response to comment 2.C.1. Indeed, the Agency can act under CWA Section 404(c) “whenever” it makes the required determinations under the statute, including before a permit application has been submitted. 33 USC 1344(c); 40 CFR 231.1(a), (c); *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 613 (D.C. Cir. 2013). See also Section 2 of the FD. As explained to the commenter and as described in detail in EPA’s response to comment 7.0.1, EPA determined that it was appropriate to develop the 2022 PD using the most current information available to EPA, including the 2020 Mine Plan and the FEIS (see EPA’s response to comment 7.0.1). See also EPA’s response to comment 4.B.27 regarding EPA’s focus on evaluating discharges associated with developing the Pebble deposit.

See also EPA’s response to comment 1.C.1.

5.C.68 Pilot Point Tribal Council (Doc. #2701, p. 1)

The majority of Alaskans support EPA action to end the threat of Pebble and want to see Bristol Bay permanently protected. The Revised Proposed Determination is a good first step but should be strengthened to truly prevent the storage or disposal of mine waste from the entirety of the Pebble deposit, not just limit its development based on past iterations of mine plans. The EPA's action must protect several critical sub watersheds: the North Fork Koktuli, South Fork Koktuli and Upper Talarik Creek, all of which support the productivity of Bristol Bay's wild salmon. The 404(c) action must address downstream impacts to provide lasting protections to the region's headwaters.

The threat of toxic large-scale hard rock mining, like the Pebble deposit, will continue to loom over Bristol Bay until real permanent protections are secured for the region. Years of scientific study and review and a robust administrative record all support the EPA protecting this national treasure. The Pilot Point Tribal Council asks the EPA to protect Bristol Bay's headwaters from all mining at the headwaters of Bristol Bay, not just the small section of the Pebble deposit as identified in the Revised Proposed Determination. Bristol Bay's future generations should not have to live with the threat of mining that would devastate their cultures, communities, and sustainable economy. Please finish the job and ensure that Bristol Bay's pristine lands and waters are truly protected in perpetuity.

EPA Response

Section 5 of the FD was revised in response to comments. See EPA's responses to comments 5.A.1, 5.B.8, and 5.B.15.

TOPIC 6. OTHER CONSIDERATIONS

6.A Wildlife

6.A.1 National Wildlife Federation (Doc. #0129, Public Meeting Statement, p. 1)

Indeed, even the impacts highlighted in the Proposed Determination for informational purposes clearly justify the need more stringent restrictions. These include:

* Significant impacts to non-anadromous fish species and other wildlife

EPA Response

See EPA's response to comment 4.J.6.

6.A.2 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 36–41)

Unacceptable adverse effects on wildlife

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 reduced nutrient availability for the complex food web and would risk far-reaching effects on many species. Cumulative effects to fish and wildlife over long time scales, even from the 20-year mine proposal, will be widespread across the entire Nushagak and Kvichak ecosystems and watersheds. [Enclosed Appx. D at pages 816 to 823, Schindler, Daniel E., Scientific Concerns About the Draft EIS for the Proposed Pebble Mine (June 17, 2019).] In turn, these impacts risk the culture and subsistence of the people of Bristol Bay, as well as the wildlife dependent economics of Bristol Bay.

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. Direct impacts to wildlife from mining the Pebble deposit were not assessed in EPA's BBWA; [BBWA at page ES-4 ("Direct effects of mining on Alaska Natives and wildlife are not assessed.")] however, the BBWA Appendix C, also published separately as a USFWS publication, [Brna, P. J. and L. A. Verbrugge (eds). 2013. Wildlife resources of the Nushagak and Kvichak River watersheds, Alaska. Final Report. Anchorage Fish and Wildlife Field Office, U.S. Fish and

Wildlife Service, Anchorage, AK. 177 pp., available at https://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=516966.] 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.

DOI reiterated its concerns to EPA on September 12, 2014 that 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.” [Letter from Pamela Bergmann, Regional Environmental Officer – Alaska, to U.U. Env’t Protection Agency (Sept 12, 2014), at p. 1.] 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.” [Id, at p. 2.] 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.” [Id.] DOI also explicitly agreed with the conclusions of EPA that “the potential range of available mitigation measures are not adequate to protect the watersheds from unacceptable risks associated with life-cycle operation of large-scale mining of the Pebble Deposit.” [Id, at p. 4.]

Regarding 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.” [BBWA at page ES-2.] 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. [BBWA at page ES-25 to ES-26.]

Throughout the EIS process, cooperating agencies with special expertise, such as U.S. Fish and Wildlife Service (“USFWS”) and Alaska Department of Fish and Game (“ADF&G”), expressed many concerns regarding impacts to wildlife from loss of habitat and habitat fragmentation; behavioral disturbance on large wildlife species such as caribou, moose, and bears; impacts to brown bear ecology and habitats; and potential disturbance impacts to the Mulchatna caribou herd and loss of habitat around the mine site. [Pebble ROD, attachment B3, p. 7. See also, enclosed Appx. C (cooperating agency comments to the Army Corps).]

As the Army Corps concluded in its Record of Decision:

The project would result in the loss of large areas of wildlife habitat that are used seasonally, and year-round by a wide variety of resident and migratory species. Several of the avian species that would experience habitat loss are species of special concern due to population declines. Caribou in the Mulchatna Caribou Herd would experience direct habitat loss and secondary habitat avoidance around the mine site and along the transportation corridor. Brown bears would also experience direct loss of foraging and denning habitat. Travel corridors between Iliamna Lake and the surrounding landscape would be bisected by the port and mine access road along the north shore of Iliamna Lake. Other wildlife species would experience direct habitat loss and may be excluded from preferred food sources, especially if they are located in close proximity to project activities (i.e. brown bears may avoid feeding in salmon streams near stream crossings). Migratory birds. Loss of habitat for amphibians. Loss of habitat and fragmentation for bears, caribou, wolves. Displaced wildlife compete for new feeding, breeding, nesting habitat after loss of preferred habitat so there could be a cascading effect. [Pebble ROD, attachment B7, p. 68.]

EPA Response

Although not a basis for the FD, EPA addresses wildlife in Section 6 of the FD. EPA agrees that wildlife present in the SFK, NFK, and UTC watersheds—several of which are essential subsistence species—would likely be adversely affected by large-scale mining at the Pebble deposit. The 2020 Mine Plan could result in direct and indirect impacts to wildlife species, including behavioral disturbances, injury and mortality, and habitat changes. Additionally, wildlife species would also likely be affected indirectly via any reductions in salmon populations. Marine-derived nutrients imported into freshwater systems by spawning salmon provide the foundation for the region’s aquatic and terrestrial foodwebs, via direct consumption of salmon in any of its forms (spawning adults, eggs, carcasses, or juveniles) and nutrient recycling (e.g., transport and distribution of marine-derived nutrients from aquatic to terrestrial environmental by wildlife).

The Bristol Bay watershed, including the SFK, NFK, and UTC watersheds, supports a historical complement of species, including large carnivores and numerous bird species. EPA recognizes the important environmental, subsistence, and economic role of wildlife in the Bristol Bay watershed. See Section 3 of the FD for more information about Bristol Bay’s ecological resources and the crucial role salmon play in maintaining and supporting

the overall productivity of the Bristol Bay watershed. See Section 6 of the FD for more information regarding wildlife, recreation, and subsistence in Bristol Bay.

6.A.3 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 36–41)

Brown Bears. Brown bears are important to salmon ecosystem function, have a direct link to salmon, and are important to Alaska Native and non-native residents, as well as generating significant tourism opportunities. [BBWA, p. 5-31.] Brown bear estimates in Bristol Bay range from roughly 40 bears per 1,000 km² in the northern Bristol Bay region to 150 bears per 1,000 km² along the shore of Lake Clark. [BBWA, p. 5-32.] A recent study of the economic benefits of Bristol Bay salmon documents the importance of bear viewing activities to the local economy, including noting roughly 90 lodges and camps in Bristol Bay catering to tourists with a primary focus on sportfishing and bear viewing. [McKinley Research Group, The Economic Benefit of Bristol Bay Salmon, p. ES-3, available at: <https://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf>.] Of particular significance, the report notes an estimated 20,000 people annually participate in bear viewing during trips to Katmai National Park and Lake Clark National Park and Preserve. [Id.]

USFWS and Alaska Department of Fish and Game (“ADF&G”), expressed many concerns about the Pebble Project’s impact to brown bears and brown bear habitat. [Pebble ROD, attachment B3, p. 7.] ADF&G specifically noted in the months leading to the Final EIS that “ADF&G believes impacts to bears, and bear related recreation (hunting and viewing) could be significant.” [Enclosed Appx. C, at p. 1830.]

Concerns over impacts to bears continued through the Final EIS and Army Corps Record of Decision. As the Final EIS found: “Brown and black bears may experience a range of potential impacts from the project. This includes loss of habitat due to land conversion, altered feeding, denning, and travel routes, increased mortality (from vehicular collisions, defense of life and property, and interspecific competition from avoidance of preferred feeding areas), and behavioral changes based on avoidance of humans.” [Final EIS, page 4.23-31.] And, according to the Record of Decision, these impacts specifically would impact the movement of bears between Lake Clark and Katmai National Parks. [Pebble ROD, attachment B7, p. 88.] Overall, the Army Corps concluded that potential project impacts to brown bears “could extend for several miles around project facilities” [Pebble ROD, attachment B3, p. 8.] specifically that brown bears would “experience direct loss of foraging and denning habitat.” [Pebble ROD, attachment B7, p. 68.]

EPA Response

See EPA’s response to comment 6.A.2.

6.A.4 World Travellers (Doc. #0274, p. 1)

On Alaska's "Bear Coast," bears feast on abundant salmon each summer, gaining up to 4 pounds a day to hold them over during a long winter. Bears need fish to survive...and fish need clear, clean, protected water -- the very resource this mine would endanger, not to mention the forests and tidal flats where the bears live, which would be devastated by industrialization.

EPA Response

See EPA's response to comment 6.A.2.

6.A.5 Flint Hills EcoVenture, LLC (Doc. #0321, p. 1)

{Bristol Bay is home to the world's largest salmon run. All five Eastern Pacific species spawn in the bay's freshwater tributaries. Along with herring and other fisheries, salmon account for nearly 75% of local jobs.}

(...)

These fish provide a flood of nutrients into the rivers, streams and lakes, feeding giant coastal brown bears, bald eagles, rainbow trout, dolly varden, arctic grayling and whose bodies leave nitrogen in the soil to feed willow trees, and other plants that are food for herbivores like moose.

EPA Response

See EPA's response to comment 6.A.2.

6.A.6 Sitka Conservation Society (Doc. #0464, p. 2)

Bristol Bay is home to incredible biodiversity and unique ecosystems. The watershed provides a vital habitat for 29 fish species, including all five species of salmon. These salmon are the fundamental basis of the region's ecosystems. More than 190 bird species and over 40 terrestrial species, including the world's highest concentration of brown bears, live in the region and owe their continued existence to a plentiful supply of seafood. Pebble Mine would destroy 3,000 acres of wetlands and more than 21 miles of salmon streams if built, posing an existential threat to salmon who spawn in the waters of Bristol Bay and thus compromising all other natural life in the region. Preventing mining in the region, protects the abundant natural life of the region and assures that these ecosystems don't collapse in the face of disturbances.

EPA Response

See EPA's response to comment 6.A.2

6.A.7 Cook Inletkeeper (Doc. #0794, p. 1)

Pebble Mine would also put the Bear Coast of the Alaska Peninsula at risk as well and the sustainable non-extractive industry of bear viewing which brings almost 35 million a year in annual sales. Bristol Bay's incredible annual sockeye return supports not only commercial fishing but the bears and, therefore, bear viewing economies. The proposed transportation corridor would travel across the Alaska Peninsula to the shores of Cook Inlet impacting denning habitat, bear behavior, and other impacts on Alaska's brown bears.

EPA Response

See EPA's response to comment 6.A.2. Regarding the impacts of the transportation corridor, see EPA's response to comment 4.B.50.

6.A.8 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 12)

Comments regarding wildlife species that could be affected if discharges of dredged or fill material associated with mining the Pebble deposit were to occur.

Other than the dependence of wildlife on marine-derived nutrients (MDN) in salmon ecosystems, wildlife impacts fall largely outside of my expertise. That said, the PD provides an excellent summary of the importance of MDN to area wildlife.

EPA Response

See EPA's response to comment 6.A.2.

6.A.9 Bristol Bay Heritage Land Trust (BBHLT) (Doc. #0826, pp. 1–2)

{The following are summaries of a few key reasons BBHLT believes mines of the type and size that have been proposed for these watersheds should be avoided or severely curtailed.}

(...)

Lake Iliamna Seals. In 2017 BBHLT and Pedro Bay Village Corporation executed a perpetual conservation easement to protect 12,700 acres in the archipelago of islands owned by Pedro Bay on Lake Iliamna. The two primary purposes for the easement are: 1.) to protect the spawning habitat of the sockeye salmon that have developed unique strategies for spawning and rearing in these islands; and 2.) to protect haul-outs and pupping islands for this globally rare population of freshwater harbor seals that live in Lake Iliamna.

We are concerned that proposals put forward by the Pebble Partnership to develop a year-round ferry system across the lake from Iliamna to Kokhanok to service the mine and export the ore may cause disruptions to both the seal and salmon populations, and the subsistence use of these resources. We are concerned for the potential impacts of the ferry crossings, both routine and catastrophic, on the seal and salmon populations using these islands in Lake Iliamna should a ferry crossing again be proposed for transporting ore from a mine site to Cook Inlet. The current state of research and suggested areas for additional research on these unique seals can be found at: Jennifer Burns, et. al., Freshwater Seals of Lake Iliamna, in Bristol Bay Alaska: Natural Resources of the Aquatic and Terrestrial Ecosystems, C. Woody ed., J.Ross Publishing, 2018, p. 449.

EPA Response

See EPA's response to comment 4.B.50.

6.A.10 Bristol Bay Heritage Land Trust (BBHLT) (Doc. #0826, pp. 1–4)

{The following are summaries of a few key reasons BBHLT believes mines of the type and size that have been proposed for these watersheds should be avoided or severely curtailed.}

(...)

Impact of Fugitive Dust on Fish and Caribou. Ore extraction, transport, stockpiling, and other handling will generate fugitive dust, some of which will escape the immediate area of the mine. Fugitive dust can be both a physical and chemical stressor on the environment. An analysis of the likely impact of fugitive dust with respect to an earlier version of Pebble's mine plan was undertaken in 2010 by Ecology and Environment, Inc. for The Nature Conservancy and provided to the EPA during the original assessment.

In our comments to the Army Corps of Engineers we specifically noted the lack of information about the potential impact of fugitive dust on the caribou population that frequents the area around the Pebble prospect.

The Bristol Bay watershed is distinctively shrubby with some form of shrub vegetation covering half of the total area in the watershed. The majority of the shrub vegetation is dwarf shrub and low shrub-lichen dominated communities (35%).

Lichens and moss species often comprise a significant component of the dwarf shrub community. M. Carlson, *et. al. Vegetation of the Bristol Bay Watershed*, Bristol Bay Alaska: Natural Resources of the Aquatic and Terrestrial Ecosystems, C Woody, Ed., J. Ross Publishing 2018. (hereafter Woody). Dwarf shrub vegetation dominates the Pebble mine site (54%). DEIS Figure 3.26-2

Caribou are one of the primary large mammal species found in the Bristol Bay watershed. Caribou were a principal source of red meat for the inland Yup'ik, Aleutiq and Dena'ina people in pre-contact Alaska and remained so until the appearance of moose in the early to mid 20th century. Caribou continue to remain an important subsistence species for local residents.

Lichens are a critical part of the diet of the caribou, and the pervasive presence of lichen in the Bristol Bay watershed has supported large herds of caribou. As such the prevalence of dwarf-shrub vegetation throughout Bristol Bay is the foundation of one of the important subsistence food chains in the region.

The Pebble mine site is located within the traditional range of the Mulchatna Caribou herd. The mine site has been a calving and wintering area for the herd. The Mulchatna herd is one of the largest in the Bristol Bay watershed with as many as 200,000 animals in the mid 90s. The number of animals in the herd has decreased in more recent years likely moving west to new food sources. DEIS 3.23-14.

However, "observations from local residents in the eastern part of the Mulchatna caribou herd range indicate that habitat conditions are improving in formerly overgrazed areas, and the population appears to be increasing (Van Lanen 2018)." DEIS 3.23-15

Figure 3.25 of the DEIS shows the seasonal range of the Mulchatna caribou herd for the thirty years between 1981 and 2010. The mine site is on the fringe of high density use areas for the herd during

most of the year. However, the mine site is squarely within the high density use area in winter. Most likely this is because the winter diet of caribou consists primarily of lichen and lichen is a key component of the dwarf shrub community that dominates the mine site. *See Whitten, K in Woody at page 146.*

Lichens are testimonials to floristic cooperation. They are not like ordinary vascular plants, but are, rather, two distinct organisms aligned for mutual benefit. Algal cells intertwine with fungal filaments to produce a plant body that can take a scaly, leafy, or stock and shrub like form. They can grow on rocks or soil or a tree trunk. Unlike ordinary plants, which draw water and nutrients out of the soil, sending this food up from the roots and transporting it to the plant's parts through vessels, lichens are rootless and derive their water and their mineral nutrition from the air. Rain, and the minerals dissolved in it—or even dust particles blown by the wind—land on the lichens body and are gradually dissolved and absorbed into it.

Lichens are ideal organisms to capture air pollution and because they grow so slowly and are long-lived, they can contain the accumulated pollution of many years. *See, Furbish, C. et. al. Lichen-Air Quality Pilot Study for Klondike Gold Rush National Historical Park and City of Skagway, Alaska. December 2000.* While such contamination is bad for the lichens, it could be worse for the caribou, and worse still for those who hunt and eat caribou. When caribou graze on lichens, their principal winter food, they can glean the pollution from many acres and store it in their tissue and bones. So, because of the unusual biology of the lichens, because caribou have a predilection for lichens, and because many villagers in Bristol Bay consume caribou meat annually, contamination caused by hazardous substances generated by fugitive dust off the Pebble mine site and deposited on lichen could be amplified at each successive level of this important subsistence food chain. Such a lichen to caribou to people connection was discovered with respect to radioactive fallout and dampened the enthusiasm for Project Chariot in the 1960s. *See, O'Neal, Dan, The Firecracker Boys, St. Martins Press, 1994 p.p. 228-233, 261.*

EPA Response

EPA recognizes the importance of caribou and the Mulchatna Caribou Herd as a subsistence resource and prey species. Although not a basis for EPA's FD, EPA discusses wildlife and subsistence in Section 6 of the FD. See also EPA's response to comment 6.A.2.

6.A.11 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 36–41)

Caribou. The Bristol Bay watershed supports a substantial and healthy caribou population. As explained by EPA in the 2014 Watershed Assessment:

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 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). [BBWA at page 5-33.]

As explained by ADF&G during the Army Corps permitting process, the proposed Pebble Mine Project presents a clear threat of impacts to caribou populations in the area, and any attempt in the EIS to conclude otherwise was 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.[See enclosed Appx. C at p. 1298 (Comment Response Matrix, State of Alaska Comments on Pebble Project Preliminary Draft EIS, Section 4.23, comment no. 18, page 10).]

Caribou is an important subsistence food for Bristol Bay residents, with upwards of 88% of residents consuming caribou meat. [BBWA at page 5-35 (citing Ballew et al. 2004).] During NEPA scoping, the Army Corps heard from many Bristol Bay residents concerned with impacts from Pebble Mine activities on the Mulchatna Caribou herd. [See, e.g., Draft EIS Appendix K, at page K3.1-6.] 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).” [BBWA at page 5-33.] Caribou are also an important prey species for wolves and brown bears [BBWA at page 12-5.] and impacts to caribou populations would have cascading impacts on other predator wildlife populations.

Concerns over impacts to the Mulchatna Caribou Herd continued through the Final EIS and Army Corps Record of decision. As the Final EIS notes:

* “Caribou and moose would be expected to avoid areas impacted by dust deposition” [Final EIS, page 4.4-12.]

* “the magnitude and extent of the impact would be caribou avoidance around the mine site and transportation corridor due to behavioral disturbance. [...] The duration would be long- term, and last for the life of the project, including during post-closure [...] Impacts would be likely to occur, because there is currently little anthropogenic activity in the area compared to the size of the project.” [Final EIS, pp. 4.23-30 to 31.]

EPA Response

EPA recognizes the importance of caribou and the Mulchatna Caribou Herd as a subsistence resource and prey species. See EPA’s response to comment 6.A.2.

6.A.12 Trustees for Alaska et al. (Doc. #0831, pp. 14–16)

Comments regarding wildlife species that could be affected if discharges of dredged or fill material associated with mining the Pebble deposit were to occur.

The discharge of dredged or fill material associated with mining the Pebble deposit would adversely impact a wide range of wildlife species, both due to direct impacts like habitat destruction and to indirect impacts like reduced prey (e.g., salmon) availability.

Discharges of dredged or fill material associated with mining the Pebble deposit will have negative effects on bear species. The Pebble deposit and the various proposed transportation corridors are near Lake Clark National Park and Preserve, Katmai National Park and Preserve, and the McNeil River State Game Sanctuary and Refuge, all of which are well-known habitat for brown bears. In fact, in 1967, the Alaska State Legislature designated the McNeil River area to “protect the world’s largest concentration of wild brown bears.” [See Alaska Dep’t of Fish & Game, Website, McNeil River — State Game Sanctuary and Refuge Area Overview, <http://www.adfg.alaska.gov/index.cfm?adfg=mcneilriver.main> (Ex. 140).]

This area was enlarged in 1993. The long-term (1976–2017) average number of individual bears annually identified is 94.5 and the long-term average of bear use days (1980–2017) is 2,089. [Griffin, Thomas M. & Edward W. Weiss, 2017, McNeil River State Game Sanctuary Annual Management Report 2017, Alaska Dep’t of Fish & Game, (Griffin 2017)

http://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/mgt_rpts/mcneil_river_state_game_sanctuary_annual_mgt_rpt_2017.pdf (Ex. 141).] But the high bear densities are not limited to the McNeil area. The density of brown bears on the Alaska Peninsula are some of the highest in the world, approaching one bear per square mile. [See Alaska Dep’t of Fish & Game, Website, Brown Bear (*Ursus arctos*) <http://www.adfg.alaska.gov/index.cfm?adfg=brownbear.printerfriendly> (Ex. 142).] As Suring notes in his report, *The Pebble Project and McNeil River Brown Bears*, “any potential negative effects to brown bears that may occur in the vicinity of project activities will have consequences for the brown bear population across a large area.” [See Lowell H. Suring, *The Pebble Project and McNeil River Brown Bears* at 6 (Apr. 2019) (Ex. 24).] Brown bears have large area requirements and home ranges in Alaska that vary from 10 to 50 square miles on the northern islands of southeast Alaska to over 1,000 square miles on Alaska’s North Slope. Males have much larger ranges than females. [See Nature, Brown Bear Fact Sheet, Public Broadcasting Service: Nature (July 9, 2012), <http://www.pbs.org/wnet/nature/bears-of-the-last-frontier-brown-bear-fact-sheet/6522/> (Ex. 143) (“Males have areas of about 200-500 square miles (500-1300 square kilometers), though some have ranges of up to 1615 square miles (4180 square kilometers) in size. Females generally have smaller home ranges, averaging 50-300 square miles (130-780 square kilometers) in size.”).] On the Alaska Peninsula, seasonal ranges average over 100 square miles for females and up to 286 square miles for subadult females. [See Glenn, Leland P. & Leo H. Miller, *Seasonal Movements of an Alaska Peninsula Brown Bear Population*, *Bears: Their Biology and Movement*, Volume 4, A Selection of Papers from the Fourth International Conference on Bear Research and Management, Kalispell, Montana, USA, February 1977, pp. 307-312.

https://www.bearbiology.com/wp-content/uploads/2017/10/Glenn_Miller_Vol_4.pdf (Ex. 144); see also Ex. 24 at 6.] The development of the Pebble deposit will result in the loss of habitat, displacement,

mortality, and reduced reproductive success of bears that frequent McNeil, Katmai, Lake Clark and other nearby habitat. Further, brown bear viewing and hunting are a vital part of the economy in Southcentral Alaska, for both commercial operators and individual recreationists. Impacts from the project, especially the transportation corridors and port sites, will impact bears.

Similarly, the Bristol Bay Watershed draws tens of millions of birds of over 100 species from around the world, to rest, forage, and breed in these productive marine waters, making Bristol Bay one of the most productive areas in the world for marine birds.[See Nils Warnock, Exec. Dir., Audubon Alaska, Letter, Audubon Alaska to Scott Pruitt, Administrator, EPA, Re: Formal Comments for Proposal to Withdraw Proposed Determination to Restrict the Use of An Area as a Disposal Site; Pebble Deposit Area, Southwest, Oct. 17, 2017, at 2 (Ex. 145) ; see also Warnock & Smith, The Importance of Bristol Bay to Marine Birds of the World, in Bristol Bay Alaska Natural Resources of the Aquatic and Terrestrial Ecosystems 263 (Ex. 146).] The Bristol Bay watershed and coastal area is recognized as an area of continental significance to North American ducks, geese and swans.[See Warnock & Smith, (Ex. 146).] Nushagak and Kvichak Bays are Western Hemispheric Shorebird Reserve Network sites of regional importance (with at least 20,000 shorebirds annually or at least 1% of the biogeographic population for a species).[Nils Warnock, Exec. Dir. Audubon Alaska, Letter, Audubon Alaska to Lisa Jackson, Administrator, EPA, July 23, 2012, at 4 (Ex. 147).] The Bays are also identified as globally Important Bird Areas.[Id.] Key coastal and marine bird species dependent on the Bristol Bay region include Steller's Eider (threatened under the Endangered Species Act), King Eider (Audubon Watchlist), Black Scoter (International Union for Conservation of Nature Red List, Audubon Watchlist), Brant (Audubon Watchlist), Emperor Goose (International Union for Conservation of Nature Red List, Audubon Watchlist), Black-legged Kittiwake, Bar-tailed Godwits (Audubon Watchlist), and numerous other seabirds.[See Ex. 145.] In addition to these, the Bristol Bay region also includes the Kittlitz's Murrelet (International Union for Conservation of Nature Red List).[See Kuletz et al., Distribution, Population Status and Trends of Kittlitz's Murrelet *Brachymphus brevirostris* in Lower Cook Inlet and Kachemak Bay, Alaska (May 26, 2011) <http://www.marineornithology.org/PDF/391/39185-95.pdf> (Ex. 148).; Distribution of the Kittlitz's Murrelet (map), Center for Biological Diversity, http://www.biologicaldiversity.org/publications/maps/highlighted_maps/Kitlitzs_murrelet_distribution.html (Ex. 149).] The Kittlitz's Murrelet has undergone steep population declines in several of its core population areas.[Lynn Denlinger, Alaska Seabird Information Series: Kittlitz's Murrelet, USFWS Migratory Bird Management Nongame Program, Nov. 2006,

https://www.fws.gov/alaska/mbsp/mbm/seabirds/pdf/asis_complete.pdf 67 (Ex. 150).] Kamishak Bay is an Important Bird Area of global significance for Glaucous-winged Gull, Rock Sandpiper, Black Scoter, and Steller's Eider, and is an Important Bird Area of statewide significance for Long-tailed Duck, Surf Scoter, and White-winged Scoter.[Audubon Alaska, 2014. Important Bird Areas of Alaska, v3., <http://databasin.org/datasets/f9e442345fb54ae28cf72f249d2c23a9> (Ex. 151).] Discharges from mining would have negative impacts on bird species from: (1) cumulative impacts from the larger mine expansion's destruction of bird habitat; (2) the indirect impacts to piscivorous birds from loss of salmon streams; (3) acute and chronic impacts to birds from exposure to contaminants from a potential tailings

spills and leaks; (4) acute and chronic impacts to birds from exposure to contaminants in the pit lake and tailings ponds; (5) mitigative measures to avoid impacts; (6) spill impacts from toxic reagents; (7) impacts to Steller's Eiders in Bristol Bay; and (8) impacts to bird-related tourism in the region.[See Natalie Dawson, Exec. Dir., Audubon Alaska, Letter, Audubon Alaska to U.S. Army Corps of Engineers, July 1, 2019 at 4–15 (Ex. 152).]

EPA Response

See EPA's response to comment 6.A.2.

Although not a basis for EPA's FD, EPA discusses the potential impacts to wildlife in Section 6 of the FD. EPA incorporated some of the references and additional information provided in this comment in Section 6 of the FD.

6.A.13 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 36–41)

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, in 2014, specifically cited 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 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.

Concerns over impacts to birds continued through the Final EIS and Army Corps Record of Decision. As the Final EIS found: “The project has the potential to directly and indirectly impact breeding, wintering, migrating, and staging bird populations through behavioral disturbance, injury and mortality, and habitat changes.” [Final EIS, page 4.23-15.] And, according to the Record of Decision, the Project would result in “loss of change of breeding and nesting areas, escape cover, travel corridors and preferred food sources for resident and transient” bird species. [Pebble ROD, attachment B7, p. 65.]

EPA Response

See EPA’s response to comment 6.A.2.

Although not a basis for EPA’s FD, EPA discusses the potential impacts to wildlife in Section 6 of the FD. EPA incorporated some of the references and additional information provided in this comment in Section 6 of the FD.

6.A.14 Alaska Wildlife Alliance (AWA) (Doc. #0836, p. 2, 3,4)

The Bristol Bay watershed provides habitat that supports incredible biodiversity, including 29 fish species, more than 190 bird species, and more than 40 terrestrial mammals (EPA, About Bristol Bay).

(...)

The Bristol Bay watershed is also home to brown bear, black bear, moose, caribou, wolves, waterfowl, and many other species of mammals and birds. The federally threatened northern sea otter and Steller's eider occur in the waters of the Cook Inlet, including Kamishak Bay (where they occur in relatively high abundance). Bald eagles commonly nest and feed along the coast and along all the major salmon spawning rivers in the Bristol Bay and Cook Inlet regions, and a relatively high number of golden eagles are found in the proposed project area. Migratory birds, including waterfowl, shorebirds, and landbirds are abundant throughout the proposed project area.

(...)

[T]he Bristol Bay watershed is an area of unparalleled ecological, cultural, and economic value, boasting salmon diversity and productivity unrivaled anywhere in North America. As a result, the region is a globally significant resource. The Bristol Bay watershed provides intact, connected habitats—from headwaters to ocean—that support abundant, genetically diverse wild Pacific salmon populations. These salmon populations, in turn, help to maintain the productivity of the entire ecosystem, including numerous keystone fish and wildlife species. These species, living in intact and healthy habitats, are the bedrock for local economies.

EPA Response

See EPA’s response to comment 6.A.2.

6.A.15 Natural Resources Defense Council (NRDC) (Doc. #0839, pp. 14–15)

Comments regarding wildlife species that could be affected if discharges of dredged or fill material associated with mining the Pebble deposit were to occur.

The Pebble Mine—or any large-scale porphyry ore mining at the Pebble deposit—would cause significant and adverse impacts on wildlife. Salmon, as keystone species [Hauser, *supra*, at 5.] and cornerstone resources, [Mary F. Willson et al., *Fishes and the Forest: Expanding Perspectives on Fish-Wildlife Interactions*, 48 *BioScience* 455, 456 (1998), available at <https://academic.oup.com/bioscience/article/48/6/455/217861> [perma.cc/8GWX-GN89]. (Fish-Wildlife)] are foundational to the health and functioning of coastal ecosystems with salmon runs. As food and nutrient vectors from marine to freshwater environments, salmon are critical food sources for a host of animals and hugely influential to ecosystem productivity through nutrient transport. [Mary F. Willson and Karl C. Halupka, *Anadromous Fish as Keystone Species in Vertebrate Communities*, 8 *Conservation Biology* 489, 490 (1995), available at <http://www.jstor.org/stable/2386604> [perma.cc/D8NT-DZAQ]. (Keystone Species)] Any harm to salmon would also harm all wildlife that rely on them.

Salmon, at all life stages, from eggs to spawned-out carcasses, provide food for a multitude of species from headwater streams to the ocean. [Id. at 489-490.] Terrestrial mammals such as bears, birds, and fish, as well as marine species including beluga whales and sea lions rely on salmon as a major food source. [Id. at 492.] Salmon are also crucial to the health of ecosystems because they function as nutrient “conveyor belts” from marine to freshwater environments when they spawn. [Daniel E. Schindler et al., *Pacific Salmon and the Ecology of Coastal Ecosystems*, 1 *Frontiers in Ecology and the Environment* 31, 31 (2002), available at <http://www.jstor.org/pss/3867962> [perma.cc/FK94-GWPU]. (Pacific Salmon)] Any decline in salmon populations would severely impact this conveyor belt and imperil the upstream environments that rely heavily on these marine-derived nutrients. These nutrients also make their way to terrestrial ecosystems through scavengers and animals that transport carcasses away from streams. [C. Jeff Cederholm et al., *Pacific Salmon Carcasses: Essential Contributions of Nutrients and Energy for Aquatic and Terrestrial Ecosystems*, 24 *Fisheries Vol.* 10, 6, 11 (1999), available at <https://afspubs.onlinelibrary.wiley.com/doi/pdf/10.1577/1548-8446%281999%29024%3C0006%3APSC%3E2.0.CO%3B2>] Decomposing salmon replenishes the soil with nutrients, and this process is thought to play a significant role in the overall productivity of riparian ecosystems. [Id. at 12.] Therefore, salmon are critical to the wildlife of the region, and any loss of salmon would be detrimental to the entire ecosystem.

Not only would mining the Pebble deposit affect salmon and thus the entire ecosystem, but also the mine’s proposed port in Iliamna Bay poses a major threat to the Cook Inlet beluga whales, which are endangered, genetically distinct, and geographically isolated. [Cook Inlet Beluga Whale: Federally Endangered Critical Habitat, Alaska Department of Fish and Game, <http://www.adfg.alaska.gov/index.cfm?adfg=specialstatus.fedhabitat&species=cookinletbeluga>.] The

National Marine Fisheries Service listed the Cook Inlet beluga whale as endangered under the Endangered Species Act in 2008 and designated Iliamna Bay as critical habitat in 2011. [73 Fed. Reg. 62927 (Oct. 22, 2008); 76 Fed. Reg. 20180 (Apr. 11, 2011).] The mine threatens these endangered whales in two major ways: water contamination and increased marine vessel traffic. The dredging necessary to create the port—cited in habitat designated as critical for the belugas—has the potential to re-suspend many of the heavy metals and chemicals that were of concern to the water quality of the watershed. Additionally, the port would cause increased traffic in the area, resulting in increased water pollution, noise, vessel traffic, and subsequently ship strikes on belugas. [National Marine Fisheries Service, Conservation Plan for the Cook Inlet beluga whale (*Delphinapterus leucas*) 1 (2008), available at <https://repository.library.noaa.gov/view/noaa/18275>. (Conservation Plan) at 58-59.]

The innumerable threats to wildlife caused by the loss of the fishery or direct degradation of habitat strongly supports the issuance of a Section 404(c) Final Determination.

EPA Response

Regarding direct and indirect impacts to wildlife, see EPA’s response to comment 6.A.2. Regarding the port, see EPA’s response to comment 4.B.50.

Although not a basis for EPA’s FD, EPA discusses the potential impacts to wildlife and subsistence in Section 6 of the FD. EPA incorporated some of the references and additional information provided in this comment in Section 6 of the FD.

6.A.16 National Audubon Society (Doc. #1745, p. 1)

The proposed Pebble Mine would be North America’s largest open-pit gold and copper mine and directly threatens more than 190 species of birds that migrate there each year, destroying their habitat and contaminating their food sources.

EPA Response

See EPA’s response to comment 6.A.2.

6.A.17 National Wildlife Federation (Doc. #2067, p. 3)

Such infrastructure, whether for the 2020 Mine Plan or any other large-scale mine in the largely intact and wild landscape of the Bristol Bay watershed will cause significant and unacceptable impacts on aquatic resources including by: directly destroying and fragmenting habitat; adding substantial vehicle, vessel and other traffic; and otherwise increasing human-wildlife interactions and disturbances that will increase injury and mortality to wildlife. For example:

Habitat Fragmentation. The impacts of habitat fragmentation are documented and well-known. Studies have shown that the fragmentation of a species’ habitat can threaten that species survival for a variety of reasons. These include: reduction of total habitat area; vulnerability during dispersal to other patches of habitat (increased risk of predation to species during movement); isolation of a species population; edge

effects (e.g., more “edge” habitat that changes the type and distribution of species); and changes in microclimate (e.g., forested areas tend to be shadier, more humid and less windy, but more edge can alter these micro climates). [See, e.g., The Wildlife Society, Fact Sheet, Wildlife Habitat Fragmentation, available at, <http://wildlife.org/wp-content/uploads/2014/05/Wildlife-Habitat-Fragmentation.pdf> (last visited June 25, 2019).]

EPA Response

Habitat fragmentation is noted as a potential impact of the 2020 Mine Plan in Sections 4 and 6 of the FD. See EPA’s response to comment 6.A.2.

6.A.18 National Wildlife Federation (Doc. #2067, pp. 6–8)

3. Impacts to wildlife justify more stringent restrictions to safeguard the Bristol Bay watershed from any large-scale mine.

EPA does not need to evaluate the impacts to wildlife to determine that the 2020 Mine Plan would cause unacceptable adverse effects. However, it is clear that the 2020 Mine Plan or any other large-scale mine would cause unacceptable impacts to wildlife.

As fully recognized in the revised PD, the pristine Bristol Bay watershed “remains largely intact,” [Revised PD at 6-1.] and

Thus, it still supports its historical complement of species, including large carnivores, such as brown bears, bald eagles, and gray wolves; ungulates such as moose and caribou; and numerous bird species. For example, more than 40 mammal species are thought to regularly occur in the Nushagak and Kvichak River watersheds (Brna and Verbrugge 2013). At least 13 of these species are known, or have the potential based on the presence of suitable habitat, to occur in the SFK, NFK, and UTC watersheds: brown bear, moose, caribou, gray wolf, red fox, river otter, wolverine, arctic ground squirrel, red squirrel, beaver, northern red-backed vole, tundra vole, and snowshoe hare (PLP 2011: Chapter 16). One of two freshwater harbor seal populations in North America is found in Iliamna Lake (Smith et al. 1996).

As many as 134 species of birds occur in the Nushagak and Kvichak River watersheds (Brna and Verbrugge 2013), and at least 37 waterfowl species have been observed in the SFK, NFK, and UTC watersheds, 21 of which have been confirmed as breeders (PLP 2011: Chapter 16). The region’s aquatic habitats support migrants and wintering waterfowl, which includes an important staging area for many species, including emperor geese, Pacific brant, and ducks, during spring and fall migrations. Twenty-eight landbird and 14 shorebird species have also been documented in the SFK, NFK, and UTC watersheds (PLP 2011: Chapter 16). The FEIS identifies bird species protected under the Migratory Bird Treaty Act of 1918, the Bald and Golden Eagle Protection Act, and bird species of concern within its mine site analysis area (USACE 2020a: Section 4.23). [Revised PD at 6-1 to 6-2.]

As documented in the many comments submitted in connection with the Pebble Mine, the Bristol Bay watershed is used by tens of millions of birds of more than 100 species from around the world. The watershed is one of the most productive areas in the world for marine birds. And the watershed and its

coast are recognized as an area of continental significance to North American ducks, geese, swans, shorebirds and other species. The Bristol Bay watershed is also home to dense populations of brown bears. The critical importance of this region to fish and wildlife greatly amplifies the need to prohibit significant impacts to this vital ecosystem from any large-scale mine.

As recognized in the revised PD, the 2020 Mine Plan and any “large-scale mining at the Pebble deposit” would result in adverse impacts to these rich wildlife populations. [Revised PD at 6-2.] These impacts would result from “loss of terrestrial and aquatic habitat, reduced habitat effectiveness (e.g., in otherwise suitable habitats adjacent to the mine area), habitat fragmentation, increased stress and avoidance due to noise pollution, and increased conditioning on human food” among many other things. [Revised PD at Section 6-2 and Section 6.] “In addition to direct mine-related effects, wildlife species would also likely be affected indirectly via any reductions in salmon populations.” [Revised PD at 6-2.]

Direct and indirect impacts to wildlife include such things as loss of wetland and upland habitat, loss of stream habitat, fragmentation of habitat, habitat avoidance, behavioral disturbances, and injury and mortality resulting from: construction and operations; noise; the presence of humans and equipment (e.g., vehicles, aircraft, pumps, compressors); collisions with vehicles, equipment, and structures; reductions in water quality; toxic spills; loss or changes to stream and river flows; defense of life and property; altered predator-prey relationships; loss of food sources; and increased opportunities for wildlife and human conflicts (including with the areas large population of brown bears) among other things.

The adverse impacts to wildlife from any large-scale mining of the Pebble deposit, in combination with the many other impacts, justify more stringent restrictions to safeguard the Bristol Bay watershed from any large-scale mine.

EPA Response

See EPA’s responses to comments 4.J.6 and 6.A.2.

6.A.19 Mass Mailing Campaign (Doc. #2537, p. 1)

The Bristol Bay watershed is more than just home for the largest wild sockeye salmon runs in the world, it is home to one of the largest brown bear populations in the world that reside along the Bear Coast including Katmai and Lake Clark National Parks and Preserves.

EPA Response

See Section 6 of the FD for more information about wildlife, Katmai National Park and Preserve, and Lake Clark National Park and Preserve.

6.A.20 Alaska Environment (Doc. #2558, p. 1)

The Bristol Bay watershed is home to the largest sockeye salmon fishery in the world, more than 40 mammal and 190 bird species. It is also one of the last remaining truly wild spaces, with no roads in or out of the bay. Pebble Mine threatens this wild place and the wildlife that depend on it

EPA Response

See EPA's response to comment 6.A.2.

6.A.21 Alaska Environment (Doc. #2664-10, p. 9)

Bristol Bay is an incredible place, as many have said and will say. It's home to over 190 species of birds, a population of seals have made the fresh water of Lake Iliamna home, it would take a very long time to list all of the vibrant life in the Bristol Bay region.

EPA Response

See EPA's response to comment 6.A.2.

6.A.22 Wendy Buzby (Doc. #2664-47, pp. 33–34)

I also am a citizen of this planet just like everybody else. There's going back after this when we're all dead so it seems like anything that we can do to support wildlife itself and that recognizing that we are a piece of that wildlife and that we have the possibility to sustain our own human life, our best interest, by maintaining all life on this planet.

(...)

That is a limited time offer that we have this moment in time to do something about and it's not just contained to Alaska. It's not just contained to the people who are working on or potentially profiting from in some small way in this one lifetime. It's beyond that for our human race. I just hope that we all recognize this chance that we have and act as a we as everybody on this global planet together and not as an eye for a fancy car or a very temporal limited time. I ask that we recognize us as we and not as us or them and that includes all life, whether it swims in the ocean or walks up on the land or flies in the air or we don't even recognize or see acting in this world so what we can do to recognize that we are part of that web.

EPA Response

See EPA's response to comment 6.A.2.

6.A.23 Les Gara (Doc. #0132, p. 2)

{Nationally and locally important wild fish species that grow to magnificent sizes include wild rainbow trout, wild char, wild grayling and other fish which are important fish species to Alaskans and Americans who visit this region to catch those fish, or who just value salmon and non-salmon species of fish in their

wild state.} And mammals that rely on these fish must be considered. The impacts on bears and other animals, including bird life, must be considered.

EPA Response

See EPA’s response to comment 6.A.2.

6.A.24 Loren Karro (Doc. #0847, pp. 2–3)

It is noted in the Proposed Decision that in addition to loosing anadromous stream beds, there would be a great loss of wetlands. The flooding from the mine activities themselves would cause an additional loss of habitat in the mine footprint. This habitat destruction would affect much more than the salmon and other fish in the waters, it could affect the many species of birds and wildlife that also live in the region. “Unlike most terrestrial ecosystems, the Bristol Bay watershed has undergone little development and remains largely intact. Thus, it still supports its historical complement of species, including large carnivores, such as brown bears, bald eagles, and gray wolves; ungulates such as moose and caribou; and numerous bird species. For example, more than 40 mammal species are thought to regularly occur in the Nushagak and Kvichak River watersheds.” [sec 6.1.1] The region supports a large number of commercial hunting guides and their operations. The numbers of brown bear in the area could be directly affected by the lack of salmon, as this is their primary source of protein. A loss of these magnificent animals would also be injurious to the large bear viewing tourism economy. Herbivores such as caribou and moose could also feel the effects of mining operations in the degradation of the tundra and waterways from which they feed. Birds of prey such as bald eagles, peregrine falcon, and various hawks, as well as the geese and ducks, would be effected by the loss of the salmon and other stream occupants on which they feed. This in turn would affect the bird hunting for both subsistence and commercial recreation.

EPA Response

See EPA’s responses to comments 6.A.2 and 6.A.7.

6.A.25 Ivan Weber (Doc. #1029, p. 3, 4)

Of greatest ecological concern to those of us in the distance from Salt Lake City to Bristol Bay are concerns of sockeye salmon, of many species of migratory birds, of fur-bearing mammalian species, and other “charismatic macrofauna” to populate the spectacular parade of zoological wonders that is Arctic and coastal Alaska. The biological fate of Earth is not an optimistic set of prospects, viewed in this light, particularly in the present political context.

(...)

The fact remains that there is a profound disproportion among the quantity and distribution of research into species and ecosystems that populate much of planet, particularly wildlife. Without begrudging studies that have been directed at livestock, or at optimization of domestic animal production, it is extremely rare to encounter circumstances in which research and observation of wild, non-

domesticated animal life is more intensive than of animals bred for human consumption. As a result, it is anything but rare to encounter situations like Bristol Bay (or nearly any other sulfide mine area of influence --- Minnesota's Boundary Waters forest area, Mongolia's steppe, Rio Tinto/Kennecott's area of influence on the Great Basin's salt marshes, for example, all ecologically conspicuous for wildlife values).

EPA Response

EPA's FD is based on an extensive record of scientific and technical information. See Section 3 of the FD for more information about Bristol Bay's ecological resources. See Section 6 of the FD for more information about wildlife.

6.B Recreation

6.B.1 Trustees for Alaska et al. (Doc. #0831, p. 16)

Comments regarding recreational uses that could be affected if discharges of dredged or fill material associated with mining the Pebble deposit were to occur.

The discharge of dredged or fill material associated with mining the Pebble deposit will adversely impact sportfishing, given the well-documented likely adverse effects to the aquatic ecosystem and fisheries. Similarly, bear viewing would be adversely impacted, as bear habitat — both direct losses as well as reduced food availability — would be diminished as a result of the discharges associated with mining the Pebble deposit.

These activities are significant: tourism in the Bristol Bay region produced more than 2,300 seasonal jobs in Alaska and \$67.9 million in labor income in 2019.[McKinley Research Group, The Economic Benefits of Bristol Bay Salmon (Feb. 2021) (Ex. 153), available at: <https://www.bbrsda.com/updates/2021/3/18/new-study-updates-economic-importance-of-bristol-bay-underscores-urgency-in-protecting-the-region>.] More than 20,000 anglers fish recreationally in the region each year, and roughly 100 lodges and camps cater to tourists focused on sportfishing and bear viewing.[Id.] Approximately 20,000 people visited Katmai National Park and Lake Clark National Park and Preserve in 2019 to view bears, spending roughly \$20 million to do so.[Id.] An economic study of the industry estimated total business activity of approximately \$34.5 million in sales and \$10 million in direct wages and benefits from bear viewing in the region.[Young, Taylor B. & Little, Joseph M., May 2019. The Economic Contributions of Bear Viewing in Southcentral Alaska. University of Alaska Fairbanks, prepared for Cook Inletkeeper at 24 (Young, 2019) (Ex. 155).]

EPA Response

EPA recognizes that, next to salmon fishing and processing, recreation is the largest private economic sector in the Bristol Bay region, due mainly to the watershed's remote, pristine wilderness setting and abundant natural resources. Although not a basis for EPA's FD, EPA agrees that discharges of dredged or fill material associated with

developing the Pebble Deposit, as well as construction, operations, and closure of the 2020 Mine Plan, would affect recreational activities on lands surrounding the mine site, including Lake Clark National Park and Katmai National Park, as addressed in Section 6 of the FD.

Section 4 of the FD provides the basis for EPA’s determination that discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. The administrative record supports EPA’s FD. Section 6 of the FD describes additional concerns and information regarding other potential CWA Section 404(c) resources that, although not the basis for the FD, are related to discharges of dredged or fill material associated with developing the Pebble deposit.

6.B.2 All World Travel, Inc. (Doc. #0262, p. 1)

{Please know that many members of the Travel Advisor community absolutely oppose the Pebble Mine project.}

Our industry has already been adversely affected by the Covid pandemic. We need our federal lands to be preserved for animals and the water systems they rely on. Tourism is a huge benefit to these communities and having the environment destroyed by the Pebble Mine – or any other invasive destruction of the land – is a terrible thing to do!

EPA Response

See EPA’s response to comment 6.B.1.

6.B.3 Sitka Conservation Society (Doc. #0464, pp. 2–3)

Bristol Bay is an invaluable recreational area. Because of the immensity of the region’s salmon runs, Bristol Bay is a world-class sports fishing destination. People from far and wide come to Bristol Bay to partake in an incomparable fishing experience and contribute \$90 million annually to Alaska’s economy. Furthermore, sport fishing and the tourism industry employ nearly one-thousand people in the region. The devastation of salmon runs as the result of development in the region would tarnish Bristol Bay’s reputation as one of the last truly wild fisheries. Tourism and sport fishing in Southwest Alaska would dry up and the valuable economic benefits they bring to the region would vanish. Even excluding the environmental damage of a mining project, simply the existence of heavy industry in the region would taint the wild beauty that many sport fishermen come to Bristol Bay to enjoy. Protecting Bristol Bay from this devastation would safeguard the legendary sports fishing opportunities and the associated economic benefits of the surrounding tourism industry.

EPA Response

See EPA’s response to comment 6.B.1.

6.B.4 Trout Unlimited et al. (Doc. #0608, pp. 1–2)

The foundation of a successful business in this industry is clean water and access to streams and land that are still remote and wild. Bristol Bay rivers are some of the most sought-after fishing and hunting destinations in the world. Bristol Bay fishing and tourism industries account for more than 14,000 full and part-time jobs and contribute to a \$2 billion annual fishing economy. Alongside the robust sportfishing and hunting industry, bear viewing tourism is worth more than \$35 million annually, and is also dependent on strong salmon runs to feed the highest concentration of brown bears on the planet. In 2021, the Bristol Bay sockeye salmon fishery reached an all-time record at 66.1 million fish running through the region. The 2022 salmon forecast is projected to exceed last year's record.

EPA Response

See EPA's response to comment 6.B.1.

6.B.5 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 41–43)

Unacceptable adverse effects on recreational areas

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 as the basis of a sustainable, diverse, and important economy and way of life. These values and their importance to the public are described at length in the Army Corps and EPA records. As these records show, the proposed Project would have unacceptable adverse effects on recreational areas.

EPA's 2014 Watershed Assessment notes the unique and valuable recreational resources of the Bristol Bay region: "The uncrowded, pristine wilderness setting of the Bristol Bay watershed attracts recreational fishers, and aesthetic qualities are rated as most important in selecting fishing locations by Bristol Bay anglers." [BBWA, at p. 5-26. The 2022 PD notes that when adjusted for inflation, direct regional expenditures on recreational uses are estimated at more than \$210 million annually. See also 2022 PD at p. 6-3.] EPA determined that these recreational resources generate more than \$69 million annually for sport fishing and hunting and more than \$104 million annually in wildlife view/tourism (expressed in 2009 dollars). [BBWA, at p. 5-26.] A recent study of the economic benefits of Bristol Bay salmon documents tourism in the Bristol Bay region produced more than 2,300 seasonal jobs and \$67.9 million in labor income in 2019. [McKinley Research Group, The Economic Benefit of Bristol Bay Salmon, p. ES-3, available at: <https://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf>.] The Bristol Bay region is also home to 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. [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).]

Many of the proposed project components are located on state-owned lands and waters designated under the state management plans for uses such as recreation, subsistence, and public recreations and tourism. [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_map3-09.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.] Moreover, the proposed Pebble mine would impact nearby Lake Clark and Katmai National Parks. Lake Clark National Park is downwind from the proposed mine. Air pollution and dust from the proposed mine 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. In 2014, concerned about impacts to Lake Clark and Katmai National Park and Preserves, 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.” [Letter from Pamela Bergmann, Regional Environmental Officer – Alaska, to U.U. Env’t Protection Agency (Sept 12, 2014), at page 3.]

Potential impacts to recreation were confirmed in the Final EIS, including impacts specifically to Lake Clark National Park and Preserve, Katmai National Park and Preserve, and the Nushagak River. [Final EIS, p. 4.5-1.] According to the Final EIS, potential impacts include “[a]dverse effects to recreation opportunities and experiences for recreationists participating in hunting, fishing, wildlife viewing, boating, camping, backpacking [...] [d]isplacement of recreationists participating in hunting, fishing,

wildlife viewing, boating, camping, backpacking [...] [a]dverse effects to recreation experiences for visitors flying over [and] [c]hanges to recreational settings.” [Id.]

As the Army Corps Record of Decision went on to conclude, the project would impact Lake Clark and Katmai National Parks due to: reduction of movement of bears between the parks [Pebble ROD, attachment B7, at page 88.] and noise and day and night visual impacts to some parts of the Lake Clark National Park. [Pebble ROD, attachment B7, at page 157 and 164.] Moreover, the Army Corps found that the project mine facilities would lead to direct impacts to portions of the tributaries of the Koktuli watersheds which account for a small portion of recreational fishing effort as well as secondary and cumulative effects to the “suitability of recreational [] fishing grounds as habitat for populations of consumable aquatic organisms” [Pebble ROD, attachment B7, page 141.] as well as secondary impacts to Upper Talarik Creek used for sport fish and recreation “based on flow regime changes.” [Id. at 144.] In particular, the Army Corps noted the Project would impact “important recreational species” such as rainbow trout in NFK, chinook in Nushagak, and sockeye in UTC. [Id.]

EPA Response

See EPA’s response to comment 6.B.1. Regarding the port and transportation corridor, see EPA’s response to comment 4.B.50.

Regarding state-owned lands and the State’s management of resources, see EPA’s responses to comments in Topic 2.C.

6.B.6 Natural Resources Defense Council (NRDC) (Doc. #0839, pp. 15–16)

Comments regarding recreational uses that could be affected if discharges of dredged or fill material associated with mining the Pebble deposit were to occur.

Any mining of the Pebble deposit would result in significant, unacceptable adverse effects on the economic and recreational value of the natural resources in the Bristol Bay region. Bristol Bay is the world’s most valuable salmon fishery, supplying 57% of the world’s wild sockeye, generating \$2.2 billion in annual economic activity, and supporting 15,000 jobs in 2019. [McKinley Research Group, LLC, The Economic Benefits of Bristol Bay Salmon (Feb. 2021) at ES-1 to ES-5, 16, https://stoppebbleminenow.org/wp-content/uploads/2021/03/Summary-Document-Economic-Benefits-of-Bristol-Bay-Salmon-3_17_2021.pdf] Equally as important, in 2017 subsistence fishers caught approximately 116,303 salmon—an estimated 503,890 pounds of usable fish—with a \$5-\$10 million replacement value for Alaska households. [Id. at ES-1.] This translates to about \$4,500 to \$9,000 in nutritional value to each participating household. [Id.] Subsistence fishing is a critical part of the local economy, allowing residents of the region to avoid food insecurity and limit the costs associated with food importation. [Id. at 3.]

Similarly, recreation in the region provides significant economic value: “While in Bristol Bay, sportsmen spend millions and contribute to the employment of lodge owners, guides, pilots, and other staff.”

[Bristol Bay Native Corporation, Economic Value of Bristol Bay: A National Treasure, <https://www.bbnc.net/wpcontent/uploads/2017/05/BBNC-Pebble-Mine-Economic-Value-of-Bristol-Bay.pdf>.] According to a recent study, Bristol Bay tourism generated \$155 million in economic output for Alaska in 2019, including more than 2,300 seasonal jobs and \$67.9 million in labor income. [McKinley Research Group, LLC, The Economic Benefits of Bristol Bay Salmon, Summary (Feb. 2021) at 6.] Roughly 90 lodges and camps in the region cater to tourists, with a primary focus on sportfishing and bear viewing. [Id.] Indeed, that study estimated that, during the last five years, more than 20,000 sportsmen fished in Bristol Bay annually. [Id.] An estimated 20,000 people participated in bear viewing during trips to Katmai National Park and Preserve and Lake Clark National Park and Preserve in 2019. [Id.] A reduction in quality salmon habitat, as described above, would have major implications for Bristol Bay's desirability as a sport fishing destination. Likewise, degraded water quality and poorer fishing stock would irreparably harm the region's wildlife, including several species of charismatic megafauna like bears, which are a magnet for hunters and tourists to the region.

The harm to these vital Alaskan industries caused by the threatened degradation to fisheries, wildlife, and local ecosystems would be substantial. EPA has more than enough evidence to justify a finding that mining the Pebble deposit would significantly and unacceptably endanger economic and recreational value in the region.

EPA Response

See EPA's response to comment 6.B.1.

6.B.7 Anchorage Audubon Society (Doc. #0864, p. 1)

Sports-fishing lodges provide trips to fish for some of the largest chinook salmon on the planet. Commercial fishers in Nushagak Bay harvest fish heading up the river. Both sports and commercial harvests are regulated by the Department of Fish and Game to ensure sustainable fish runs.

EPA Response

EPA recognizes that the abundance of large game fishes makes the region a world-class destination for recreational anglers. Section 6 of the FD addresses recreation, including sportfishing, in the Bristol Bay region.

6.B.8 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 52)

VII. EPA's "Other Considerations" Do Not Support 404(c) Action

EPA discusses several factors under "Other Considerations," but explicitly states that none of those factors are a basis for the Revised Proposed Determination. [Revised Proposed Determination § 6.1.] Because they are not a basis for the Revised Proposed Determination, we will not spend much time on them here. However, we note that none of these factors were found to involve significant impacts in the FEIS.

For example, EPA lists recreational impacts in Section 6.1.2, but the FEIS found impacts on recreation to be insignificant:

Recreational use at the mine site is estimated to be low; use consists of some sport hunting, sport fishing, and occasional snow- machining. . . . The acres directly impacted do not see much recreational use and the magnitude of impacts would be measured by the small number of users that would be displaced to other nearby state or federal lands where similar recreation opportunities and settings exist. [FEIS at 4.5-4.] . . .

[T]he mine site and immediate surrounding area is not popular for sport hunting, fishing, and other recreation uses and potential users would be displaced to other state lands in the area with similar habitat. [Id. at 4.5-5.]

Thus, the record does not support a finding of significant adverse effect on recreation, including recreational fishing.

EPA Response

EPA does not make any finding of significance in the FD regarding impacts to recreation. However, information and analysis in the FEIS support EPA’s conclusions in the FD that construction, operations, and closure of the mine site would affect recreational activities on lands surrounding the mine site, including Lake Clark National Park and Katmai National Park. Although not a basis for EPA’s FD, this information about recreation is provided in Section 6 of the FD.

6.B.9 Bear Trail Lodge (Doc. #2667-32, pp. 73–74)

I would ask that you activate these protections as soon as possible. Our clients pay upwards of \$11,000 a week to visit Bristol Bay, and expect a true wilderness experience. They don’t pay that amount of money to see roads, fences, buildings, and certainly not industrial mining complexes. The Bristol Bay fishing locations in Bristol Bay - sport fishery has built a reputation of being one of the premier destination hunting and fishing locations in the world, because of the trophy fish my guests seek. And they can always be found in our pristine waters. They will not be found if Bristol - if Pebble is built. Our clients will not come back if Pebble is built.

My lodge is one of nearly 100 lodges and outfitters that generate \$155 million in economic output every year. I hire my guides and lodge staff locally, and they are included in over 2300 jobs that are generated from Bristol Bay’s sport fishing industry. I have raised my family in Bristol Bay. They have participated in the success of my lodge. They have gone on to higher education, and are returning to the Bay. They would like to take over, and continue to own and operate my lodge as a family business. If Pebble Mine goes forward, I cannot in good conscience, pass my lodge along to my kids, because I will not succeed for them in that environment.

I hope that you will finalize the strongest, and most comprehensive protections for Bristol Bay through Section 404C of the Clean Water Act as soon as possible so that my family has some security to look forward to in their future, and the future of Bristol Bay.

EPA Response

See EPA's response to comment 6.B.1, as well as EPA's responses to comments in Topic 1.

6.B.10 Trout Unlimited (Doc. #2666-8, pp. 25–26)

And I have the great pleasure of working with hunting, fishing, and bear viewing guides in the Bristol Bay region, who care deeply about this resource in which they work, and live. And they take time out of their busy guiding schedules to tell their visitors, and visitors to this place about why this place needs permanent protection.

And so, today I'm here to testify on, on behalf of those guides who cannot be here because it's the second week of their guide season, and cannot exactly leave their guides on, on the side of the river. But they have a strong message. And it's to please finalize strong and comprehensive Clean Water Act protections for Bristol Bay, and to do it as soon as possible.

There are over a hundred lodges and outfits in Bristol Bay that generate roughly \$155 million annually in economic output. And those jobs - those - that industry contributes nearly 2,300 seasonal jobs, equating to 1400 year-round jobs in that. And Bristol Bay is one of the most sought after hunting and fishing destinations on the planet, one that is a hundred percent dependent on clean water and healthy fish habitat.

Guides have stood next to the overwhelming majority of Bristol Bay locals who have opposed the Pebble Mine, and now are doing it again to ensure Pebble can't return in the future. Please finalize the strongest and most comprehensive Clean Water Act protections as possible, and to do it quickly.

EPA Response

See EPA's response to comment 6.B.1, as well as EPA's responses to comments in Topic 1.

6.B.11 Charles Borbridge (Doc. #2097, p. 1)

{Bristol Bay is unique in the world. Its unique in the size of the lake and river systems; the salmon runs it supports; and the benefits realized by all participants in the salmon run. Making all this possible is the unique pristine waters of the Bristol Bay watershed.

Damage to the pristine waters would harm those that annually benefit.}

{...}

The tourist industry creates direct and indirect jobs for travelers drawn to wildlife and pristine wilderness.

EPA Response

See EPA's response to comment 6.B.1.

6.B.12 World Travellers (Doc. #0274, p. 1)

A solid majority of Alaskans oppose the Pebble Mine, including the United Tribes of Bristol Bay, who know the mine would have "unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas," according to the EPA's own assessment. It would also jeopardize the value of sustainable bear viewing tourism, worth almost \$35 million annually. No short-term gain is worth such long-term damage.

EPA Response

See EPA's responses to comments 6.A.2, 6.B.1, and 6.C.1, as well as EPA's responses to comments in Topic 4.

6.C Water Supplies**6.C.1 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 43–45)**

Unacceptable adverse effects on drinking water supplies

The proposed Pebble Mine Project would impact Bristol Bay's pristine surface waters currently used as drinking water sources and with great cultural significance. The Alaska Native people of Bristol Bay come from three different cultural traditions—Aleut, Yup'ik, and Dena'ina 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 values, such as generosity, respect for elders, self-esteem, and cultural respect. [See Fall, James A., et al., *An Overview of the Subsistence Fisheries of the Bristol Bay Management Area*, at 2-3, ADF&G Special Public. No. BOF 2009-07 (Nov. 2009), available at www.adfg.alaska.gov/specialpubs/SP2_SP2009-007.pdf.]

In addition to the important subsistence and sense of place and culture from Bristol Bay's waters, residents throughout the Bristol Bay region rely on the clean, pristine waters for their drinking water and for religious significance. In the Environmental Protection Agency's 2014 Bristol Bay watershed assessment appendix Traditional Ecological Knowledge and Characterization of the Indigenous Cultures of the Nushagak and Kvichak Watersheds, Alaska, Dr. Boraas and Dr. Knott note the religious significance of clean water for the Great Blessing of the Water at Nushagak River ice sites every winter. [BBWA, Appendix D.] They further explain the interconnected sacredness of salmon and water to the residents of Bristol Bay this way:

They continue to practice a first salmon ceremony paying homage to the first salmon caught in the spring and the renewal of their cycle of life. The rivers are blessed by priests annually in the Great Blessing of the Water at Theophany, celebrating the baptism of Christ and symbolically purifying the water of contamination preparing it for the return of the salmon. This ceremony, for Orthodox Yup'ik and Dena'ina, is the pure element of God expressed as sanctified nature. The holy water of the rivers derived from this ceremony is used to bless the homes, churches, and people and is believed to have curative powers. [BBWA, Appendix D, pages 2-3.]

As to drinking water, the Final EIS documents that many of the communities in the region obtain their drinking water from wells and surface water sources. As disclosed in the Final EIS, three community water systems in the Iliamna Lake area extract surface water for domestic use: Nondalton, Kokhanok, and Igiugig. [Pebble Final EIS, at page 3.16-61.] In addition, individuals use the surface water in Iliamna Lake and along the Nushagak River as a source of drinking water. While according to the Final EIS, "It is unknown/not documented if private users use surface water as a drinking water source" [Pebble Final EIS, at page 4.27-5.] it is documented in work from PLP's contractor as well as in public hearing testimony to the Army Corps that people throughout the region use surface water as drinking water:

* "our water intake is from Lake Iliamna that provides drinking and cooking water." [Pebble Project—Scoping Meeting, Kokhanok, Alaska (April 10, 2018) Volume I, page 12.]

* "Iliamna Lake is so pristine to where we drink it." [Pebble Project—Scoping Meeting, Kokhanok, Alaska (April 10, 2018) Volume I, page 13.]

* "we're able to take a drink right out of the lake as we're traveling around." [Pebble Project—Draft Environmental Impact Statement Public Hearing, Homer, Alaska (April 11, 2019), Volume I, page 9.]

* If you ever had a drink of Lake Iliamna water, you know the magnitude of how important this is [...] If this mine is permitted, I'm concerned we will no longer be able to drink this water, whether it's from dust pollution, spills, or [...] from runoff and effluent near a new road or a tailings pond failure." [Pebble Project—Draft Environmental Impact Statement Public Hearing, Igiugig, Alaska (March 28, 2019), Volume I, page 37.]

* "Our clean water is so pristine that we can go down to the beach and drink off of it." [Pebble Project—Draft Environmental Impact Statement Public Hearing, New Stuyahok, Alaska (March 29, 2019), Volume I, page 20.]

The Army Corps and EPA records both include evidence of the use of surface waters in Bristol Bay as drinking waters and detail the negative impacts from mining the Pebble deposit on water quality. As disclosed in the Final EIS, the water contained in PLP's proposed tailings storage facilities and water management ponds will exceed numeric water quality criteria for: aluminum, antimony, arsenic, beryllium, cadmium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, silver, and zinc. [Pebble Final EIS, Executive Summary, at pages 104 and 106.] Contact water and dust at the mine site would contain the same contaminants in levels that exceed water quality standards. [Pebble Final EIS, at page 4.18-4 and Executive Summary, at page 106] As also disclosed in the Final EIS, the

project would require water treatment in perpetuity—during Closure Phases 3 and 4 the influent water into the water treatment plants will exceed the state’s numeric water quality criteria for: TDS, sulfate, aluminum, antimony, arsenic, beryllium, cadmium, cobalt, copper, iron, lead, manganese, mercury, molybdenum, nickel, selenium, silver, and zinc. [Pebble Final EIS, at page K4.18-56 to 59.] Moreover, the Final EIS discloses reductions of flow, increases of temperature, increases of total suspended solids and salts, increases of total dissolved solids, and changes to dissolved oxygen content from mine site operations and construction. The Final EIS discloses that the water associated with the project’s construction and operation will exceed water quality criteria for many contaminants many times over, for example:

[Table 6. Table of Predicted Water Quality Exceedances (mg/L) (90th Percentile) During Pebble Mine Operations included in submission here] [Predicted water quality parameters found in Pebble Final EIS, Appendix K4.18; WQC standards found in Pebble Final EIS, Appendix K3.18.]

For TDS, sulfate, antimony, arsenic, cadmium, copper, lead, manganese, mercury, selenium, and silver, the predicted water quality during operations is between two to seventy times the most stringent water quality criteria. Treatment of such high levels of contaminants is very complex and subject to many different failure scenarios. The project’s ability to maintain compliance with state water quality standards is entirely dependent on the success of the water treatment systems. [Pebble Final EIS, at page 4.18–13 (“Assuming these protections are adopted, direct and indirect impacts of treated contact waters to off-site surface water are not expected to occur.”).] Even then, the Final EIS acknowledges that the mine is likely to cause exceedances of water quality standards: “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.” [Pebble Final EIS, at page 4.18–13.] Exceedances of water quality criteria pose a threat to human health in drinking water and to aquatic life.

EPA Response

EPA agrees that the waters within the Bristol Bay watershed have cultural significance, including supporting a subsistence way of life, and also serve as public water supplies for many communities. Section 6 of the FD provides a description of the cultural importance of these waters and the subsistence way of life for many of these communities.

Although effects on public water supply are not a basis of the FD, water quality effects are discussed in Appendix B of the FD. Section 4 of the FD describes the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas.

6.C.2 The Pebble Limited Partnership (PLP) (Doc. #1912, pp. 52–53)

{VII. EPA’s “Other Considerations” Do Not Support 404(c) Action

EPA discusses several factors under “Other Considerations,” but explicitly states that none of those factors are a basis for the Revised Proposed Determination. [Revised Proposed Determination § 6.1.]

Because they are not a basis for the Revised Proposed Determination, we will not spend much time on them here. However, we note that none of these factors were found to involve significant impacts in the FEIS.}

(...)

Similarly, EPA lists public water supplies as a factor in Section 6.1.3, but there is no record support for the notion that the Project impacts public water supplies. The FEIS indicates that impacts to shallow groundwater at the mine site would be limited to the capture zone and thus would be treated prior to discharge. [Id. at 4.18-27.] The FEIS similarly found impacts to surface water quality to be insignificant, finding that with Alaska state permit conditions and mitigation “direct and indirect impacts of treated contact waters to off-site surface water are not expected to occur.” [Id. at ES 70.] The FEIS also found that “dust deposition would not result in exceedances of the most stringent water quality criteria (see Table K3.18-1) when added to baseline conditions or WTP outflow conditions.” [Id. at 4.18-20.]

EPA Response

Section 6 of the FD describes additional concerns and information that, while not the basis for EPA’s final determination, are related to discharges of dredged or fill material associated with developing the Pebble deposit. The FD is clear that effects on public water supply are not a basis of the prohibition or restriction (see Section 4 of the FD). However, EPA disagrees that there is no record to support the concern that construction and operation of the 2020 Mine Plan could result in impacts to public water supplies or surface water quality. Water quality effects are discussed in Section 6.1.3 and Appendix B of the FD.

6.C.3 Dan Dunaway (Doc. #2667-29, p. 69)

I’m deeply opposed to this mine. That country is so porous, a lot of these test holes they did, some water came up in ‘em, and there’s still artesian wells. If they start digging a giant hole, I don’t know what’s going to happen to the water, and where it’s going to go. I don’t think anybody else does.

So I’m opposed from, from the scientific view. I think that we don’t have the technology to properly, to safely develop that mine. So I’m asking that you do all you can to protect it.

EPA Response

EPA agrees that construction and operation of the 2020 Mine Plan may affect water quality. Section 3 of the FD describes the importance of groundwater exchange with surface waters, and Section 4 of the FD describes the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas. Water quality effects are discussed in Section 6.1.3 and Appendix B of the FD.

6.C.4 Darlene Wyagon (Doc. #2667-42, p. 99)

{So we really appreciate that if you could make it happen not to have Pebble Mine operate, because their dams, and their holding things will really contaminate the fish.}

And - and at home, our drinking water, right from the well, was bad. We had to get our drinking water from the river. So it serves us, also. And that was the purest - nothing in that water - no chlorine, no fluoride.

EPA Response

EPA agrees that construction and operation of the 2020 Mine Plan may affect water quality. Water quality effects are discussed in Section 6.1.3 and Appendix B of the FD.

6.C.5 Frank Woods (Doc. #2667-48, p. 110)

I've seen in this country, people come in and take 90% of natural resources out of rural Alaska. Less than 10% come back in. In the mining industry, we all know the history. We don't want history to repeat itself. They will go until somebody tells them to stop, or until it's all gone.

We live in America, where those we do not want, the damage - we know the history, and the science behind it. Our own past biologist just said water is the worst - is, is their number one enemy for the mining industry, because it will affect our water.

EPA Response

EPA agrees that construction and operation of the 2020 Mine Plan may affect water quality. For EPA's discussion of spills and failures, see Section 6 of the FD. Water quality effects are discussed in Appendix B of the FD.

6.C.6 Les Gara (Doc. #0132, p. 3)

{Two toxic and potentially fallible tailings dams are proposed.}

(...)

{The major danger is that they will leach, and toxins will find their way to two of Bristol Bay's major drainages, the nearby Koktuli River and Upper Talarik Creek.}

(...)

This "smaller" Phase One open pit mine will also return 6.8 billion gallons of treated wastewater every year back into these drainages.

What else? Water will be taken from Upper Talarik Creek and the Koktuli, as groundwater and 80 miles of streams will be filled and destroyed.

EPA Response

EPA agrees that construction and operation of the 2020 Mine Plan may affect water quality and will require long-term water treatment. Section 3 of the FD describes the importance of groundwater exchange with surface waters, Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas, and Section 6 of the FD provides a discussion of spills and failures. Water quality effects are discussed in Appendix B of the FD.

6.C.7 Charles Borbridge (Doc. #2097, p. 1)

As the mine operates it will create tailings that form a massive toxic dump the will, with time, continue to pollute and damage the water shed essentially forever.

EPA Response

EPA agrees that construction and operation of the 2020 Mine Plan may affect water quality and will require long-term water treatment. Water quality effects are discussed in Section 6.1.3 and Appendix B of the FD.

6.C.8 Charles Borbridge (Doc. #2097, p. 1)

What makes the Pebble mine dangerous

the pebble deposit is located near a volcano. It produces sulfide metal ore that becomes acidic when contacting air or water. This leeches metal into waters near the mine. The Pebble location has both streams and significant ground water movement. The streams help rear salmon and the ground water movement help transport nutrients. The proximately to water and its constant movement also means that avoiding, containing, and controlling mining pollutants such as metals is essentially impossible. This is after all not a desert.

EPA Response

EPA agrees that construction and operation of the 2020 Mine Plan may affect water quality. Section 3 of the FD describes the importance of groundwater exchange with surface waters, and Section 4 of the FD describes the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. Water quality effects are discussed in Section 6.1.3 and Appendix B of the FD.

6.D Effects of Spills and Failures

6.D.1 National Wildlife Federation (Doc. #0129, Public Meeting Statement, p. 1)

{Indeed, even the impacts highlighted in the Proposed Determination for informational purposes clearly justify the need more stringent restrictions. These include:}

(...)

* The potential for a catastrophic tailings dam failure; and

* The certain risk of toxic leaks and spills, even with ongoing maintenance. A recent study shows that the 5 largest hardrock mines in Alaska suffered an average of more than 300 toxic spills each and every year for 26 years—releasing 2.3 million gallons and 1.9 million pounds of hazardous materials into the ecosystem during that time.[Susan Lubetkin, Alaska Mining Spills, A comparison of the predicted impacts described in permitting documents and spill records from five major operational hardrock mines (April 2022)(www.earthworks.org/AlaskaMiningSpill).]

EPA Response

Although not a basis for the FD, EPA discusses adverse effects on aquatic resources, including water quality, from a tailings dam failure and other spills and failures in Section 6.2 of the FD. The FD includes a reference to the report mentioned in this comment that documents spills that have occurred at Alaska mining operations, including some related to water treatment (Lubetkin 2022). Water treatment plant incidents are likely to occur where water is being treated for such a long time. However, it is difficult to describe the impacts of a water treatment plant incident since impacts would depend on the extent of the spill and response. Because spills and failures were not a basis for the FD, EPA’s analysis in the FD focused on spill scenarios that were addressed in the Final EIS and on tailings dam failure. See also EPA’s responses to comments 4.B.50 and 4.J.6.

6.D.2 Wrangell Cooperative Association (Doc. #0158, p. 1)

The Wrangell Cooperative Association is familiar with the potentially-catastrophic impacts of mining; we have been fighting for protections to the salmon and myriad subsistence food sources in the traditional and ancestral homelands of the Shtax’heen Kwan – the People of the Stikine. So far, transboundary mining across the Canadian border has not sufficiently planned for tailings dams failures – such as the Mount Polley Mine Disaster of 2014 – or provided true consultation with Tribal governments whose health, history, culture, and way of life lies within the Stikine watershed.

EPA Response

Although not a basis for the FD, EPA discusses adverse effects on aquatic resources from spills and failures, including a potential tailings dam failure, in Section 6.2 of the FD.

Comments on transboundary mining are outside the scope of this CWA Section 404(c) action.

6.D.3 Washington State Attorney General Office (Doc. #0183, pp. 2–3)

Discharge of fill and dredged material associated with mining of the Pebble deposit would permanently and unavoidably destroy habitat at the headwaters of two major Bristol Bay rivers, and adversely affect downstream reaches by harming water quality and altering stream flows.[Prop. Determination at 4-4 – 4-11; Id. at 4-38 – 4-41.] Failure of a pipeline or tailings dam that released mineral concentrates or mining waste would have devastating environmental consequences, including destruction of spawning habitat by sedimentation and contamination of rivers with arsenic, cadmium, lead, copper, and other toxic metals for miles downstream.[Id. at 6-6 through 6-13. The Draft Environmental Impact Statement noted that a tailings spill would be “extremely difficult” to recover, and that water quality could be impacted “on a timescale of decades.” U.S. Army Corps of Engineers, Pebble Project Draft Environmental Impact Statement (2019) at 4.27-65. In the case of a large spill, naturally flushing tailings out of the drainages might require “decades to centuries.” Prop. Determination at 6-13.], [The proposed tailings dam is “nearly unprecedented in scale relative to historical dam failures.” Lynker Technologies, LLC, A Model Analysis of Flow and Deposition from a Tailings Dam Failure at the Proposed Pebble Mine at ES-a. (2019).] Damage to the Bristol Bay fishery could persist for decades,[Prop. Determination at 4-4 – 4-11; Id. at 4-38 – 4-41; U.S. Env'tl. Protection Agency, An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska, EPA910-R-14001ES, Executive Summary 19-23 (Jan. 2014).] and would far outweigh the dubious economic gains from mining.

EPA Response

See EPA’s response to comment 6.D.1.

6.D.4 Midgard Environmental Services LLC (Doc. #0616, p. 1)

However, additional significant impacts are also almost certain should the proposed 2020 mine plan be allowed to proceed. These include leakage of acid rock drainage to groundwater; failure to consistently meet discharge water quality criteria given the unprecedented scale and complexity of the proposed water treatment plant; and ongoing small operational spills and leaks (see attached comment letter to the Army Corps of Engineers on the Final EIS dated August 19, 2020). There would also be a significant risk of large-scale tailings impoundment geotechnical failure in this very rainy and seismically active area.

EPA Response

See EPA’s response to comment 6.D.1.

6.D.5 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 10)

Despite brief discussion of accidents and spills, the conclusions of the PD ignore the inevitability of such events that would result in Clean Water Act violations to water quality standards among other potential adverse effects. The likelihood of building and operating an open-pit copper, gold, and molybdenum mine and treating its waste in perpetuity without accidents or spills is nil. Failing to include that certainty in the conclusions of the PD vastly underestimates the extent of adverse effects of mine development.

EPA Response

See EPA's response to comment 6.D.1.

6.D.6 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 21)

Pg. 4-32: Page 4-32. "⁵⁷ EPA Region 10's review only evaluated changes to streamflow with the addition of treated water. If WTPs were unable to discharge treated water for any period of time, streamflow reductions experienced in downstream anadromous fish streams would be greater than are discussed herein (USACE 2020a: Section 4.16)."

Comment: Not only might WTPs be unable to discharge treated water periodically, they will inevitably have to bypass treatment and release uncontrolled amounts of untreated, potentially highly toxic water. This circumstance among other accidents and spills don't receive sufficient—if any—consideration in the PD, and as such serves as another example of the vast underestimation of adverse effects of mine construction and operation.

EPA Response

The FD did not consider all possible spill scenarios because spills, accidents, and failures (including WTP incidents) were not the basis for the FD. See EPA's response to comment 6.D.1.

6.D.7 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 23)

Pg. 6-9: "Although predicted mercury concentrations in tailings are low, even very low amounts of total mercury could result in bioaccumulation and biomagnification in fishes."

Comment: Selenium is another metal of concern with potential to bioaccumulate and biomagnify in fishes and other animals, with potential to cause deformities and other problems ([Zamzow, K., A. Sobolewski, A. Maest, C. Frissell, S. O'Neal, and G. Reeves. 2019. Selenium issues in the Pebble Project Draft EIS Position Paper. Report prepared for US Army Corps of Engineers in response to request for Public Comments. 38 pp.]).

EPA Response

EPA agrees that there is the potential for accidents and spills to affect water quality and, therefore, fish populations. Water quality effects are discussed in Appendix B of the FD. See also EPA's response to comment 4.B.50.

6.D.8 Trustees for Alaska et al. (Doc. #0831, pp. 17–18)

Comments regarding drinking water supplies (including public water supplies and private sources of drinking water such as streams or wells) that could be affected if discharges of dredged or fill material associated with mining the Pebble deposit were to occur.

Mining the Pebble deposit would require the capture and treatment of unprecedented amounts of contaminated waste water in a seismically active region.[Earthworks, Pebble Mine: Unprecedented Waste Water Treatment Requirements, available at: <https://inletkeeper.org/wp-content/uploads/2019/02/Pebble-WTP-fact-sheet-2019.pdf> (Ex. 154); see also Bonnie Gestring, U.S. Operating Copper Mines: Failure to Capture & Treat Wastewater (May 2019) (Ex. 26).] Storing toxic waste in perpetuity poses very real risks of leaching and contamination of groundwater, which could reach drinking water supplies in downstream communities. Also, tailings storage facilities can and do fail; such catastrophic failure could also contaminate drinking water supplies. For example, the tailings dam failure at the Mount Polley Mine discharged approximately 17 million cubic meters of water and 8 million cubic meters of tailings, significantly impacting downstream waters.[British Columbia, Mount Polley Mine Tailing Dam Breach, available at: <https://www2.gov.bc.ca/gov/content/environment/air-land-water/spills-environmental-emergencies/spill-incidents/past-spill-incidents/mt-polley.>]

EPA clearly has the authority to consider the downstream water quality impacts of dredge or fill activities when exercising its authority under section 404(c). As the DC Circuit held in denying a challenge to EPA's use of its 404(c) veto authority against the Spruce Mine in West Virginia: "We have little trouble concluding that, as part of the EPA's overall authority, section 404(c) authorizes it to assess the effects of the fill beyond the fill's footprint and that nothing in the statute prohibits water quality from being part of that assessment." [Mingo Logan Coal Co. v. Env't Prot. Agency, 829 F.3d 710, 725 (D.C. Cir. 2016).]

Multiple studies and expert reports highlight the high potential for a porphyry mine in the Bristol Bay watershed to cause devastating negative effects on downstream water quality. Richard Borden, an environmental scientist and manager with over 30 years of experience in the mining and consulting industries, noted that "[e]ven a release of just five percent of the bulk or pyritic tailings is likely to have profound, permanent negative impact on downstream aquatic ecosystems and fisheries." [Richard K. Borden, Pebble Mine Draft EIS Comments on Geotechnical and Spill Risks at 1 (May 13, 2019) (Ex. 28).] He also observed that the Pebble deposit's "active seismic setting, wet climate, sensitive receiving environment and large mass of chemically reactive tailings all contribute to a very high innate risk of catastrophic release." [Id. at 2.] Similarly, Dr. Sobolewski, an environmental consultant with 30 years of professional experience focusing on the evaluating of water treatment systems at mining operations,

commented on the risk of discharges of contaminated water from normal operations of the proposed mine, even absent a spill scenario: “[g]iven the sensitivity of the receiving environment, the water treatment scheme proposed in the FEIS is unacceptably risky. It will fail to meet stringent water quality criteria for a number of contaminants, including selenium, to which productive ecosystems downstream from the proposed Pebble Mine are especially sensitive.”[André Sobolewski, Review of water treatment plants proposed in FEIS for Pebble Project at 1 (Aug. 23, 2020) (Ex. 14); see also Adam Wlostowski, Ph.D., Comments on Pebble Project Final EIS (Aug. 7, 2020) (Ex. 16).]

In addition, a 2017 report by Earthworks, *The Track Record of Environmental Impacts Resulting from Pipeline Spills, Accidental Releases and Failure to Capture and Treat Mine Impacted Water*, U.S. Gold Mines Spills & Failures Report, evaluated gold mine toxic releases in the U.S.[See Bonnie Gestring & John Hadder, July 2017, U.S. Gold Mines Spills & Failures Report: *The Track Record of Environmental Impacts Resulting from Pipeline Spills, Accidental Releases and Failure to Capture and Treat Mine Impacted Water* (Ex. 156).] The report found that 27 of 27 mining operations have experienced at least one pipeline spill or other accidental release.[Id. at 8.] Twenty of the 27 mining operations have failed to capture or control contaminated seepage.[Id.] The report concluded that “mines with high acid generating potential and in close proximity to surface and groundwater are at highest risk for water quality impacts.[Id.] In a 2012 report, Earthworks compiled the record of pipeline, seepage control and tailings impoundment failures at operating copper porphyry mines in the U.S.[See Bonnie Gestring, U.S. Copper Porphyry Mines Report: *The Track Record of Water Quality Impacts Resulting from Pipeline Spills, Tailings Failures and Water Collection and Treatment Failures*, July 2012, Revised November 2012 (Ex. 157).] That report concluded that “water quality impacts to surface and/or groundwater are common at currently operating copper porphyry mines in U.S., resulting from three failure modes (pipeline spills or other accidental releases, failure to capture and treat mine seepage, and tailings spills or impoundment failures).”[Id. at 5.] The report found that these failures resulted in a variety of environmental impacts including contamination of drinking water aquifers.[Id.]

EPA Response

See EPA’s response to comment 6.D.1. Although EPA agrees that it has broad authority to consider water quality impacts when exercising its CWA Section 404(c) authority, such impacts were not the basis for this action. See Section 4 of the FD for a description of the basis for EPA’s findings of unacceptable adverse effects on anadromous fishery areas.

6.D.9 Natural Resources Defense Council (NRDC) (Doc. #0839, pp. 16–17)

Comments regarding drinking water supplies (including public water supplies and private sources of drinking water such as streams or wells) that could be affected if discharges of dredged or fill material associated with mining the Pebble deposit were to occur.

The proposed Pebble Mine would require an unprecedented amount of water treatment during both operations and closure, risking significant impacts to water supplies in the Bristol Bay watershed.

Pebble would far outpace the “level of necessary water treatment [at] other hard rock mines in the United States.” [Bristol Bay Native Corporation, The Pebble Final EIS understates impacts and risks to salmon and the people of Bristol Bay and is not adequate to support issuance of a Clean Water Act permit (July 2020), <https://www.bbnc.net/wp-content/uploads/2020/07/FEIS-Inadequate-to-Support-Clean-Water-Act-Permit.pdf>.] Mining expert Richard Borden—former Head of Environment for Rio Tinto’s Copper, Copper & Diamonds and Copper & Coal Product Groups who was involved in the environmental, permitting and closure work at over fifty mines, projects and operations—identified several “problematic water management issues” with the proposed Pebble Mine, including: “1) water treatment practicability, 2) constructability and performance of water containment structures, 3) groundwater quality impacts, and 4) water treatment requirements during construction.” [Letter from Richard Borden, Midgard Environmental Services LLC, to Shane McCoy, Program Manager, U.S. Army Corps of Engineers, re Pebble Mine Draft Environmental Impact Statement Summary Comments (June 18, 2019).] According to Borden, “mine water treatment at the scale and complexity required at Pebble is unprecedented, and has never been attempted anywhere else in the world.” [Letter from Richard Borden, Midgard Environmental Services LLC, to Shane McCoy, Program Manager, U.S. Army Corps of Engineers re Review of the Pebble Final Environmental Impact Statement (Aug. 19, 2020).] Yet PLP only conceptually addressed the unprecedented volume of wastewater and the advanced technology required to treat the billions of gallons of wastewater:

[Pebble] designs are “at a conceptual stage of development and there is limited ability to identify potential significant failures of the treatment strategy”. It is highly unusual for a mining project to have advanced this far in the permitting process without any detailed design, laboratory-scale and pilot-scale testing of such a critical technical component. [Id.]

Because in 92% of copper mines in the United States “water collection and treatment systems have failed to control contaminated mine seepage,” [Earthworks, U.S. Copper Porphyry Mines: The Track Record of Water Quality Impacts Resulting from Pipeline Spills, Tailings Failures and Water Collection and Seepage Treatment Failures, July 2012 (Rev. Nov. 2012), https://www.earthworks.org/cms/assets/uploads/2012/08/Porphyry_Copper_Mines_Track_Record_-_8-2012.pdf.] it is reasonable to assume that the Pebble Mine—with its conceptual and unprecedented water treatment strategies—would also fail, threatening irreversible and far-reaching environmental damage.

Further, a dam failure could cause catastrophic damage to water supplies. As Borden noted, the proposed Pebble Mine “will be built in a seismically active region, with a very wet climate and an extremely sensitive downstream aquatic environment.” [Letter from Richard Borden, Midgard Environmental Services LLC, to Shane McCoy, Program Manager, U.S. Army Corps of Engineers re Review of the Pebble Final Environmental Impact Statement (Aug. 19, 2020).] The main embankment of Pebble’s proposed bulk tailings storage facility “will be taller than 99% of the tailings dams constructed in the world.” [Id.] Yet Pebble’s embankment designs are “only conceptual in nature” and “additional field investigation is required.” [Id., citing FEIS at Section 4.27.8.6 and Appendix K4.15.] According to

Borden, “credible risks of catastrophic failure remain” and were not analyzed during the permitting process:

The arguments provided in the FEIS for not analyzing the impacts of a credible, large-scale failure are not technically compelling and sometimes misleading. It is standard practice in the mining industry to analyze the potential impacts of very low probability but very high consequence events to aid in risk management. Given the high risks and significant uncertainties, it is inexplicable why the FEIS does not evaluate any significant bulk tailings releases to the downstream receiving environment. [Id.]

Both the unprecedented water treatment plans and potential for catastrophic dam failure associated with mining the Pebble deposit could cause devastating negative effects on water supplies in Bristol Bay.

EPA Response

See EPA’s response to comment 6.D.1.

6.D.10 World Wildlife Fund (WWF) (Doc. #1739, p. 2)

WWF also appreciates the discussion about other adverse effects of concern associated with discharges of material from the Pebble deposit. Adverse effects from accidents and failures such as a tailings dam failure are likely to persevere “in perpetuity” and have profound ecological ramifications for the entire area.

EPA Response

See EPA’s response to comment 6.D.1.

6.D.11 National Wildlife Federation Action Fund (Doc. #1740, p. 1)

{Pebble Mine would cause far-reaching, catastrophic harm to thriving habitat that supports hundreds of fish and wildlife species and the most valuable wild salmon fishery in the world, threatening thousands of jobs, the salmon-based cultures of Alaska Natives, and unparalleled recreational opportunities.}

Any other large-scale hardrock mine would also devastate the region, as has happened in other parts of Alaska. Each of the 5 largest hardrock mines in Alaska suffered an average of more than 300 toxic spills each and every year for the past 26 years, releasing millions of gallons of toxic waste into Alaska’s healthy waters.

EPA Response

See EPA’s response to comment 6.D.1.

6.D.12 The Pebble Limited Partnership (PLP) (Doc. #1912, p. 52, 53)

{VII. EPA’s “Other Considerations” Do Not Support 404(c) Action

EPA discusses several factors under “Other Considerations,” but explicitly states that none of those factors are a basis for the Revised Proposed Determination. [Revised Proposed Determination § 6.1.] Because they are not a basis for the Revised Proposed Determination, we will not spend much time on them here. However, we note that none of these factors were found to involve significant impacts in the FEIS.}

(...)

EPA also lists spills as a consideration in Section 6.2, including the potential impacts of a catastrophic tailings storage facility (“TSF”) failure. [Revised Proposed Determination at 6-6 to 6-14.] The record in this case demonstrates that the risk of a catastrophic TSF release is not reasonably foreseeable, and therefore any impacts from such an event are not “probable impacts.” In the FEIS, the District reviewed estimates of the probability of tailings dam failures, which range from one failure for every 714 dam-years to 250,000 dam-years. [FEIS at 4.27-102.] The FEIS found that the proposed Pebble design significantly reduces the risk of these types of failures: “The Applicant’s bulk TSF design is different than that of most other historic and current TSFs. The proposed design is especially distinct when compared to most historic mines that have experienced large failures.” [Id. at K4.27-4 (“The Applicant has proposed a design for the bulk TSF that would minimize surface water storage above the tailings and promote unsaturated, or dryer, conditions in the bulk tailings through drainage provisions.”).] As discussed in the FEIS, the tailings storage facilities that have been shown to be the most robust and resistant to failure are those that have periodic technical review by qualified engineers throughout the lifetime, including after closure. [Id. at 4.27-103.] The Alaska Dam Safety Program would require this periodic technical review throughout the life of the proposed facility. [Id. at 4.27-103.] Thus, the already low risk of dam failure would be further reduced by the safety measures that will be in place for the Project. After evaluating the design of each embankment, and assessing the likelihood of a wide range of potential failure modes, the probability of a full breach of the bulk or pyritic TSF tailings embankments was assessed to be extremely low, and therefore was not reasonably foreseeable. The FEIS found: “the probability of a full dam breach to be very low for the bulk TSF (i.e., would require a lengthy causal chain of unlikely events).” [Id. at ES 100.] EPA’s speculative statements about the risk of a catastrophic TSF failure thus have no support in the record and do not rise to the level of probable impacts that may be evaluated under Section 404(c).

EPA Response:

The commenter is correct that the PD did not rely on tailings dam failure as its basis, and that has not changed for the FD. See EPA’s response to comment 6.D.1.

Regarding the statements about the FEIS, during the EIS process, EPA requested that a tailings dam failure be analyzed due to the conceptual nature of the dam design and lack of a confidence-level assessment of the failure modes considered in PLP’s Failure Modes Effects Analysis (EPA 2019b). In addition, the dominant cause of failures arises from deficiencies in engineering practices associated with the spectrum of activities embraced by design, construction, quality control, and quality assurance (Morgenstern 2018).

There is credible information highlighting that, even assuming that the tailings dam is adequately designed, dam failure could still happen due to weak engineering during construction and operations. Establishment of an Independent Tailings Review Board (ITRB) and regular reviews by the ITRB are the best practices to protect against this and ensure that tailings dams continue to perform as designed during construction, operations, and closure (Global Industry Standard on Tailings Management 2020). The commenter points out that the State of Alaska would require periodic technical review. The State of Alaska dam safety regulations require periodic review by the dam owner (11 AAC 93), but do not appear to require regular independent review by an ITRB. EPA believes that all of these factors add uncertainty to the FEIS conclusion related to failure probabilities, so at this time EPA disagrees that evaluating a failure scenario is speculative.

6.D.13 National Wildlife Federation (Doc. #2067, pp. 2–3)

Indeed, the Pebble Mine’s water treatment facilities and tailings pits must never leak, fail, or not work as “promised” in perpetuity to avoid catastrophic water quality and ecosystem-wide impacts. Given the ubiquitous leaks that plague mines in Alaska and across the country, and the dangerously high rate of tailings dam failures, unacceptable system-wide and catastrophic harm would be all but inevitable at any large-scale mine in the Bristol Bay watershed.

In this regard, it is important to recognize that the protections provided through Clean Water Act section 404(c) do not come with a time limit or expiration date. Unacceptable impacts from spills and leaks that happen now or 20 years from now are still unacceptable under section 404(c). Catastrophic impacts from the failure of a storage facility that happens 20, 50, or even more than 100 years from now are still unquestionably unacceptable under section 404(c).

EPA Response

As the commenter remarks, there is not a time limit or expiration date on the FD. Regarding the part of the comment related to failures, see EPA’s responses to comments 6.D.1 and 4.J.6.

6.D.14 National Wildlife Federation (Doc. #2067, pp. 4–5)

Culverts can also fail to convey water due to landslides or, more commonly, floods that wash out undersized or improperly installed culverts. In such failures, the stream would be temporarily impassible to fish until the culvert is repaired or until erosion re-establishes the channel. If the failure occurs during a critical period in salmon migration, effects would be the same as with a debris blockage (i.e., a lost or diminished year-class).

Culvert failures also would result in the downstream transport and deposition of silt, which could cause returning salmon to avoid a stream if they arrived during or immediately following the failure.

Deposition of silt would smother salmon eggs and alevins if they were present, and would degrade downstream habitat for salmonids and the invertebrates that they eat. Blockages of culverts could persist for as long as the intervals between culvert inspections. We assume that the transportation. [Id. at 18]

EPA adds that “long-term fixes may not be possible until conditions are suitable for culvert replacement, and these fixes may not fully address fish passage, which may be reduced or blocked for longer periods.” [Id. at 19]

EPA’s 2014 analysis also finds that, “In surveys of road culverts, 30 to 61% are impassable to fish at any one time.” [Id. at 17] This means that “salmon spawning may fail or be reduced and the streams would likely not be able to support long-term populations of resident species able to support long-term populations of resident species.” [Id.]

Especially given the region’s extreme weather, it can be expected that culvert failures and fish blockages may take some time to be identified and addressed. Moreover, the impacts of these failures could be more extreme over time, including over the likely full life span of any large-scale mine in the project area.

EPA Response

See EPA’s response to comment 4.B.50.

6.D.15 National Wildlife Federation (Doc. #2067, p. 5)

iii. Spills. The transportation corridor creates the very high risk of multiple large and small spills of many pollutants that have highly toxic effects, [See e.g., USEPA 2014 Assessment at 19 (addressing toxic effects on invertebrates and fish).] including: diesel fuel, heavy fuel oil, copper-gold ore concentrate, processing chemicals including sodium ethyl xanthate and cyanide, and molybdenum product concentrate among other things. These spills, which could have highly significant impacts either individually or cumulatively, could happen at multiple points along the transportation corridor including at the mine site, on the roadways, at transfer points, at shore-based facilities, and at marine-based facilities. The impacts of such spills will be exacerbated by the difficulty of responding in such a remote location and in responding during difficult weather conditions that can often make it extremely challenging to get equipment and people to the site of a spill and to safely and effectively operate response equipment. Spill prevention plans often fail or are not followed, especially in remote locations with challenging weather conditions.

EPA Response

See EPA’s response to comment 4.B.50.

6.D.16 National Wildlife Federation (Doc. #2067, pp. 5–6)

2. Impacts from toxic leaks and spills justify more stringent restrictions to safeguard the Bristol Bay watershed from any large-scale mine.

EPA does not need to evaluate the impacts of toxic leaks and spills to determine that the 2020 Mine Plan would cause unacceptable adverse effects to aquatic resources. However, it is clear that toxic leaks and spills resulting from the 2020 Mine Plan or any other large-scale mine would cause unacceptable adverse impacts.

Toxic leaks and spills are a regular occurrence at hardrock mines in Alaska, even for mines much smaller than the 2020 Mine Plan, causing highly significant impacts to fish and wildlife resources and the ecosystem. A study released in April 2020 shows that the five largest hardrock mines in Alaska suffered more than 8,150 total spills between 1995 and 2020—an average of more than 300 toxic spills each and every year for 26 years. These spills released 2.3 million gallons and 1.9 million pounds of hazardous materials—including extremely hazardous cyanide and hydrochloric acid—into the ecosystem. Of these spills, 40% were caused by equipment failures. [Susan Lubetkin, PhD, Alaska Mining Spills, A comparison of the predicted impacts described in permitting documents and spill records from five major operational hardrock mines (April 2022) (www.earthworks.org/AlaskaMiningSpill). A copy of this report is provided as Attachment A to these comments.] Each of these five mines is substantially smaller (both in terms of total deposit size and annual mining rates) than the 2020 Mine Plan. [Id.; see also Stuart Levit and David Chambers, Comparison of the Pebble Mine with Other Alaska Large Hard Rock Mines, Center for Science in Public Participation February, 2012. A copy of this comparison is provided at Attachment B to these comments.]

These problems are ubiquitous at mines across the country. Indeed, 92% of U.S. open-pit copper mines fail to adequately capture and treat wastewater resulting in significant impacts to water quality. [Bonnie Gestring, Earthworks, Pebble Mine: Unprecedented Waste Water and Perpetual Pollution, Feb. 2019, available at, <https://earthworks.org/blog/pebble-mine-unprecedented-waste-water-and-perpetual-pollution/>.] Copper contamination in water – even at relatively low levels – can negatively impact salmon and other fish including by impairing olfactory function, making them more susceptible to predation, and impairing their ability to locate their natal streams, as documented by the American Fisheries Society. [Comments of American Fisheries Society, to Program Manager, US Army Corps of Engineers, June 13, 2019.] As EPA determined in 2014, mining copper will degrade streams throughout the basin, negatively impacting salmon and other fish populations [US EPA, An Assessment of Potential Mining Impacts of Salmon Ecosystems of Bristol Bay, Alaska, Executive Summary, Jan. 2014 (USEPA 2014 Assessment), available at, https://www.epa.gov/sites/production/files/2015-05/documents/bristol_bay_assessment_final_2014_es.pdf.] and adversely affecting whales, eiders, and otters that depend on fish as their source of food and that rely on the health of this system to survive and thrive.

The risks of leaks and spills at the Pebble Mine location are aggravated by the remote, harsh, and seismically active location of the Pebble deposit and by the extremely complex, unproven, and untested

water treatment system that has been proposed to process the mine's billions of gallons of highly toxic wastewater—factors that are not affected by mine size.

The adverse impacts resulting from the certain toxic spills and leaks that would occur, in combination with the many other impacts, justify more stringent restrictions to safeguard the Bristol Bay watershed from any large-scale mine.

EPA Response

See EPA's response to comment 6.D.1.

6.D.17 National Wildlife Federation (Doc. #2067, pp. 8–10)

Impacts associated with the high risk of a storage facility collapse justify more stringent restrictions to safeguard the Bristol Bay watershed from any large-scale mine.

EPA does not need to evaluate the impacts of a storage facility collapse to determine that the 2020 Mine Plan would cause unacceptable adverse effects. However, it is clear that such a collapse—which has a high probability of happening—would result in catastrophic impacts, regardless of mine size.

It is well documented that large mine storage tailings facilities collapse with dangerous frequency, and when they do, the results are catastrophic to people and the environment. [See e.g., World Information Service on Energy Uranium Project, Chronology of Major Tailings Dam Failures (last updated 9 Aug 2022) (<https://www.wise-uranium.org/mdaf.html>). This non-exhaustive list documents 51 major tailings dam failures since just 2010 and 150 since 1961.] For recent examples, one need look no further back than the 7 documented major collapses that have happened in just the past year (November-July 2022). [World Information Service on Energy Uranium Project, Chronology of Major Tailings Dam Failures (last updated 9 Aug 2022) (<https://www.wise-uranium.org/mdaf.html>). A copy of this chronology is provided at Attachment C to these comments.] A 2019 study found that the frequency and magnitude of tailings storage facility failures has doubled over the last 50 years. [Santamarina, L. A., and R. C. Torres-Cruz. 2019. Why coal ash and tailings dam disasters occur. *Science* 364:526– 528.] A 2015 report titled *The Risk, Public Liability & Economics of Tailings Storage Facility Failure* also found that the rate of serious tailings dam failures is increasing; that the rate of failures is propelled by, not in spite of, modern mining practices; and that the cost of cleanup exceeds what mining companies can afford. [Lindsay Newland Bowker & David M. Chambers, *The Risk, Public Liability, & Economics of Tailings Storage Facility Failures* (July 21, 2015) https://earthworks.org/cms/assets/uploads/archive/files/pubs-others/BowkerChambers-RiskPublicLiability_EconomicsOfTailingsStorageFacility%20Failures-23Jul15.pdf] This report concluded that regulators must “look beyond ‘mechanisms of failure’ to the fundamental financials of the miner, the mine, and mega trends that shape decisions and realities at the level of miner and individual mine.” [Id. at 2.]

A tailings storage facility at the Pebble Mine could have as high as a 20% probability of failure over a 100-year life of the mine—and such a failure would release millions of tons of toxic waste into the

ecosystem with devastating results. [Wobus, T. 2019. A model analysis of flow and deposition from a tailings dam failure at the proposed Pebble Mine. Contract Number LYNK-2018-179. The Nature Conservancy, Boulder, Colorado.; DeMarban, A. 2019.

Fishermen's group calls Corps' analysis of potential tailings dam failure at Pebble 'woefully inadequate.' Anchorage Daily News (March 1) (available at <https://www.adn.com/business-economy/2019/03/02/fishermens-group-calls-corps-analysis-of-potential-tailings-dam-failure-at-pebble-woefully-inadequate/>.) The tailings facility's susceptibility to failure is evident on the face of its basic characteristics: the facility will be located in a seismically active and geologically and hydrologically sensitive area; the facility will contain acid- and selenium-generating rock; the facility will have an enormous tailings facility (that could reach 226 meters high, making it one of the tallest tailings storage facilities in the world); and the facility must be maintained in perpetuity. [Id.] These characteristics would apply to any large-scale mine in the region.

A detailed analysis [Wobus, T. 2019. A model analysis of flow and deposition from a tailings dam failure at the proposed Pebble Mine. Contract Number LYNK-2018-179. The Nature Conservancy, Boulder, Colorado. This analysis "used publicly available data describing the physiography and hydrology of the region, and data published by PLP describing the proposed TSF design and other mine site characteristics, to build a model of tailings release and downstream transport. We developed our model using the FLO-2D software package, one of the few flood modeling packages capable of simulating the non-Newtonian flows that characterize tailings failures, and one that is commonly utilized by the mining industry for similar purposes (e.g., Knight Piesold, 2014; Tetra Tech, 2015). We used a comprehensive sensitivity analysis to evaluate how outcomes vary with different model parameters, and we developed a set of failure scenarios to bracket the range of potential downstream impacts for different release volumes and durations."] of the impacts of a complete breach of the Pebble Mine tailings facility prepared for the Nature Conservancy reached the following chilling conclusions:

Under all of the scenarios tested, our model results indicate that the tailings from a dam breach would travel more than 75 kilometers (~50 miles) downstream, beyond the confluence with the Mulchatna River, where the majority of our simulations end. Over the entire modeled reach, the mudflow fills the valley bottoms, spreading tailings across the off-channel habitat in the floodplains. The tailings within this limited model domain alone would be deposited in approximately 250 kilometers (155 miles) of streams that are mapped as salmon habitat (Johnson and Blossom, 2018), and approximately 700 kilometers (435 miles) of streams that have been identified as potentially suitable for salmon spawning and/or rearing (Woll et al., 2012). In these simulations, up to 80% of tailings are still moving through the downstream boundary of the model.

In the limited number of simulations where we expanded our model domain, the results indicate that the tailings under most scenarios would continue beyond the confluence with the Nushagak River, more than 130 kilometers (~80 miles) downstream. In these simulations, approximately 50% of the tailings are still moving through the downstream boundary of this model. Given the fine-grained nature of the material, it is extremely likely that these tailings would continue to Bristol Bay, where they would

eventually settle out in the Nushagak River estuary. While we do not simulate the long-term fate of these tailings after the initial flood wave passes, the DEIS itself acknowledges that clean-up would be unrealizable in the event of a large-scale failure, and that natural attenuation would likely take decades.

With more than 130 years of sustainable harvest, Bristol Bay ranks among the most important wild salmon fisheries on earth (Hilborn et al. 2003, Knapp et al 2013). Yet the risks associated with a large-scale failure of the proposed tailings storage facility at Pebble have not been evaluated in the Draft Environmental Impact Statement that is currently under review (USACE 2019). Based on our analysis, the impacts of such a failure could be catastrophic to salmon habitat in the Nushagak watershed and should not be ignored in the EIS process. [Id. at Executive Summary.]

As noted by the American Fisheries Society, “[t]hree recent tailings storage facility failures reinforce the high risk of mining in the Bristol Bay headwaters and the specific risk of attempting to retain tailings and contaminated water behind an unstable earthen tailings storage facility in perpetuity. The Mount Polley Mine in British Columbia and the Fundao, and Feijo mines in Brazil all experienced tailings facility failures in similar mining situations causing impacts such as human deaths, contaminated drinking water, destruction of aquatic life, and fisheries impacts.” [Comments of the American Fisheries Society.]

The catastrophic impacts of a tailings dam failure, the high risk of such a failure in the remote and seismically active restricted area, and the need to maintain the tailings dam in perpetuity, in combination with the many other impacts, justify more stringent restrictions to safeguard the Bristol Bay watershed from any large-scale mine.

EPA Response

EPA agrees that consequences of a tailings dam failure would be severe. See EPA’s response to comment 6.D.1.

6.D.18 Donald Apokedak (Doc. #2667-23, pp. 61–62)

But has anybody been up to the Pebble Mine area? Can you show the hands out here? Trapping, you know, up there, Nushagak - I’ve been up there. And that’s all valley to the Nushagak, and over to Iliamna Lake, you know. Do you ever think about pouring water on a high spot, and watch it drain? That’s where it’s gonna go. You know, you just - I don’t see any way that they can hold water back there. If there’s no snow one winter, two winters, you know, maybe. But you know, we’ve got seasons. So every year, it’s going to have a lot of snow on the mountains up there. And there’s no way to stop that, you know, tailings.

EPA Response

See EPA’s response to comment 6.D.1.

6.D.19 Dan Dunaway (Doc. #2667-29, p. 69)

I also - there's many, many stream crossings. And I've watched the stream crossing just on our highway system, road system here. It's really hard to properly maintain and install those. And I'm not confident that they could keep them going, to allow good fish passage. So, I ask you to do all you can to protect this, and stop this mine.

EPA Response

See EPA's response to comment 6.D.14.

6.D.20 Dagen Nelson (Doc. #2667-47, pp. 106-107)

Yes, there are those who claim that they have the smarts and technologies to create a mining operation that will never affect the lands, airs, and waters I call home, and love. I do not believe them.

I ask you, does not the mining industry's track record speak loudly? Why is it that there are dead mining areas left all around the Earth, and mining periodically - mines periodically failing today? I have been following natural disasters, such as earthquakes, tsunamis, hurricanes, typhoons, floods, and constant weather pattern changes for many years. It appears to me that all the technology and preparations we deal - to deal with natural disasters have failed us many times. What would happen if such a disaster should occur in and around the location of the proposed Pebble Mine? I could only imagine.

Just in the past seasons, we have seen what Mother Earth and its forces have done to many areas around the world. And I ask - how is it possible to build a hazardous waste containment that will not fail? We've spent billions and billions of dollars around the globe, to fighting to save our lands, air, and water, and still, we are getting our butts beaten to death. When are we going to say enough is enough, and stop creating other potential risks or disasters to the dwindling wildernesses, lands, and waters that have provided for our people's existence for thousands of years.

EPA Response

See EPA's response to comment 6.D.1.

6.D.21 National Wildlife Federation (Doc. #2664-2, p. 4)

A recent study shows that the five largest hard rock mines in Alaska suffered an average of more than 300 toxic spills each and every day, each and every year, excuse me, for 26 years, releasing massive amounts of hazardous materials into the ecosystem. Nothing, absolutely nothing can be maintained in perpetuity, and certainly not in this remote watershed. In short, any hard rock mine guarantees unacceptable destruction and toxic poisoning of this pristine ecosystem. National Wildlife Federation, again, urges the EPA to quickly issue a final determination that protects this incredible ecosystem from the 2020 mine and any other large scale mine.

EPA Response

The FD includes a reference to the recent study referred to in the comment that documents spills that have occurred at Alaska mining operations (Lubetkin 2022).

See EPA's response to comment 6.D.1.

6.D.22 Earthworks (Doc. #2664-11, p. 10)

I'd like to focus my comments tonight on the track record of copper porphyry mines in the US.

(...)

In 2019, we completed a report that reviewed the track record of currently operating open pit copper porphyry mines representing 99% of US copper production. And our research found that 93% failed to capture and control waste water resulting in significant water quality impacts, and 100% of the mines experienced spills or other accidental releases. In addition to the profound impacts from dredge and fill activities that have already been identified during the 404(c) process, these types of water quality impacts are simply incompatible with protecting our nation's most productive wild salmon fishery.

EPA Response

See EPA's response to comment 6.D.1.

6.D.23 Santa Claus (Doc. #2664-27, p. 22)

{In my opinion, the Pebble limited partnership in Northern Dynasty continue to evade questions about Pebble Mines, proposed ultimate size and how much they intend to mine. The greater the mine size, the more tailings, and other waste that will generate.} Worldwide, open pit mines with earth and tailing dams fail at a 10% rate.

EPA Response

See EPA's response to comment 6.D.1.

6.D.24 Les Gara (Doc. #0132, p. 3)

Two toxic and potentially fallible tailings dams are proposed. That's where most of the removed earth and the toxic ore, plus tons of added water that will add stress to the "protective" dam walls, will be stored. Until they fail, as many expect, they'll "permanently" hold heavy concentrations of pyrite (which turns to sulfuric acid when exposed to air and water). The world has seen catastrophic dam breaches from smaller mines, without an earthquake. I'm not willing to risk the highest quality wild fisheries in the world with a larger dam in an earthquake-prone region. As the Exxon Valdez reminds us, spills happen.

These toxic open, uncovered tailings dams will cover a massive 3,700 acre area. That's just for the false Phase One Project that will be multiplied in size by 800% when it is transformed into the full project Pebble concedes it will pursue.

The major danger is that they will leach, and toxins will find their way to two of Bristol Bay's major drainages, the nearby Koktuli River and Upper Talarik Creek. Upper Talarik drains into Lake Iliamna, the Kvichack River and then Bristol Bay. The prized Koktuli drains into the Mulchatna and then Nushugak Rivers before hitting Bristol Bay.

EPA Response

See EPA's response to comment 6.D.1.

6.D.25 Les Gara (Doc. #0132, p. 4)

How often will there be human error, or dangers that come with cost saving efforts that have been proven to result from a pay structure upper level management will receive? The danger goes up as employees are paid more for cutting costs, and in many instances, cutting corners.

How safely will the toxic chemicals used in the initial ore separation on-site be handled and stored, in an area of wetlands and streams and wind that can carry toxins downstream?

EPA Response

Human errors could be a cause for aspects of the spill and failure scenarios evaluated in the FD, although EPA did not evaluate all possible types of errors.

See EPA's responses to comments 6.D.1 and 6.D.12.

6.D.26 Barry Santana (Doc. #0157, pp. 1-2)

The associated risk to the downstream fishery, both stream habitat and water quality are, in my opinion, unacceptable. This would be a very serious issue in the event of a catastrophic failure of the TSF structures or in the event that water management of contents and/or leakage of the dams occur

EPA Response

See EPA's response to comment 6.D.1.

6.D.27 Dietrich Hoecht (Doc. #0172, pp. 3-5)

Beyond the ordinary 'discharge of dredged or fill material' scope one must examine the catastrophic failure of the containment dams and ponds. Such resulting mudflow will tear through previously spread tailing deposits and wash this mud.

(...)

Dam features and potential failure

The proposed dam is said to be 545 feet in height - some sources say 700 feet - over two stretches of 7.2 and 2.6 miles. The required integrity of such a tailings dam implicitly requires an effective life of 10,000 years, as an expert has stated. The toxicity of the tailing slurry will never be neutralized. Hence, any excessive leakage or dam break will predictably cause catastrophic damage to downstream ecology, especially to the salmon existence. Not only would acid destroy the spawning grounds, but a spill would bring metal contamination, which could severely destroy aquatic life, if not kill it completely. No follow-on silting could physically cover up a toxic layer in a rapidly flowing creek and river. Further, the traditional construction of a containment dam is most often a pile-up of rubble, mine excavations and tailings sediment. Structural reinforcements and seepage barriers of concrete and bentonite clay have rarely been used in the past, and may not be feasible for a tall and wide Pebble dam.

2. Pebble Dam particular problems Note that the mine pond layout includes seepage ponds below the containment dams. Thereby it is acknowledged that the hydraulic properties of such tailing dams routinely causes water and tailings mud to drain into these seepage containments. The following are the structural problems for the Pebble Mine complex that apparently have been insufficiently addressed in the permit request:

- 2.1 Seepage and 'piping' (i.e. hollowing) at the dam base are a real threat. At 700 ft water column the plain water pressure at the base is 300 psi, and near 1000 psi if the gravity pressure effect is multiplied by high mineral content of slurry composition. Imagine 14 Million pounds of thrust on a 10 x 10 feet area of dam base from this pressure!
- 2.2 Ground substrate geological composition and the type of dam materials together might increase the 'lubrication' effect for seepage and structural failure, especially during earthquakes.
- 2.3 The location of the Lake Clark fault line has not yet been surveyed. It apparently runs within ten miles radius through the mining zone. A fault through or very near the dams will predictably cause sharp vertical upheaval and horizontal cracks, causing catastrophic damage.
- 2.4 In view of significant earthquake activity not far from the mine site one must consider the possibility of a 1000-year event of a major quake, especially occurring from the Lake Clark fault. Rubble dam fill 'liquefaction' occurs during earthquakes, and this phenomenon is superimposed on the physical pressure levels, as per 1. This raises the specter of 'not if and but when' catastrophic failure happens.
- 2.5 Many retaining dam failures have occurred after very heavy rainfall, resulting in overflow of the dam. Redundant spillways are recommended for such an occurrence, but they must be constructed of well-maintained (over decades and centuries) long concrete chutes. For an illustration of this failure mode revisit the recent California Oroville dam failure, which was caused by collapse of the spillway concrete slabs.

3. Pertinent reference to failures of similar containment dams There are 15 recorded recent tailings dam failures worldwide. An expert panel opined with a commentary on risk reduction in the Mount Pollen Dam Failure Report (Independent Expert Panel, 2015). The Panel expressed the following: "In risk-based dam safety practice for conventional water dams, some particular level of tolerable risk is often specified that, in turn, implies some tolerable failure rate. The Panel does not accept the concept of a tolerable failure rate for tailings dams. To do so, no matter how small, would institutionalize failure. First Nations will not accept this, the public will not permit it, government will not allow it, and the mining industry will not survive it." Further, "Newcrest Mining Limited (NML) has recently announced the failure of a portion of its tailings dam at the Cadia Mine in New South Wales, Australia. NML is one of the largest and most experienced gold mining companies in the world; its Cadia Mine is its flagship

producer; and New South Wales has had for some time one of the most comprehensive dam safety regulatory processes in the world. Clearly the crisis is not over.” One glaring failure example is described in the paper by Kenji Ishihara of the 1984 goldmine tailings dam failure in Japan. Two dams - only 100 feet tall - failed after a level 7 earthquake. Significantly, the second dam collapse happened after 24 hours past the earthquake itself. The lessons imply that failure mechanisms can be triggered far beyond the extent of known failure modes.

EPA Response

See EPA’s response to comment 6.D.1.

6.D.28 Thomas Pebler (Doc. #0189, p. 1)

Appendix K of Section 3.17 Hydrogeology (page 10) lists five levels of aquifers in the open pit area. All are shown as permeable. Open pits and tunnels developed through block caving cannot be lined and likely represent the greatest risk for voluminous acid mine drainage and metal leaching during decades of exposure.

EPA Response

The comment is related to the FEIS and describes the risk of metal leaching due to mining by block caving. The 2020 Mine Plan includes open-pit mining, not block caving, although there is still potential for metal leaching with open-pit mining.

6.D.29 Natural Resources Defense Council (NRDC) (Doc. #0839, pp. 10–12)

Mining the Pebble deposit may cause catastrophic impacts to fishery areas in the future

Once the ore is mined from the Pebble deposit, it must be mixed with chemicals and water to separate out the copper, gold, and other metals. The resultant waste from this process is termed “tailings” and must be stored in perpetuity behind impoundment dams. [Robert Moran, Water-Related Impacts at the Pebble Mine, Pebble Science, <http://pebblescience.org/Pebble-Mine/water-impact.html> [perma.cc/GE99-MY8F].] While PLP is currently proposing to extract 1.4 billion tons of ore over a twenty-year period, [Pebble FEIS at 2-13.] public news releases have indicated that the deposit contains nearly eleven billion tons of ore—and that Pebble intends to mine it. [Joel Reynolds, Pebble Mine Tapes Confirm Risk of Disaster in Bristol Bay, NRDC (Sept. 22, 2020), <https://www.nrdc.org/experts/joel-reynolds/pebble-mine-tapes-confirm-risk-disaster-bristol-bay> [perma.cc/QK79- KLBN].] According to PLP executives, Pebble intends to extract beyond the proposed 1.4 billion tons and turn the twenty-year mine plan into a 180-200- year mine plan. [Environmental Investigation Agency, Pebble Tapes 1 - Scale of Mine (2020), <https://vimeo.com/459804434> [perma.cc/Y3VG-U893].] Regardless of the quantity of ore mined, over ninety-nine percent of it would become tailings that need to be stored in perpetuity. [Dave Chambers, Robert Moran, Lance Trasky, Bristol Bay’s Wild Salmon Ecosystems and the Pebble

Mine: Key Considerations for a Large-Scale Mine Proposal, Wild Salmon Center & Trout Unlimited (Jan. 2012) at 17, <https://www.wildsalmoncenter.org/wp-content/uploads/2016/02/PM-Report.pdf>.]

Long-term management of these tailings is often considered the “most significant environmental challenge associated with mining projects.” [T.E. Martin et al., *Stewardship of Tailings Facilities*, 20 *Mining Minerals and Sustainable Development* 2, 1 (April 2002), http://www.pebblescience.org/pdfs/tailings_stewardship-1.pdf [perma.cc/XP6N-6HKJ] [perma.cc/4ML5-PN66].] Tailing impoundment dams fail at a rate of one hundred times that of traditional water storage dams. [Zongjie Lyu et al., *A Comprehensive Review on Reasons for Tailings Dam Failures Based on Case History*, *Advances in Civil Engineering*, 2019 *Advances in Civ. Eng.* 1 (2019), at 2, available at <https://www.hindawi.com/journals/ace/2019/4159306/> (“In the reported 18,000 mines around the world, the failure rate [of tailings dams] in the past 100 years is estimated at 1.2%. The failure rate of the traditional water storage dam is 0.01%.”). See also HR Wallingford, *A Review of the Risks Posed by the Failure of Tailings Dams* (2019), <https://damsat.org/wp-content/uploads/2019/01/BE-090-Tailings-dams-R1-Secured.pdf> [perma.cc/4L8F-65TU] (“The failure rate of tailings dams over the last one hundred years is estimated to be more than two orders of magnitude higher than the failure rate of conventional water retention dams.”).] The unique geology and climate of the Bristol Bay region make the proposed dams particularly susceptible to failure. The proposed mine site lies within a zone of sporadic permafrost, [Northern Dynasty Mines Inc., *Tailings Impoundment A – Initial Application Report*, 9; Northern Dynasty Mines Inc., *Tailings Impoundment G – Initial Application Report*, 9, available at <http://dnr.alaska.gov/mlw/mining/largemine/pebble/water-right-apps/index.cfm> [perma.cc/8WYD-A7PU].] which can cause underground movement and may destabilize the foundations of these impoundments and result in catastrophic dam failure. [Earle A. Ripley, Robert E. Redman, & Adele A Crowder, *Environmental Effects of Mining* 65 (1996).] Additionally, the proposed mine is located 125 miles from the Alaska Aleutian megathrust fault, which has been responsible for some of the largest earthquakes ever recorded, including the 9.2 magnitude Prince William Sound Earthquake and the 9.1 magnitude Aleutian earthquake. [Northern Dynasty Mines Inc., *Tailings Impoundment an Initial Application Report* 5.] Earthquakes can cause dams to collapse outright, overflow due to landslides, [Bretwood Higman, *Seismic Risk at the Pebble Mine*, Pebble Science, http://pebblescience.org/Pebble-Mine/seismic_risk.html [https://perma.cc/9BNL-AHUL].] induce status liquefaction whereby the soil “liquefies” and loses structure, [Institute of Professional Engineers of New Zealand, *Liquefaction* 1 (March 2011), <https://web.archive.org/web/20120926161116/http://www.ipenz.org.nz/ipenz/forms/pdfs/ChChFac tSheets-Liquefaction.pdf>.] and result in subsidence risking collapse or leakage. [Bretwood Higman, *Seismic Risk at the Pebble Mine*, Pebble Science, http://pebblescience.org/Pebble-Mine/seismic_risk.html [https://perma.cc/9BNL-AHUL].] Dam failures can also be caused by more common weather events including high rainfall, hurricanes, and rapid snow melt or ice accumulation making for a high likelihood of leakage or failure in the climate of the region. [Ecology and Env’t, Inc., 2010, *supra*, at 91.]

The impacts from these tailing dam failures can be extensive and catastrophic. EPA's Watershed Assessment outlines several potentially devastating outcomes of a dam failure at Pebble: "Suitable spawning and rearing habitat for salmon and other native fishes would be eliminated in the North Fork Koktuli River downstream of the tailings dam." [Watershed Assessment at 9-22-23.] "Fish could be literally smothered and buried in the slurry, [and] . . . fish would . . . experience lethality, reduced growth, or reduced abundance . . . There can be little doubt that, during and in the years immediately following a tailings dam failure, suspended sediment concentrations would be sufficient to reduce fish populations for many kilometers downstream of a failed tailings dam." [Id.]

A tailings dam failure would undoubtedly be catastrophic. [Joel Reynolds, Rio Tinto Finds the Way in Bristol Bay: Dump the Pebble Mine (2016), <https://www.nrdc.org/experts/joel-reynolds/rio-tinto-finds-way-bristol-bay-dump-pebble-mine> [perma.cc/FDH5-B98R].] The former Head of Environment for Rio Tinto responsible for the environmental, permitting, and closure work at over fifty mines concluded that "even a release of just five percent of the bulk or pyritic tailings is likely to have profound, permanent negative impact on downstream aquatic ecosystems and fisheries." [Richard Borden, Pebble Mine Draft Environmental Impact Statement Summary Comments, at 4 (June 18, 2019).] That risk alone should compel EPA to issue a Final Determination under Section 404(c) to protect Bristol Bay.

EPA Response

See EPA's response to comment 6.D.1.

6.D.30 Loren Karro (Doc. #0847, p. 3)

Additionally, catastrophic effects of an earthen dam breach or failure has barely been considered. Such a dam in an earthquake prone zone would mean when a dam breach occurs, not if. On a local basis, the impact of light pollution, additional humans, equipment, vehicles, and noise on the wilderness as well as in the surrounding villages would have a great impact on quality of life and physical and mental health. The highly valued solitude and wilderness aspects would be lost.

EPA Response

EPA did not evaluate light pollution and noise because the focus of the FD is on impacts to aquatic resources. Regarding a potential dam breach, see EPA's response to comment 6.D.1.

6.D.31 Vivian Mendenhall (Doc. #1615, p. 2)

Very low levels of metal contamination could affect salmon populations:

You describe the possibility of pollution from mineral leaching and/or a tailings dam breach (Section 6). This issue is vitally important, even though you are basing the Proposed Determination on impacts closer to the mine (for good reasons). Very low contamination from pyritic tailings is a serious concern, including the impairment of olfaction in fish by dissolved copper (as you also mention). Dissolved

copper at only 5 to 20 parts per billion can make juvenile salmon more vulnerable to predators, because the fish depend on olfaction to detect an approaching predator (McIntyre et al., 2012). This could reduce the survival of juveniles severely— and therefore the numbers in that cohort that return to spawn.

EPA Response

Regarding dam failure, see EPA's response to comment 6.D.1. Regarding water quality effect, see Section 3.3.1 and Appendix B of the FD.

6.D.32 Vivian Mendenhall (Doc. #1615, p. 2)

Toxic impoundments at the proposed mine:

Section 6 of the Proposed Determination summarizes valuable information on the proposed mine development. This includes potential toxic releases, both gradual and catastrophic.

Even if storage facilities for pyritic tailings do not release toxic fluids, they are a serious concern. What would prevent wildlife contacting the strongly acid and metal-laced water when it is confined in these impoundments? Regarding the pyritic tailings storage facility, Table 6-1 says it "would have a full water cover during operations"; for the pit lake, where Pebble proposes to dump all pyritic tailings after closure, the issue is not mentioned.

But the Draft Environmental Impact Statement makes clear that they would ignore the potential for a toxic lake. It says that clean lake water will cover the pyritic tailings and toxic water indefinitely, and that the same will be true for the storage facilities (pages 2-39 and 4.27-64).

These ideas reflect ignorance of a well-known problem. In fact, pit lakes rapidly become acidic and toxic to the surface. That is because wind will mix the top several feet of water, and seasonal overturn will completely exchange the lake water from top to bottom (Sisinyak 2014, Blanchette and Lund 2016). This critical problem has been recognized at least since the 1980s, when the Berkeley Pit lake in Montana was declared a Superfund site. Large numbers of waterfowl were killed when they landed in its toxic waters (Daley, 2016). Numerous examples of toxic pit lakes are now known in North America and worldwide (Blanchette and Lund 2016). The same problem would occur, even though on a smaller scale, with storage impoundments during mine operations.

EPA Response

EPA did not evaluate the impacts of a pit lake on wildlife and waterfowl because the FD focuses on the adverse effects on anadromous fishery areas resulting from the discharge of dredged or fill material from developing the Pebble deposit. Section 4 of the FD describes EPA's basis for its findings of unacceptable adverse effects on anadromous fishery areas.

See EPA's response to comment 6.D.1.

6.D.33 Terry Chapin (Doc. #2078, p. 1)

I oppose the approval of any permit to develop Pebble Mine.

I am an ecosystem ecologist, retired from the University of Alaska Fairbanks. I have conducted ecological research in Alaska for 40 years, including collaborations with the community of Igiugig on the Kvichak River that drains the west end of Lake Iliamna, downriver from the proposed Pebble Mine.

Past project descriptions ignore the major environmental and ecological dangers of the Pebble Mine. My main concern about the Pebble Mine is its potential long-term (decades to centuries) impact on water quality, salmon, and the lives of people who depend on the salmon. The proposed Pebble Mine site lies between the headwaters of the Kvichak and Nushagak Rivers, the two largest rivers entering Bristol Bay, which support the most valuable salmon fishery in the world. The wetlands that surround the mine site would make it virtually impossible to contain contaminated waters if any of the storage or processing sites at the mine or along the transportation corridor were to leak or fail. Therefore, it seems essential to ensure that this infrastructure has no possibility of failure during the life of the mine or for decades to centuries after the mine is closed down. The project descriptions that have been presented to EPA and the Corps of Engineers do not convince me that this is possible to minimize or eliminate the risk of either slow leakage or catastrophic failure of the storage and processing facilities proposed at the Pebble Mine Site. Given the proposed 20- year life of the mine and the tectonically active nature of the region (on the arc between the Alaska Range and the Aleutians), it would seem important to ensure that toxic minerals and waste waters are not stored where there was any possibility for accidental discharge into the wetlands or rivers surrounding the mine site either during the active life of the mine or for centuries afterwards. I would suggest that the following questions be answered before Pebble Mine is allowed to submit an application for a permit:

1. What are the current flowpaths of groundwater from the proposed mine site to surrounding wetlands and streams? If the mine were developed, would these flowpaths carry leachates from pyritic tailings or low-grade ore (LGO) or potentially acid-generating (PAG) waste into these waters?
2. Is there a risk of tectonic activity at the mine site that might cause failure of structures built to retain toxic pyritic wastes, LGO or PAG waste or which might change groundwater hydrology to release groundwater from the mine site to surrounding wetlands or streams? Given the persistent nature of the toxicity, it would be important to consider even low-probability tectonic events. For example, a probability of once in a thousand years represents a significant probability for wastes that remain toxic for centuries.
3. If the pyritic tailings and PAG waste will be returned to the open pit when the mine is closed, what would be the hydrologic flow path of water that drains into this pit? What would prevent this water from carrying leachates into surrounding wetlands and streams?
4. What precautions are planned to prevent accidental spillage of low-grade ore that is to be transported across Lake Iliamna and loaded at the marine port facility?

EPA Response

The comment requests that four specific questions be answered before a permit application is submitted, which is outside the scope of this action. However, EPA agrees that these are relevant and important questions (although we note that the 2020 Mine Plan does not propose transportation across Lake Iliamna, as assumed in question 4). Some of these questions were addressed in the FEIS. Additionally, EPA considered groundwater and surface water interactions in the FD. Regarding spills and failures, see EPA's response to comment 6.D.1.

6.D.34 Charles Borbridge (Doc. #2097, p. 1)

This is a seismically active location. This endangers mining structures such as any tailings pond dam retaining wall. The seismic pressures on this structures are both surviving a large earthquake, the accumulated damage from smaller quakes, but also the pressures of time measured in millennia. A larger quake may not occur in a couple hundred years. Could it happen in a few thousand years.

EPA Response

See EPA's response to comment 6.D.1.

6.D.35 Charles Borbridge (Doc. #2097, pp. 1–2)

Passage of time is different for a mine or permitting requirements and the life of a fishery. Life of a mine is often measured in decades. They are often then inactive. Mining structures also have a life. Tailings pond retaining walls or dams sometimes last only a few decades and then fail spectacularly. Others last longer. No one really claims these will last without leaking pollutants or failing in some way in a seismically active location. The Bristol Bay fishery has existed for 1,000's to 10,000's of years. With proper care, it will last for 10,000's years more. With this time span and location, a tailings pond retaining wall isn't designed to last forever. It is designed to fail.

EPA Response

See EPA's response to comment 6.D.1.

6.E Tribal Concerns**6.E.1 Iliamna Natives Ltd (Doc. #0107, p. 1)**

Thank you for coming to Iliamna and Newhalen to hear from our people about the proposed Pebble Mine. Many automatically assume that others in the region speak with a unanimous voice and we want to stress that is not the case. It is through this lens that we write today.

In the past, the EPA has held hearings in several communities in the region and we noticed that members of the organized opposition to Pebble have felt compelled to travel to each community and

speak. They can do this because they are well financed via funding from national endowments and national environmental organizations.

This action greatly displaces, and intimidates, local voices - especially when those from outside of our communities can speak before our people. They turn to the audience and stare down locals who want to speak or cause locals to turn away because it gives the perception of a crowd. You will visit our community as summer is in full swing. This means that locals are spending time getting ready for the range of summer subsistence activities or they will be hustling to find work to afford gas to accomplish these activities. Many will not be able to participate given the other demands upon their time.

Thus, we would like to request that EPA work to ensure that local voices receive first priority to speak at the Iliamna public meeting. We understand that it is a public meeting, and you cannot turn away people who travel but we do believe you can more efficiently manage the meeting by allowing locals- and those from Lake Iliamna villages - a priority in speaking.

We have witnessed firsthand the economic benefit from the exploration activities generated by the Pebble Project, and we know that those opposed to the project do not want to hear these views. And some will continue to try to suppress our voices. We hope you can honor our request so that more of our people can be heard.

EPA Response

In accordance with EPA regulations at 40 CFR 231.4, the Regional Administrator determined that public hearings on this CWA Section 404(c) PD were in the public interest. Given the continued uncertainty related to COVID-19, EPA Region 10 hosted a virtual hearing, in addition to in-person hearings. On June 16, 2022, EPA Region 10 hosted one public hearing in Dillingham, Alaska, and one virtual hearing. On June 17, 2022, EPA Region 10 hosted one public hearing in Newhalen, Alaska.

EPA Region 10 provided notice of these public hearings in the *Federal Register*; see *Proposed Determination to Prohibit and Restrict the Use of Certain Waters Within Defined Areas as Disposal Sites; Pebble Deposit Area, Southwest Alaska*, 87 FR 32021 (May 26, 2022). The *Federal Register* notice included details about how the public hearings would be run and indicated that a time limit for testimony “may be required to maximize the number of individuals” who would be able to speak. The *Federal Register* notice was clear that EPA would offer speaking priority to tribal elders and elected officials. In addition, to minimize potential concerns about “intimidation,” EPA also offered to record oral testimony privately at the in-person public hearings.

Ultimately, EPA did not need to limit speaking time for the public hearing held in Newhalen. However, EPA did need to provide limits on speaking time for the hearings held in Dillingham, Alaska, and the virtual hearing.

6.E.2 Bristol Bay Native Association (BBNA) (Doc. #0802, p. 1)

BBNA would like to extend our gratitude to EPA for this proposed RPD. The RPD is a step forward for protections of our rivers, streams, wetlands, subsistence and commercial fisheries and our Way of Life. Bristol Bay residents have been engaged in assessing the Pebble deposit for over 20 years and our position has not changed. The people of Bristol Bay have been sustained on these lands since time immemorial. Our traditions maintain that we are protectors and stewards of our lands. The life source that connects all our people and all living things is water. Water is life. Our watershed must be protected in order to maintain a healthy ecosystem. Water connects us to live a subsistence lifestyle and water connects us along the rivers to access our traditional fishing and hunting grounds. The wildlife species that would be affected by discharges of dredged or fill material associated with the Pebble deposit include, but are not limited to moose, caribou, brown bear, black bear, wolf, wolverine, migratory birds, seals, belugas, sea otters, and small game animals. We cannot put a price on our way of life that has sustained our people for thousands of years.

EPA Response

Although not a basis for EPA's action, EPA recognizes the ecological value and importance of the Bristol Bay watershed and its wild salmon, wildlife, and plants for Alaska Native subsistence, culture, and traditions. See Section 3 of the FD for more information about Bristol Bay's ecological resources. See Section 6 of the FD for more information regarding tribal concerns, including subsistence, in Bristol Bay.

Section 4 of the FD provides the basis for EPA's determination that discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. The administrative record supports EPA's FD.

6.E.3 Pueblo of San Felipe (Doc. #0127, p. 1)

San Felipe understands what it means to live in a dry, arid environment and the importance of protecting our water resources and would like to see Bristol Bay protected, as all watersheds are of significant importance. We understand that the Bristol Bay watershed is more than just home for the largest wild sockeye salmon runs in the world; it is the lifeline for the Native people of Bristol Bay and all those who depend on it. The Pueblo of San Felipe supports Bristol Bay Tribes in their efforts to protect their lands and waters that have sustained their indigenous way of life, their livelihoods, and their communities since time immemorial. We hope that the 404(c) process will protect the Pebble Mine to stop toxic mining waste to be stored at the headwaters of the Bristol Bay region and the entirety of the Pebble deposit for permanently protection and downstream waters.

EPA Response

See EPA's response to comment 6.E.2.

6.E.4 Northwest Indian Fisheries Commission (Doc. #0621, p. 2)

It is with that understanding, the NWIFC joined efforts supporting the United Tribes of Bristol Bay when they first petitioned the EPA to prohibit mines like Pebble in the region more than a decade ago. In the years since, the science, history, and facts show how detrimental this project would be to the Bristol Bay region. The NWIFC continues its support of the United Tribes of Bristol Bay in their efforts to protect their lands and waters that have sustained their indigenous way of life, their livelihoods, and their communities since time immemorial.

EPA Response

EPA recognizes that federally recognized tribal governments, tribal members, and many interested parties have devoted significant resources over many years of engagement and review related to developing the Pebble deposit. Development of a mine at the Pebble deposit and such a mine's potential effects on aquatic resources have been the subject of study for over a decade. EPA's FD is based on this extensive record of scientific and technical information. See EPA's response to comment 6.E.2.

6.E.5 Alaska Department of Environmental Conservation (Doc. #0814, pp. 18–20)

Region 10's myopic focus on subsistence obscures other values held by Alaska's rural and Native communities.

Region 10 justifies its proposed veto, in part, on the benefits that Region 10 believes the veto will provide for Alaska Natives. [E.g., PD at ES-1; 3-52; 3-56–3-57; 6-23.]

The State of Alaska has been providing assistance to rural residents, many of whom are Alaska Natives, for decades. Alaska assists with addressing basic sanitation issues, [Alaska created the Village Safe Water Program to address water and sanitation challenges unique to our rural communities. Over 3,300 rural Alaskan homes lack running water and a flushing toilet, most of which are located in remote Alaska Native communities. See K. Mattos & T. Blanco-Quirogo, Water Infrastructure Brief: Opportunities and challenges for washeterias in unpipied Alaska communities (Aug. 2020), retrieved from <https://www.anthc.org/wp-content/uploads/2021/04/Washeteria-Technical-Brief.pdf>. Many of these households use honeybuckets—plastic-lined buckets that collect urine and feces—which are deposited into a sewage lagoon. These communities desire sustainable water and sanitation facilities. To meet these needs, Alaska works with rural communities to allocate and distribute funding for sanitation facilities, administer grants, and coordinate with the Alaska Native Tribal Health Consortium to manage water and sanitation projects. One product of this is the Alaska Water and Sewer Challenge—a collaboration with tribal, state, and federal agencies to fund research aimed at developing sustainable water and sewer systems for the rural sector. To be sustainable, these systems must be cost-effective: they must have a low capital investment and minimal operating costs. Research efforts are aimed at decentralizing water and wastewater treatment, while minimizing the use of water and maximizing its re-use. See Alaska Dep't of Env'l Consv., Alaska Water & Sewer

Challenge, <https://dec.alaska.gov/water/water-sewer-challenge/>.] critical infrastructure needs, [144 Alaska Native communities have reported some degree of infrastructure damage from erosion, flooding, permafrost thaw, or a combination of all three hazards. The permafrost underlying Noatak, for example, is thawing and destabilizing foundations beneath homes and underground water and sewer piping. There is presently a large crack in the floor of the water treatment plant, the foundation of which has settled approximately six inches on one side due to permafrost melt. If the facility fails, all residents will lose clean drinking water and piped sewer connection.] and the destabilizing effects presented by globally rising temperatures. [A family in Chefnak, for example, had to evacuate their home after a large pit developed from thawing permafrost beneath the house's foundation. See AK Public Media, Sinkhole Opens under Chefnak Home, Forcing Family to Evacuate, (Jan. 25, 2021), retrieved from <https://alaskapublic.org/2021/01/25/sinkhole-opens-under-chefnak-home-forcing-family-to-evacuate/>. Many homes in Chefnak are threatened by erosion, flooding, or permafrost degradation.] The State is presently involved in the preparation of a technical report analyzing the unmet needs of environmentally threatened Alaska Native Villages and formulating recommendations to assist in the protection of Alaska Native culture and communities. [This report, prepared by Alaska Native Tribal Health Consortium, Aleutian Pribilof Islands Association, and Association of Village Council Presidents, is scheduled to be released around the time of the submission of this Comment Letter. Alaska Department of Commerce, Community, and Economic Development, Division of Community and Regional Affairs, is listed as a major contributor. Current community strategies involve protection in place, managed retreat, and, as a last resort, relocation.] The State understands the complex and nuanced issues facing our rural, and Native, communities.

Region 10 proposes to assist Alaska's rural and Native communities by spotlighting their shared subsistence lifestyle, and assuming away other values. [PD at 3-52-3-57; 4-27; 6-5-6-8; 6-11; 6-13-6-14; 6-15-6-19.] In this way, Region 10 justifies its proposed veto as a measure taken to further the interests of Alaska's rural and Native communities.

The State of Alaska respects the subsistence way of life practiced by many of its rural and Native communities, and has taken steps to help protect this lifestyle. [E.g., AS § 16.05.258(b)(1)-(4) (entitled "Subsistence use and allocation of fish and game"); see *State v. Morry*, 836 P.2d 358, 365-66 (Alaska 1992) (explaining Alaska's subsistence-preference laws).] Alaska urges Region 10 to recognize the diversity of values that Alaska rural and Native communities may hold, in addition to preserving the subsistence way of life, and the ways that mining projects could further these values, and benefit these communities.

(...)

Indeed, leadership of the community nearest to Pebble deposit, the Village of Iliamna, has spoken out in support of the project. [See Isabelle Ross, KDLG Radio, Iliamna Natives Ltd. reaches land deal with Pebble, citing potential for economic growth (May 16, 2019), retrieved from <https://www.kdlg.org/pebble-mine/2019-05-16/iliamna-natives-ltd-reaches-land-deal-with-pebble-citing-potential-for-economic-growth>; Dylan Brown, Unending mine fight strains Alaska villages,

EENews (Oct. 16, 2019), retrieved from <https://www.eenews.net/articles/unending-mine-fight-strains-alaska-villages/> (Iliamna Natives Ltd. board member expressing support for Pebble mine.)] The President of the Iliamna Natives Limited (“INL”) explained:

INL sees the opportunities that Pebble could provide for Iliamna, and we want our community to grow and prosper with responsible development. INL will work with Pebble to make sure it is done responsibly, and we are looking forward to working together to make our shareholders and community a healthy place to aspire our dreams. [News Release, Northern Dynasty Minerals, Ltd., Northern Dynasty: Pebble Partnership, Iliamna Natives Limited Reach Right-Of-Way Agreement (May 15, 2019), retrieved from <https://northerndynastyminerals.com/news/news-releases/2019/northern-dynasty-pebble-partnership-iliamna-natives-limited-reach-right-of-way-agreement/>.]

This perspective is absent from Region 10’s proposed determination. Region 10 goes so far as to dismisses the value of employment for nearby communities, suggesting that increased employment might “reduce the time available for subsistence activities” which could “potentially decreas[e] harvest yields.” [PD at 6-24 (“[I]ncreased employment may also reduce the time available for subsistence activities, including the transfer of TEK and practices to family members, potentially decreasing harvest yields.”)]. Contrary to Region 10’s assertion, the FEIS suggested that high paying jobs improve subsistence success: The effect of income on subsistence success (i.e., subsistence production) is evident among households with unique demographic structures. The magnitude of the effect of income is such that in many communities, 30 percent of households produce 70 percent of the subsistence harvest. These “super households” are distinguished because they include multiple working-age males, tend to have high incomes, and often are involved in commercial fishing. These three factors support high-producing households to be able to combine subsistence activities with paid employment and to arrange considerable labor in flexible ways that maximize harvests of subsistence foods, which are then shared with other households in the community and region. FEIS at 4403.] But jobs are not the enemy of subsistence living: income may be used to purchase supplies required for subsistence and harvesting activities—snowmachines, all-terrain vehicles, guns, fishing nets, fuel, for example. [Gerlach, C., & Loring, P, Rebuilding northern foodsheds, sustainable food systems, community well-being, and food security, *Int’l J. of Circumpolar Health* (2013); Nuttall, M., Berkes, F., Forbes, B., Kofinas, G., Vlassova, T., & Wenzel, G., Hunting, herding, fishing and gathering: indigenous peoples and renewable resource use in the Arctic, *Arctic Climate Impact Assessment*, 649–90 (2005); Magdanz, J. S., Greenburg, J., Little, J., & Koster, D., *The Persistence of Subsistence: Wild Food Harvests in Rural Alaska, 1983- 2013* (2016).]

The well-being of those in rural communities, predominately Alaska Natives, encompasses so much more than simply maintaining a subsistence lifestyle. If Region 10 seeks to assist Alaska Natives, then limiting their opportunities—job opportunities, educational benefits, and others resulting from the inflow of money into an area—may be counterproductive. Region 10 oversteps its role by assuming that subsistence is the only value held by Alaska Natives, and vetoing a project based, in part, on this erroneous assumption.

EPA Response

The commenter's statement about infrastructure investment in Bristol Bay is outside the scope of EPA's CWA Section 404(c) review process for the Pebble deposit area and this action. EPA recognizes that there are significant challenges to infrastructure development in rural Alaska and appreciates the State's role in meeting the infrastructure needs of rural Alaskans and Alaska Natives.

The commenter states that EPA "proposes to assist Alaska's rural and Native communities by spotlighting their shared subsistence lifestyle, and assuming away other values" and "justifies its proposed veto as a measure taken to further the interests of Alaska's rural and Native communities." EPA agrees that the concerns of all of Bristol Bay's Native people, both in favor and opposed to developing the Pebble deposit, have been an important consideration in EPA's action. However, the basis for EPA's FD is the unacceptable adverse effects on fishery areas from discharges of dredged or fill material associated with proposed mining at the Pebble deposit, which is discussed in detail in Section 4 of the FD. Although the commenter is correct that EPA describes concerns regarding subsistence in Section 6 of the FD, these considerations are clearly identified as not being the basis for EPA's FD.

With respect to the commenter's request for EPA to "recognize the diversity of values that Alaska rural and Native communities may hold, in addition to preserving the subsistence way of life, and the ways that mining projects could further these values, and benefit these communities," EPA has listened to and respects the diverse perspectives of all Alaska Natives in the Bristol Bay area. Sections 2 and 6 of the FD discusses EPA's process to consult with tribal governments and Alaska Native Claims Settlement Act (ANCSA) Corporations, which included Iliamna Natives Limited. A summary of EPA's tribal consultation and ANCSA Corporation consultation processes can be found at [regulations.gov](https://www.regulations.gov) at Docket No. EPA-R10-OW-2022-0418.

Regarding the commenter's objection to language on page 6-24 of the 2022 PD referring to the tradeoff between employment and time availability for subsistence activities, EPA updated the FD to remove this language. However, EPA disagrees with the commenter's assertion that EPA dismissed the value of employment for nearby communities. Within the same paragraph on page 6-24 of the PD, and again in Section 6 of the FD, EPA acknowledges that development of the Pebble Mine would result in employment opportunities in the region, leading to increased revenues and year-round job opportunities throughout the lifespan of the mine. Within that same paragraph again, EPA acknowledges, and thus is in agreement with the commenter, that increased revenue in the region may lead to investment in infrastructure and services and provide revenue needed for subsistence hunters and anglers to purchase subsistence-related technology and equipment. As previously stated, these considerations are not the basis for EPA's FD.

Economic-related issues are discussed in the document entitled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) FD for the Pebble Deposit Area, Southwest Alaska (EPA 2023b)* (referenced in Section 4 of the FD).

Regarding the commenters statement that EPA is “limiting opportunities,” see EPA’s responses to comments in Topic 6.F.

6.E.6 Choggiung Limited (Doc. #0815, p. 1)

Choggiung Limited is an Alaska Native Village Corporation representing about 2,400 shareholders that originate from Bristol Bay and which over 700 still call Bristol Bay home. The resources that the pristine waters of Bristol Bay provide and support our traditions and way of life that has survived thousands of years.

EPA Response

See EPA’s response to comment 6.E.2.

6.E.7 United Tribes of Bristol Bay (UTBB) (Doc. #0823, pp. 4–5)

Chapter 12 of the BBWA details how negative impacts on salmon will in turn impact non-salmonid fish, terrestrial animals, and Alaska Natives. The information in this chapter is incredibly important because, as the authors point out, salmon are not only the foundation of the human subsistence diet—they are also a primary food source for other subsistence species.[U.S ENVTL. PROT. AGENCY, AN ASSESSMENT OF POTENTIAL MINING IMPACTS ON SALMON ECOSYSTEMS OF BRISTOL BAY, ALASKA Ch. 12, at 12-1 (2014) (EPA 910-R-14-001C).] Beyond just humans, salmon serve as a primary food source for terrestrial mammals, water and shore birds, freshwater non-salmonid fish, and freshwater invertebrates.[Id. at 12-5. Chapter 5 of the BBWA, entitled “Endpoints,” is especially important in establishing the interconnectedness of salmon and with the region’s other land and water wildlife species.] Based on data collected from Alaska’s Arctic Slope region, the authors describe impact scenarios where a foundational subsistence species is threatened or diminished. The scenarios include: 1) an increased scarcity or contamination resulting in transitions from subsistence diets toward packaged foods; 2) traditional places of cultural exchange, such as hunting grounds and fish camps, are diminished or lost; 3) religious and moral doctrines based on subsistence worldviews are questioned or lost; and 4) individuals and families begin moving from villages to urban centers in search of full-time wage employment.[Id. at 12-5–12-8.]

Although the above list of scenarios is based on examples from a different region in Alaska, the interviews conducted with Bristol Bay residents show many of these scenarios are already causing concern in the region’s communities, while others are already occurring in the Nushagak and Kvichak watersheds. For example, residents of the upper Mulchatna River and Lake Clark areas have already begun to see changes in the migration of the Mulchatna caribou herd, a traditional subsistence food source.[U.S ENVTL. PROT. AGENCY, AN ASSESSMENT OF POTENTIAL MINING IMPACTS ON SALMON ECOSYSTEMS OF BRISTOL BAY, ALASKA App. D, at 173 (2014) (EPA 910-R-14-001C).] When asked why

he thought the caribou no longer followed their traditional route, one elder responded, “[t]he drill wells are making all the noise. We were over there, my wife and I were over there last spring, and when we went over there to check out the Pebble, there [we] saw three other helicopters right in the same area, and that’s lots of traffic. We have not had caribou meat around here ever since. Haven’t had caribou meat caught here in probably the last six years.”[Id. at 296 (emphasis added).] Another elder stated, “[s]ince the Pebble Mine started their exploration, I speak for everyone around here that we have not had the big caribou herds that come through here anymore.”[Id. at 295.]

EPA Response

Regarding subsistence, see EPA’s response to comment 6.E.2. Regarding impacts to wildlife, see EPA’s response to comment 6.A.2.

6.E.8 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, pp. 14–15)

Comments regarding updated or additional information related to TEK and/or subsistence use in the Nushagak and Kvichak River watersheds.

While TEK and subsistence fall largely outside my area of expertise, some anecdotal information (substantiated by National Park Service and Alaska Department of Fish and Game) underscore the importance of biocomplexity and the portfolio effect, and their relevance to protection of streams even at small spatial scales. Despite an all time record sockeye salmon return in Bristol Bay in 2022, Lake Clark sockeye returned in their second lowest numbers since 2000 according to Lake Clark National Park data collection (NPS 2022 [NPS (National Park Service). 2022. Monitoring Sockeye Salmon. <https://www.nps.gov/lacl/learn/nature/monitoring-sockeye-salmon.htm>. Accessed 29 August, 2022. Adult sockeye counts since 2000 can be found at the site linked on the NPS website: https://docs.google.com/spreadsheets/d/1Wf6EPFac9W1FGD696b4fSM4n_J22TjDjx2VYzKHDLtc/edit#gid=659333007. Also Accessed 29 August, 2022.]). This caused late and prolonged subsistence harvests for the communities of Nondalton and Port Alsworth, and raised concerns regarding the fishery and its future in generala (personal communication, Nondalton resident June Tracey, 27 August, 2022). Given the proximity of Lake Clark to the Pebble deposit and the road corridor proposed to cross the Newhalen River directly downstream of Lake Clark, this also highlights the high potential for impacts of mining and associated activities to have disproportionate, and possibly population-level impacts during entirely unpredictable years of low returns.

EPA Response

EPA provides information about the portfolio effect, biocomplexity, and salmon returns in Section 3 of the FD. EPA addresses subsistence concerns in Section 6 of the FD.

6.E.9 Trustees for Alaska et al. (Doc. #0831, p. 31)

Comments regarding updated or additional information related to TEK and/or subsistence use in the Nushagak and Kvichak River watersheds.

The Bristol Bay watershed is home to exceptional fisheries and wildlife essential to those in the region who maintain a subsistence way-of-life. The abundant resources of Bristol Bay have supported Alaska Native people for more than 10,000 years.[See Bristol Bay Regional Guide, BBNC at 4 [https://www.bbnc.net/wp-content/uploads/2016/04/BBNC- Bristol-Bay-Regional-Guide.pdf](https://www.bbnc.net/wp-content/uploads/2016/04/BBNC-Bristol-Bay-Regional-Guide.pdf). Ex. 160] The Yup'ik and Dena'ina peoples present in the Nushagak River and Kvichak River watersheds are two of the last intact, sustainable, salmon-based cultures in the world.[See Bristol Bay: About Bristol Bay, Environmental Protection Agency <https://www.epa.gov/bristolbay/about-bristol-bay>.] Salmon are integral to the entire way of life in these cultures as subsistence food and as the foundation for language, spirituality, and social structure.[Id.]

In the Bristol Bay region, salmon constitute approximately 52% of the subsistence harvest. Subsistence from all sources (fish, moose, and other wildlife) accounts for an average of 80% of protein consumed by area residents.[Id.] These cultures have a strong connection to the landscape and its resources.[Id.] In the Bristol Bay watershed, this connection has been maintained for at least the past 4,000 years and is in part due to, and responsible for, the continued pristine condition of the region's landscape and biological resources.[Id.] It is through these subsistence uses that people of the region feed their families. In addition, the cultural and religious interests of many in the region are deeply embedded in the subsistence traditions of tribes. Disruption of subsistence activities may affect social and kinship ties, many of which are based on the harvesting, distribution, and consumption of subsistence resources.

EPA Response

Although not a basis for EPA's action, EPA recognizes the ecological value and importance of the Bristol Bay watershed and its wild salmon for Alaska Native subsistence, culture, and traditions. In the Nushagak and Kvichak watersheds, home primarily to the Yup'ik and Dena'ina, indigenous peoples have been harvesting wild resources for at least 12,000 years and salmon for at least 4,000 years. Salmon and other subsistence resources continue to make up the large majority of the diet in the Nushagak and Kvichak River watersheds. For millennia, the Yup'ik and Dena'ina peoples and their predecessors have depended on the ecosystems that support salmon and other wild resources, and for millennia these ecosystems have remained relatively pristine. See Section 6 of the FD for more information regarding subsistence and traditional ecological knowledge.

6.E.10 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 78–80)

Response to Question #13 – New information related to TEK and/or subsistence use in the Nushagak and Kvichak River watersheds.

In its solicitation of comments, EPA Region 10 requests comments regarding updated or additional information related to TEK and/or subsistence use in the Nushagak and Kvichak River watersheds.

The Bristol Bay watershed's streams, wetlands, and other aquatic resources support a more than 4,000-year-old subsistence-based way of life for Alaska Natives. Bristol Bay 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. Information related to TEK and subsistence is essential for any evaluation of the Pebble Project's impacts on salmon and the subsistence uses salmon support.

As a starting point for new information related to TEK and/or subsistence use in the Nushagak and Kvichak River watersheds, a 2012 study on subsistence commissioned by BBNC showed that the vast majority of households in the region rely on subsistence fishing, hunting, and gathering for a large percentage of their food. [See enclosed Appx. C at pp. 2669 to 2719 (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 (a study funded by BBNC) (2012), at p. 17.)] Given the extremely high cost of groceries in rural Alaska, replacing the salmon harvest with store-bought meat would cost approximately \$7,500 (in 2011 dollars) for the average Alaska Native family, representing nearly 20% of the average Alaska Native household income. [Id at 2696 to 2697 (Callaway, at pp. 27-28).]

During the permitting process, cooperating agency tribes Nondalton Tribal Council and Curyung Tribal Council submitted substantial information regarding TEK and subsistence. This information is found in the attached Appendix C at pages 1470 to 1751 (Nondalton Tribal Council comments on draft EIS), pages 1987 to 2053 (Curyung Tribal Council comments on preliminary final EIS), and pages 2054 to 2186 (Nondalton Tribal Council comments on preliminary final EIS).

In addition, recent subsistence and TEK studies from ADF&G are helpful to illustrate the high level of place-based subsistence use in the Nushagak and Kvichak River watersheds:

* Bronwyn E. Jones; Penelope Crane; Cody Larson; Margaret Cunningham. 2021. Traditional ecological knowledge and harvest assessment of Dolly Varden and other nonsalmon fish utilized by residents of the Togiak National Wildlife Refuge. ADF&G Division of Subsistence, Technical Paper No. 482.

* Caroline L. Brown; James A. Fall; Anna Godduhn; Lisa Hutchinson-Scarborough; Bronwyn Jones; Jacqueline M. Keating; Brooke M. McDavid; Chris McDevitt; Elizabeth Mikow; Jeff Park; Lauren A. Sill; Terri Lemons. 2021. Alaska Subsistence and Personal Use Salmon Fisheries 2018 Annual Report. ADF&G Division of Subsistence, Technical Paper No. 484.

* Lisa Hutchinson-Scarborough; Drew Gerkey; Gabriela Halas; Cody Larson; Lauren A. Sill; James M. Van Lanen; Margaret Cunningham. 2020. Subsistence salmon networks in select Bristol Bay and Alaska Peninsula communities, 2016. ADF&G Division of Subsistence, Technical Paper No. 459.

* Bronwyn Jones; Margaret Cunningham. 2020. The harvest and use of wild resources in Port Heiden, Alaska, 2018. ADF&G Division of Subsistence, Technical Paper No. 465.

- * Bronwyn Jones; Margaret Cunningham. 2020. The harvest and use of salmon by residents of King Salmon, Naknek, and South Naknek, Alaska, 2017 and 2018. ADF&G Division of Subsistence, Technical Paper No. 470.
- * James A. Fall; Anna Godduhn; Gabriela Halas; Lisa Hutchinson-Scarborough; Bronwyn Jones; Brooke McDavid; Elizabeth Mikow; Lauren A. Sill; Terri Lemons. 2020. Alaska Subsistence and Personal Use Salmon Fisheries 2017 Annual Report. ADF&G Division of Subsistence, Technical Paper No. 451.
- * Bronwyn Jones; Margaret Cunningham; David Koster (editors). 2019. Subsistence harvest assessment and biological sampling of Chinook salmon in the Togiak River drainage. ADF&G Division of Subsistence, Technical Paper No. 454.
- * James A. Fall; Anna Godduhn; Gabriela Halas; Lisa Hutchinson-Scarborough; Bronwyn Jones; Brooke McDavid; Elizabeth Mikow; Lauren A. Sill; Amy Wiita; Terri Lemons. 2019. Alaska Subsistence and Personal Use Salmon Fisheries 2016 Annual Report. ADF&G Division of Subsistence, Technical Paper No. 446.
- * James A. Fall, Anna Godduhn, Gabriela Halas, Lisa Hutchinson-Scarborough, Bronwyn Jones, Elizabeth Mikow, Lauren A. Sill, Alida Trainor, Amy Wiita, Terri Lemons. 2018. Alaska Subsistence and Personal Use Salmon Fisheries 2015 Annual Report. ADF&G Division of Subsistence, Technical Paper No. 440.
- * James M. Van Lanen; Gayle Neufeld; Chris McDevitt. 2018. Traditional Ecological Knowledge of the Mulchatna Caribou Herd: Phenology, Habitat Change, Subsistence Use, and Related Species Interactions in Game Management Units 9B-C, 17, 18, and 19A-C, Alaska. ADF&G Division of Subsistence, Technical Paper No. 441.
- * Jennifer M. Burns; James M. Van Lanen; David Withrow; Davin Holen; Tatiana Askoak; Helen Aderman; Greg O'Corey-Crowe; Garrett Zimpelman; Bronwyn Jones. 2016. Integrating local traditional knowledge and subsistence use patterns with aerial surveys to improve scientific and local understanding of the Iliamna Lake seals. ADF&G Division of Subsistence, Technical Paper No. 416.

EPA Response

EPA agrees that information related to Traditional Ecological Knowledge (TEK) and subsistence is important to include in EPA's CWA 404(c) review, and EPA has made efforts to incorporate TEK where available into its FD. EPA incorporated some of the references and additional information provided in this comment in the FD.

6.E.11 Alaska Wildlife Alliance (AWA) (Doc. #0836, p. 3)

Bristol Bay is also home to 25 federally recognized Tribal Governments, of which salmon is a resource of national importance. The Alaska Native cultures present in the Nushagak River and Kvichak River watersheds - the Yup'ik and Dena'ina - are two of the last intact, sustainable salmon-based cultures in the world. Salmon are integral to the entire way of life in these cultures as subsistence food and as the foundation for their language, spirituality, and social structure. Fourteen of Bristol Bay's 25 Alaska

Native villages and communities are within the Nushagak River and Kvichak River watersheds, with a total population of 4,337 in 2010. In the Bristol Bay region, salmon constitute approximately 52% of the subsistence harvest. Subsistence from all sources (fish, moose, and other wildlife) accounts for an average of 80% of protein consumed by area residents (EPA, About Bristol Bay). These cultures have a strong connection to the landscape and its resources. In the Bristol Bay watershed, this connection has been maintained for at least the past 4,000 years and is in part due to and responsible for the continued pristine condition of the region's landscape and biological resources.

EPA Response

See EPA's response to comment 6.E.9.

6.E.12 Natural Resources Defense Council (NRDC) (Doc. #0839, p. 33)

Comments regarding updated or additional information related to TEK and/or subsistence use in the Nushagak and Kvichak River watersheds.

Human health and welfare are inextricably tied to the availability of a productive salmon fishery and healthy wildlife in and around Bristol Bay. Alaska Native communities and Bristol Bay residents in the watershed depend—and have for millennia—on salmon for their subsistence, and reduced salmon stocks will seriously threaten their health, their way of life, and the survival of their communities. This connection between the Indigenous people, the fish, and the wildlife of the Bristol Bay region and the threat posed by mining the Pebble deposit is not only relevant to a determination under Section 404(c), but also implicates the federal government's trust responsibilities and raises significant environmental justice concerns.

As EPA's Watershed Assessment notes, "the region's salmon resources have supported Alaska Native cultures in the region for at least 4,000 years and continue to support one of the last intact wild salmon-based cultures in the world." [Watershed Assessment at 5-31.] And "[b]ecause the Alaska Native cultures in the Bristol Bay watershed have significant ties to specific land and water resources that have evolved over thousands of years, it is not possible to replace the value of any subsistence use areas lost to mine operations elsewhere... compensatory mitigation, restoration, or replacement in the case of a failure would be difficult, if not impossible." [Id. at 14-13.]

As expressed by UTBB's President Robert Heyano in a letter to the Army Corps:

The Alaska Native culture, economy, and traditional ways of life are directly tied to a subsistence lifestyle. The salmon fisheries have supplied food since Native people first inhabited what is now Alaska. Salmon are the lifeblood of Bristol Bay's Native people, serving not just deeply held religious and cultural significance, but also as the primary present day economic resource for many Native communities. Any disruption to the fisheries, such as Pebble Mine's projected destruction of more than 80 miles of streams and 3,500 acres of wetlands, would instantly devastate the livelihood of local Alaska Native communities. [Letter from Robert Heyano, President, United Tribes of Bristol Bay, to Colonel Kirk Gibbs, Army Corps, (April 7, 2021) (emphasis added).]

The Tribes and people of Bristol Bay have been asking EPA for more than a decade to use its authority under Section 404(c) of the Clean Water Act to protect their lives and livelihoods:

The Tribal people of Bristol Bay and those whose livelihoods depend on its waters have dealt with uncertainty from the threat of the Pebble Mine for far too long...Section 404(c) of the Clean Water Act allows the federal government to permanently protect any watershed from the threat of mining. Our Tribes firmly believe, and therefore formally request, that the EPA use this authority under the Clean Water Act and make ending the threat of the Pebble Mine a top priority. [Letter from Robert Heyano, President, United Tribes of Bristol Bay, to Michael Regan, Administrator-designate, and Jane Nishida, Acting Administrator, EPA (February 2021).]

EPA Response

See EPA's responses to comments 6.E.2, 6.E.4, and 6.E.9.

6.E.13 Center for American Progress (Doc. #0863, p. 1)

Mining in Bristol Bay and its headwaters goes directly against the asks of local Alaskan Tribes at a time when the country must commit to Tribal-led conservation. Exploiting the lands and waters of Southwestern Alaska would threaten the sustenance and livelihood of local Tribes, who have depended on Bristol Bay for generations and have spent 16 years fighting development in the region.

EPA Response

See EPA's responses to comments 6.E.2, 6.E.4, and 6.E.9.

6.E.14 Anchorage Audubon Society (Doc. #0864, p. 1)

Local people, both Native and non-native, depend on Nushagak salmon runs for part of their diets, way of life, and economy.

EPA Response

See EPA's response to comment 6.E.2.

6.E.15 Tribal Operations Committee (ROTC) (Doc. #2009, p. 2)

The Bristol Bay watershed is home to 25 federally recognized tribal governments who have maintained a salmon-based culture and subsistence-based way of life for at least 4,000 years that would be placed in jeopardy if the determination is withdrawn. Tribes in Bristol Bay utilize many culturally significant plants, fish, and animals that need to be taken into account when addressing EPA's trust responsibilities and protection of our water. Tribal people have subsisted on these plants and animals for millennia, and we continue to do so today.

It is the responsibility of EPA to provide protections to these important resources, to uphold its trust responsibilities and work to protect Tribal people and Tribal lifeways. Large-scale open-pit mining in

Alaska's Bristol Bay would permanently damage this unique and irreplaceable landscape. Years of robust scientific study show that this is the wrong mine in the wrong place.

EPA Response

EPA recognizes the federal government's trust responsibility to federally recognized Indian tribes, which derives from the historical relationship between the federal government and Indian tribes as expressed in certain treaties and federal Indian law. EPA has consulted with tribal officials, as appropriate and consistent with the federal trust responsibility and EPA Region 10's Tribal Consultation and Coordination Procedures, as part of EPA's Section CWA 404(c) review process. A summary of EPA's tribal consultation process can be found at regulations.gov at Docket No. EPA-R10-OW-2022-0418.

See EPA's responses to comments 6.E.2, 6.E.4, and 6.E.9.

6.E.16 Wassillie Andrews (Doc. #2667-4, pp. 19–20)

I'm - my native name, Iyalalpa (phonetic), I was born with, translated to Big Canoe, and this is me - it's who I am. I'm Wassillie Andrews. I represent (unintelligible) Village, (unintelligible) Council, as a (unintelligible) this morning, here in front of you.

And we have clean water. We have clean land. We have fish, game that we have been utilizing for a long, long time, for thousands of years, taught to us by our ancestors back then, and now we're taking over. And we're here to let you know that we have followers coming along that already participate in the things that we taught them, to do the same things that we do to, you know, earn a way of life that we have been taught from our past.

It would be really great to work hard for us, work hard to keep this as it is, and the protections as strong as possible so that we can continue on, our kids, their kids, and their kids, will go on like we do, surrounded with clean water, clean land.

EPA Response

See EPA's response to comment 6.E.2.

6.E.17 Natural Resources for the Bristol Bay Native Association (Doc. #2667-5, pp. 21–22)

We have been testifying for years on the importance of clean water, and the protection of the renewable resources. Our leaders and stakeholders have spent years studying, and understanding the impacts Pebble Mines would have, if they were ever to receive a 404C permit. We have testified over and over, educated our region, and testified within two to three minutes to have their voices heard on a place that we call home. Our people, the Yupik, Alutiiq, and Dena'ina people have been within the Bristol Bay region for thousands of years. Our values - our values that most wouldn't understand. We have unwritten laws of understanding that have been passed on from generation to generation. Those of us

who are from here know the value of these waters and the lands, and what they mean to the people who live here. And these waters and lands have sustained us for generation after generation.

We have been advocating for these values in comment period, after comment period, and our story has not changed over all these years. We are - we are fortunate to live in a beautiful place, where the salmon return by the millions year after year, and spawn in the same pristine waters they were born, where the air is clean. We live in the last frontier. I know my time is up.

We are here today because we have remained strong, resilient, and we have not given up to protect Bristol Bay. We are here today because of the proposed determination that's based on science. With that background, BBNA asks that you finalize a strong 404C, and that EPA will eliminate the threat of Pebble to our waters.

EPA Response

See EPA's responses to comments 6.E.2, 6.E.4, and 6.E.9.

6.E.18 Natalia Wassilliey (Doc. #2667-9, pp. 29–30)

I used to be afraid to speak out. But most of you remember Big Moxie (phonetic), and (unintelligible), (unintelligible) mom. Heard me speak out, and both told me when I was alone, 'Don't be afraid to speak out. You speak from your heart, because you care, not just for your family, but all people, and continue fighting for your people. In the long run, they'll listen. At first, they might not listen.'

So in their memory, I started fighting, and speaking out like both used to, like a few of you out there now. So now you know, I'm from, (unintelligible) Native (unintelligible), fighting for our land. I may end up with enemies. I don't care. I do this in memory of my grandparents, who taught me our subsistence was of living off our land. Now, my husband and I teach our grandkids how to hunt. Last year, my granddaughter, 17 years old, caught her first moose. When she got it, we pass it out. And my 10- year-old grandson, Alla (phonetic), 'I caught my moose.' And guess what? We had to pass it out, too, because even we had no meat, we keep our traditional. We pass it out to the Elders. My little grandson, he was proud. He said, that, 'Alla (phonetic), I did it first.' We teach them how to hunt, how to set net, how to pick berries and (unintelligible) and etc. You tell them we were taught by you guys (unintelligible), never to waste anything.

EPA Response

See EPA's response to comment 6.E.2.

6.E.19 Anuska Wysocki (Doc. #2667-8, p. 26)

We fight to protect our land, environment, and water, because it is critical for our sustenance and survival, as indigenous people of this land.

We urge you to listen to the indigenous people, and many others who oppose mining in our area, and work religiously to finalize protection for our waters and environment. Finish your job, and finalize

protections of our waters before the end of this year. We deserve assurance that this mine, or any other mine that will be a threat to our land, waters, and way of life - please, do not jeopardize our future. Protect our lands and waters, and way of life, which are all irreplaceable. We cannot change or undo any mistakes that may happen.

EPA Response

See EPA's response to comment 6.E.2.

6.E.20 Natalia Wassilliey (Doc. #2667-9, p. 28)

No wonder my grandparents used to tell me, 'Listen, and respect Elders. They may don't know how to speak White man's language, but they have the knowledge.' I used to wonder what they meant. Now, I know. Some are gone, 40, 50 years now. Anyway, I used to love to listen to them talk about what's coming ahead, because I learned my Native tongue from my grandparents that raised me. They speak nothing but Yupik. And they'd tell each other, you know, 'Fight for our land. (unintelligible) we live here before them.' (unintelligible) When they'd gather, they'd say, they know exactly the spot where the gold is, but they didn't want to say anything, because they wanted to leave it alone, because our gold is our fishing.

EPA Response

See EPA's response to comment 6.E.2.

6.E.21 JJ Larson (Doc. #2667-11, pp. 35–36)

I didn't really want to come down here today. I'm, you know, I, I've only been testifying in these hearings for a few years. But it's already been really overbearing, and, and it takes a lot to come out and, and speak to government officials and tell them how much we don't want this mine, and how much it affects us, and how harmful it would be to our community.

When I was thinking about it this morning, the only thing that really stuck in my mind is that this mine would be the death of our culture. You know, we, we talk about fighting the mine. But we're not just fighting a mine, we're, we're fighting a spiritual fight. This mine would be the death of the way of our living. You know, we, we talk about the fish, and, and how important the salmon is to our, our community. But it's not just the fish. It's the wildlife that surround the rivers, that we subsist on. It's the rivers, and the lakes, and the lands that we roam.

You know, I talked to somebody that wasn't from here a while back, and they, they told me they've been here for a while, and they said, 'There's nothing to do here.' And I told them that, 'You know, we don't do the things that you do when you're raised in a big city. The things that we do is we go out and explore the land. That's what we do.' So, when you're not from here, you might not understand that. But that's what we do. And having a mine like this in our area, that you know, would be so devastating to our lands - it doesn't just affect the things in the water. It affects everything around it.

(...)

I just want to say that, you know, the, the most important thing for me is that this mine is not just one thing we're fighting. It's everything.

EPA Response

See EPA's responses to comments 6.E.2 and 6.E.4.

6.E.22 Wassiliisia Bennis (Doc. #2667-18, pp. 50, 51)

{We grew up in a fishing community. My family commercial drift, and set net. We all subsist for fish. We hunt for large and small game. And we gather plants and berries – we did that all our lives. Just the thought of not being able to pass my knowledge and experience to my grandchildren and their children brings me to tears. When this first started several years ago - geez, it's been 20 years - I was at the fishing table with my daughter, and my grandchildren, teaching them how to respect and process what we catch. This is our way of life.}

Your decision will have a lifetime impact on our way of life for decades. As I mentioned, I value, I respect our land, waters, and air, as my forefathers have. I'm a Tribal Member of Curyung, a shareholder of Choggiung, Limited, and I serve on the Bristol Bay Board of Directors. As an Elder, in learn - I'm still learning, I will always be - step forward to speak for our people, because I love our region, and I love our people .

EPA Response

See EPA's response to comment 6.E.2.

6.E.23 Curyung Tribal Council (Doc. #2667-20, pp. 53–54)

I grew up with our subsistence way of life. I was able to be taught by my grandmother, by my mother, and I now am able to teach my daughter. This isn't my fight. It's my fight for my children, for my nieces, and for my nephews, and for the future generations to come. I want to be able to be a grandma at the (unintelligible) table. I want to be able to be a grand - great-grandmother, sitting at the (unintelligible) table with my grandchildren. Please help us protect us our waters so that we can continue our subsistence way of life.

EPA Response

See EPA's response to comment 6.E.2.

6.E.24 Frances Nelson (Doc. #2667-21, p. 55)

There was an article in Anchorage Daily News that said, 'These tribes, in their little plywood and tin tribal offices think that they can take on the rich and powerful Northern Dynasty.' Well, we are. And we will continue to fight for our traditional and ancestral lands and waters, and for all the fish, wildlife, plants, and berries that call Bristol Bay their home.

I heard an Elder in (unintelligible) once. She spoke on a panel of Elders. She said, 'Who's going to speak for the fish, wildlife, plants, and berries? They have no voice. We have to speak for them.'

EPA Response

See EPA's response to comment 6.E.4.

6.E.25 Frances Nelson (Doc. #2667-21, pp. 56–57)

Since we are the village farthest up the river, our traditional and ancestral lands are at the headwaters of the Nushagak and Nuhipok (phonetic) Rivers. Like I said, we hold onto our lands. We don't sell out. There's little to no sports hunting and fishing and around and about Koliganek. We still believe that it is - it is our job to protect and care for our lands, waters, and all the abundant natural resources, like our Elders taught us. God chose us to occupy the Nushagak River, because He knew that we would care for it, protect this beautiful place.

(...)

We continue to utilize commercial fishing, hunting, fishing, trapping, and gathering to provide for our basic needs, and our families. Everything in Koliganek is owned and operated, maintained, and managed by our tribe

(...)

We are all about tribal sovereignty and self- determination.

EPA Response

See EPA's response to comment 6.E.2. See Section 3 of the FD for information regarding commercial fisheries.

6.E.26 Delores Larson (Doc. #2667-34, pp. 78–80)

I consider myself a rich Bristol Bay Native resident, but not because of the money in my pocket, but of the food in my freezer. With every season comes food on the table, and that sense of security, whether it's salmon, wild plants and berries in the summer, moose, pike, whitefish, beaver in the fall and winter, caribou geese and ducks in the spring - our fish and wildlife are not only fresh and abundant, but also very lean and healthy.

(...)

{The risks from large scale mining development are far too great for the Native people of this land.

I choose salmon. I choose Bristol Bay.}

EPA Response

See EPA's response to comment 6.E.2.

6.E.27 Kaitlyn Bond (Doc. #2667-24, p. 62)

I fish with my grandma. I help her out. And it's not only the fish that are going to be affected, it's going to affect everything. It's going to affect our people. It's going to affect our animals. It's going to affect our berries. It's going to affect our land. It's going to affect our ancestors. I just want, when I'm older, to teach my children, and my grandchildren, how to fish, how to take care of it - what my grandma taught me, what my mom taught me. And - sorry - if this doesn't work, and more mines come in, I'm going to be here when these Elders, or any of these people can't be here to talk. I'm going to talk. I'm going to defend our land.

EPA Response

See EPA's response to comment 6.E.2.

6.E.28 Cassandra Johnson (Doc. #2667-26, pp. 63–64)

We are the people that have lived on these lands, that utilize the waters that provide for us. These pristine waters are home to the salmon that have sustained us for time immemorial. Even before Western and foreign contact, we were here, the salmon were here, and we will continue to be here to speak for the fish, and to protect our home.

We are happy that you have been listening to us, to our requests, and our voices when we say we need protections so that industry doesn't destroy what our ancestors has passed on to us, because others have not when we have said no.

EPA Response

See EPA's responses to comments 6.E.2 and 6.E.9.

6.E.29 Peter Andrew (Doc. #2667-27, p. 65)

Welcome to [Dillingham], welcome to Bristol Bay. As you have heard, it is the epicenter of everything salmon. I, I want to thank you and your team, and especially the EPA for being the champion for us in Bristol Bay, to protect Bristol Bay. The State of Alaska has been missing in this action. This should be one of the most important things that the EPA can do for the world. This resource that Bristol Bay produces is a worldwide protein resource. It is worth billions of dollars. And as you have heard, many of our people, cultural people, Yupik - everybody here - rely on this culturally.

EPA Response

See EPA's response to comment 6.E.2.

6.E.30 Triston Chaney (Doc. #2667-35, pp. 80, 81)

And just like our ancestors, I was born and raised to respect and enjoy a subsistence lifestyle. But unlike my ancestors, I can't make a living trading, driving (unintelligible) and seal oil. I have to make money.

So, first and foremost, I'm a commercial fisherman for my grandpa.

(...)

That - commercial fishing - we are so successful with commercial fishing that I can - I went to school for four years with no debt, because of commercial fishing. My brother's going to school down in southern Oregon, you know. And he is going - he's - he is doing it without debt, either, because of commercial fishing. The fish here are so, so important.

EPA Response

See EPA's response to comment 6.E.2.

6.E.31 Teresa Capa (Doc. #2662-1, p. 4)

And I, I think about what a Curyung Tribal Chief, JJ Larson just said, that this is a spiritual battle, and think of that whole thing -like, if, if we're the - if Alaska is the - produces two-thirds of the world's wild salmon, wouldn't we protect it - protect our finances, if it's also the biggest industry in the state of Alaska. I think it, it was at the time, or is at the time - that - that, why wouldn't be protect it, you know? And I think it's because of the spiritual greed thing.

EPA Response

See EPA's response to comment 6.E.2.

6.E.32 Andrea Hurley (Doc. #2667-37, pp. 86-87)

I'm against it because if they do the Pebble Mine here in - out there, they're - we're not gonna have no more fish. We're not gonna have no more berries. We're not gonna have any more moose, caribou, porcupine, birds - you name it. Everything's gonna die off. The Pebble Mine is gonna kill it - kill our land, and our fish, our way of Native life, our subsistence way of Native life, which is wrong.

EPA Response

See EPA's response to comment 6.E.2.

6.E.33 Andrea Hurley (Doc. #2667-37, p. 87)

Yeah, they want the Pebble Mine up there - go do it somewhere else, because I think it's money, jobs - yeah. Well, I've worked all my life. Money don't mean shit. But you know what it is? It's your family, your loved ones, your Elders. They're the ones who brought us up to fish, pick berries, teach the way of subsistence life to provide for our families.

And I'm serious - if they do it, we're going to - we're going to have nothin' - starvation will come. What are, what are we going to live off? Are we going to eat our money? You look at the stores today. NNN (phonetic) - 18, big (unintelligible), for a package of meat, it's almost \$30. To go hunting, yeah, it costs

money for gas, for our shells, for whatever, oil. But we could get our moose and our caribou off our land, and live off that, and support our family.

EPA Response

See EPA's response to comment 6.E.2.

6.E.34 Friends of the Earth US (Doc. #2667-38, p. 90)

[T]his is your trust and responsibility to our tribal nations that depend on these fisheries, to protect their food security and way - way of life.

EPA Response

See EPA's responses to comments 6.E.2 and 6.E.15.

6.E.35 Janus Chulawic (Doc. #2667-40, p. 93)

Do you know what we're asking of you? To do your job. I'm asking you to go above and beyond, to protect our way of life, our cultures, my heritage. And the person that I am, being a Yupik Native woman.

EPA Response

See EPA's response to comment 6.E.2.

6.E.36 Christina Aspoke (Doc. #2663-2, pp. 3-4)

My name is Christina Aspoke. I was born in Anchorage, raised in Newhalen, practically my whole life. We moved to Dillingham for a few years, when I was maybe five. I moved back when I was eight. And even when I was younger, like in middle school age, like, people from the Nushagak area, like, and Bristol Bay area were the - just because I'm from here, and there's a lot of supporters, they would, like, harass us. And like, even on basketball trips in middle school, grown adults would, like, call us names, and like, cuss at us on the court.

And so, after that I was like, always really scared to speak up. But - sorry. I am moving to Montana in the fall, for school. But I would want to bring my kids back here, but I wouldn't want them to go through that, 'cause it's scary, especially for, like, someone really young, and they don't know what's going on.

I would want them to like, experience the things that I did with my parents, and like, learning our way of life, and putting, like - learn how to fish, live off the land, how they used to. It'd just be really hard to raise them in this area. And like, it wouldn't, like, bother me where they stand personally, like, for or against. It's just, I wouldn't want to bring my kids back here, for that reason. And I guess that's all I have to say. Thank you.

EPA Response

See EPA's response to comment 6.E.2.

6.E.37 United Tribes of Bristol Bay (Doc. #2667-43, p. 102)

[P]eople are here, sacrificing their time and energy at a very critical time for us, because this is so sacred to us, and we hope that that came across to you today, and that you truly recognize why people are here, and what this means to us as Native people in Bristol Bay.

EPA Response

See EPA's response to comment 6.E.4.

6.E.38 Kent Mingneau (Doc. #2667-44, pp. 102–103)

This land and waterway are ingrained in the ways of life, and survival for the Native communities - the tundra for berries, animals, and hunting; the rivers for fishing, and transportation, a means of getting wood for heating, cooking, and building. Also, the rivers and the tundra for transportation of goods for our families - in many instances, the only way to get goods and supplies to our villages. This land and waterways are as much a part of the families as blood and spirits.

I live here, and I don't want it to change. I can see how it's changed people's lives in the past in, in other mining industries. We cannot make this another instance where the people are displaced from their lands and their homes, just because someone else wants to profit from it.

EPA Response

See EPA's response to comment 6.E.2.

6.E.39 Violet Apalayak (Doc. #2667-45, pp. 103–104)

My grandparents raised me. (Native words) In Manokotak. (Native words). Pavlov (phonetic), Julia Apalayak. (Native words) My late Dad, Pavlov Apalayak, Anaka (phonetic), Kay Andrews, my mom, she supported to make the bridge at Aleknagik - that's where there's a Brood (phonetic) River Bridge there in Bristol Bay.

(Native words) And about the waters (Native words) I fished at Eusemi (phonetic), Iguigig, New Shegak Bay, (Native words) even in Ekuk, too. (Native words) Bristol Bay, protect (Native words) - protect it. (Native words) EPA 404C, support Agaluku (phonetic) - support it. (Native words) My mom's late mom (Native words) Our land is beauty. My (Native words) My children (Native words) to think about.

EPA Response

See EPA's response to comment 6.E.2.

6.E.40 Maria Dosal (Doc. #2667-46, p. 105)

I am here today on behalf of my ancestors, the (unintelligible) people who have been displaced, (unintelligible), have been tricked into leaving on boats to go to an area where they've never been before. I do not want that to happen here because of a big company coming in and ruining the lands.

I am here today on behalf of the future generations that will exist here long after I'm gone and dead in the ground. I hope and I pray that they will - that they will get to enjoy the same liberties, and the same subsistence, and the same harvesting that I get to enjoy with my family today. The salmon and our ecosystem mean so much more to us than anything - than any mine. I'm so tired and exhausted of having to fight endlessly for what seems like forever to impose permanent protections of this area. Please, please help us in protecting our culture, our traditions, and our way of life.

There may come a time when that is all that we have left.

EPA Response

See EPA's responses to comments 6.E.2 and 6.E.4.

6.E.41 Frank Woods (Doc. #2667-48, pp. 110-111)

In every meeting, from - every time I go to a meeting, the youngest person in the room is the most important, because that's who we are meeting for, and that's who we want to help protect our land and our culture for.

Someone corrected me about 20 years ago, and said we are - I'm an Alaskan Native. I - I'm - I have a choice every morning. Either I do it the right way, my grandmother said that's the right way of living. We honor those things. You heard someone interpreting Yupik. That's an honor for me. I went to Western school. I learned how to educate myself. What this, what this has done is unified our people. Ten years ago, 15 years ago, it wasn't.

I'll, I'll be quiet, but I'm glad to - please, I'm here to help - ask you, and implore you to - and strengthen the rules and regulations to end this for our people. We don't need to be divided and separated on any issue.

EPA Response

See EPA's response to comment 6.E.2.

6.E.42 Curyung Tribal Council (Doc. #2667-53, p. 118)

You know, traditionally, as we go through things, a song traditionally comes to people - comes to us. I'm not going to sing in front of you guys today. But I will say the words that spoke to me, and I truly believe that it came from our ancestors.

And this is what it is. Our people are of this land. Our people have stood the test of time. Our people will always stay. We are the people of Bristol Bay. Hear our voices, and hear us loud. We stand strong, and we stand proud. Standing firm on sacred ground, we will fight to protect this land - to protect the waters, and the streams, as it has given life to me. The life the water continues to grow, as it has done so many years ago. Hear our voices, and hear us loud. We stand firm, and we stand proud. We will fight to protect this land. We will continue to fight to protect this land.

EPA Response

See EPA's responses to comments 6.E.2 and 6.E.9.

6.E.43 Chelsea Kasailly Decker (Doc. #2664-24, pp. 20–21)

I'm originally from the Bristol Bay region. I'm Alaska born and raised. I've been in this fight since a good portion of my lifetime, and I'm not even 30 yet. And the continual persistence of the indigenous people of this land, and the younger generations are now being in the roles of the leadership positions have done a great job fighting for this land and fighting for the rights of our people. And it is still stomach aching that we still have to continually... But we will continue to speak up for our people, and the land, and the fish, and the lifestyle that is at risk due to the proposed development of the Pebble Mine, that has been here for a long time, that the people of Bristol Bay are getting tired.

(...)

Not only the people of the Bristol Bay region, but the people of Alaska and everybody that I've talked to, encouraging them to seek out to the Environmental Protection Agency to further protect the Bristol Bay watershed. With that being said, the people of Bristol Bay cannot be bought. And one of them being my dad, he was offered, at one point, for one king salmon, \$5,000, and he denied it. So the people of Bristol Bay will continue to show up, but we're asking the Environmental Protection Agency to close this. And thank you so much, and thank you for your time, and thank you for coming out to Bristol Bay.

EPA Response

See EPA's responses to comments 6.E.2 and 6.E.4.

6.E.44 Daniel Decker Sr. (Doc. #2664-25, p. 21)

I think the only thing I really want to say is, if you don't put the protections in place that need to be there, then your agency and the people who work in your agency are going to be responsible for destroying a way of life that's been around longer than the United States, probably longer than most countries on the planet right now. And I have to ask, can you really live with yourselves, having that knowledge? There's a lot more at stake here than just this mine. These are people's lives. My life, my family's life. And again, I ask you, would you be able to live with yourselves if you allowed this travesty to happen?

EPA Response

See EPA's responses to comments 6.E.2 and 6.E.4.

6.E.45 Kyra Chandler (Doc. #2664-26, p. 21)

{I am a hobby angler, and an avid outdoor enthusiast. Bristol Bay is a world treasure. It is a biodiversity hotspot, and is one of the last remaining intact salmon runs on the planet. We can't lose it. Please put the

strongest protections in place to ensure that Pebble Mine can never, ever create an open pit mine in this incredibly valuable ecosystem.}

Please ensure that the Native Americans who live there, who stand the most to lose, don't become another story of climate injustice, social injustice, for commercial progress.

EPA Response

See EPA's response to comment 6.E.2.

6.E.46 Margie Olympic (Doc. #2666-5, p. 17)

I don't know if I should thank you, or be frustrated with you coming in and giving us locals two minutes to talk again - scheduling an EPA hearing when there is a lot of locals gone for the summer.

First, I want to say the anti-Pebble groups, fishing lodges, BBNA, and BBNC, does not speak and represent me and my family. You are coming into Iliamna, Newhalen with your own agenda and opinions, checking off a box, saying, 'Yes, we went to Iliamna, Newhalen,' wasting my time and your time.

Have you ever been in the presence of our local people working for Pebble? Have you ever walked into the Pebble office and speak to our local people, and see their faces on how proud they are in having a job to support their families? No. You are too busy checking your boxes, and with your mind already made up. And clearly, you don't even live in our region.

EPA Response

EPA has listened to and respects the diverse perspectives of all Alaska Natives in the Bristol Bay area. Sections 2 and 6 of the FD discusses EPA's process to consult with tribal governments and ANCSA Corporations. A summary of EPA's tribal consultation and ANCSA Corporation consultation processes can be found at regulations.gov at Docket No. EPA-R10-OW-2022-0418.

See also EPA's response to comment 6.E.1.

6.E.47 Lisa Reimers (Doc. #2666-11, pp. 33-35)

So we're, we're struggling with the fact that - why EPA is trying to come in. And the only thing we can think of is, it's all political. It's driven politically by Trout Unlimited, BBNC, BBNA, and all these propaganda that's against Pebble. They don't even have the facts. They're just basing it on, like Tim said, 'Oh, it's gonna be - the tails - the tailing dam's gonna be higher than the Space Needle.' I believed it when I first saw that - but that's not true. We've been to mines, and that's not a true statement.

We love our area. We love our fish, we love our water. This is our home. This is where I grew up. I, I drove around the two consultants here, and I showed them where we had our high school. It wasn't the building that's there now. It was a building that's partly burned. And we grew up without water, without sewer. We, we grew up - it was a hard life. We choose not to live that way. We want to live here. This is

our home. We want to continue to live here. We do not want EPA coming in here, telling us what to do, with the 404 Clean Water Act. We don't want Trout Unlimited in here. We don't even know these people. BBNC never comes in here. I'm really frustrated they came in here, because we asked them to come in early on to say, 'Come in and see what's going on. See what you can do to help the communities.' They came in when you came in, but they didn't come in when we asked them. And we're part of BBNC.

So, I'm really frustrated. And we don't know how to fix it, and you guys listen to everybody else, because everybody lobbies you guys in DC. Trout Unlimited has a huge amount of money. They go to DC and they lobby you, and you guys listen to them. And so you guys come flying in because you guys think the Natives want you guys to save us. We don't want you to save us. We don't want you guys here. We own the land here. We don't want you here at all. We already have enough hardship with what we have here.

EPA Response

Section 4 of the FD provides the basis for EPA's determination that discharges of dredged or fill material from developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. Specifically, Sections 4.2.1 through 4.2.4 of the FD provide EPA's findings that the levels of aquatic resource loss and streamflow change described in these sections would result in unacceptable adverse effects whether they occur at the mine site or elsewhere in the SFK, NFK, or UTC watersheds. Based on these findings, Section 5 of the FD prohibits and restricts the use of certain waters in the SFK, NFK, and UTC watersheds as disposal sites for the discharge of dredged or fill material associated with developing the Pebble deposit.

EPA has listened to and respects the diverse perspectives of all Alaska Natives in the Bristol Bay area. Sections 2 and 6 of the FD discusses EPA's consultation process with tribal governments and ANCSA Corporations. A summary of EPA's tribal consultation process can be found at regulations.gov at Docket No. EPA-R10-OW-2022-0418.

6.E.48 Charles Borbridge (Doc. #2097, p. 1)

{Damage to the pristine waters would harm those that annually benefit.}

(...)

Indigenous people of Bristol Bay have felt culturally connected to the returning salmon runs for 1,000's of years. It's not just a protein in the diet but a connection to the land that nurtures the salmon runs.

EPA Response

See EPA's response to comment 6.E.9.

6.E.49 Anuska Wysocki (Doc. #2667-8, pp. 25–26)

For 10,000 years, we, the Native people of Bristol Bay, have took care of our environment, land, and water because our very existence and survival depends on it. We play a critical role in, in ensuring a resilient, and healthy environment for, for people, and nature. We are the Salmon People, the indigenous people of this land. We are the salmon capital of this world. There is no other place in this world that provides wild salmon like we do, and we want it protected. It is critical to our sustenance as human beings, and way of life.

You have an important decision to make. We want you to recognize the indigenous people, land and water rights. We want you to focus on critical knowledge, just like science, and how we have coexisted with our environment for thousands of years. Our way of life, clean water, salmon, and environment is priceless. We cannot put a value on it. It can't be found anywhere else in this world. Science shows that the entire - the entire headwaters of our watershed needs to be protected. How can we expect to have clean, safe water and land, when there is no safe place to store the mine waste at the headwaters of Bristol Bay? Our ancestors, and we know it. It's not safe.

EPA Response

See EPA's responses to comments 6.E.2, 6.E.4, and 6.E.9.

6.E.50 Pilot Point Tribal Council (Doc. #2701, p. 1)

The Bristol Bay watershed is more than just home for the largest wild sockeye salmon runs in the world; it is the lifeline for the Native people of Bristol Bay and all those who depend on it. Bristol Bay's wild salmon have been the foundation of our Alaska Native cultures in the region for thousands of years and continues to produce half of the world's commercial supply of wild sockeye salmon, sustaining 15,000 annual jobs, and generating roughly \$2.2 billion in annual economic activity.

Bristol Bay Tribes first petitioned the EPA to prohibit mines like Pebble in the region more than a decade ago, and in the years since, the science, history, and facts prove how detrimental this project would be to the Bristol Bay region. As the Pilot Point Tribal Council, we prioritize the protection of the health of our watershed and therefore our people.

EPA Response

See EPA's responses to comments 6.E.2, 6.E.4, and 6.E.9.

6.E.51 Alaska Peninsula Corporation (APC) (Doc. #2668, pp. 4–5)

4. The 404(c) Determination is Culturally Biased.

The determination appears to put a high value on the Bristol Bay commercial salmon fishery. As EPA must be aware, that commercial salmon fishery is overrepresented by outside fishermen, and the lion's share of economic rewards are shared between those outside fishermen and outside processors. By

contrast, the economic rewards from the Pebble project, if it were to be permitted, would flow almost immediately to Alaska residents, and in particular, Alaska Native residents of the Iliamna Lake region.

Alaska has had a long history of successful coexistence between commercial fishing and resource development. While the EIS recognizes this long history, the EPA proposed determination ignores it. But, one way of life should not imperil another.

In that regard, villages within 75 nautical miles from Bristol Bay enjoy the benefits of the Bristol Bay Economic Development Corporation ("BBEDC"). BBEDC net worth exceeds \$100,000,000, and it shares its largesse with only seventeen villages. By contrast, the Iliamna Lake villages, and in particular Newhalen and Kokhanok, do not share in the riches of BBEDC. Yet, it is BBEDC that the EPA listens to and not the small, insular Villages that have the most to lose if the 404(c) determination goes through.

Thus, the 404(c) determination is culturally biased. It favors the rich and powerful, commercial fishing industry and the growing tourist industry, and in particular lodges, at the expense of people who can least afford it: our Shareholders.

The EPA, in a recent trip through Newhalen, was shown the huge concentration of sportsman's lodges in and around Newhalen and Iliamna. It is that pressure that is causing economic dislocation, as well as the outmigration of fishing permits. In short, it appears that a political decision is being made to favor the rich and the powerful against those struggling economically to retain their homes and their culture. That is wrong and results in a significant cultural bias. What does the EPA propose to replace the economic loss that APC's shareholders are facing?

EPA Response

EPA has listened to and respects the diverse perspectives of all Alaska Natives and interested parties in the Bristol Bay area. Sections 2 and 6 of the FD discusses EPA's process to consult with tribal governments and ANCSA Corporations. A summary of EPA's tribal consultation and ANCSA Corporation consultation processes can be found at [regulations.gov](https://www.regulations.gov) at Docket No. EPA-R10-OW-2022-0418.

EPA disagrees that the FD is culturally biased. The potential effects on aquatic resources from the development of the Pebble deposit have been the subject of study for over a decade. The FD is based on an extensive record of scientific and technical information. EPA has determined that the discharge of dredged or fill material associated with developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD provides the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas.

Regarding employment and economic development, economic-related issues are discussed in the document entitled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b) (referenced in Section 4 of the FD).

6.F Consideration of Potential Costs

EPA's longstanding position is that the Agency's determination of "unacceptable adverse effects" under CWA Section 404(c) must be narrowly focused on the significance of adverse effects on the resources enumerated in the statute. Sections 4.2.1 through 4.2.4 of the FD provide the basis for EPA's determination that discharges of dredged or fill material from developing the Pebble deposit will result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. However, as part of an alternative basis for its action (see Section 4.4 of the FD), EPA has evaluated non-environmental costs, including the economic value of the forgone mining project. EPA considered and weighed a broad range of advantages (benefits) and disadvantages (costs), which are described in the FD and in the document *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b) (hereinafter, the Cost Document).

Unless otherwise specified, comments in this section 6.F of the EPA's Response to Comments Document refer to EPA's broader considerations under the alternative basis.

6.F.1 Pebble Limited Partnership (PLP) (Doc. #0095, p. 1)

The Proposed Determination is an unprecedented action that, if finalized, would preclude mining development within a 309 square-mile area, despite the fact that the vast majority of that area was specifically selected and designated by the State of Alaska for mining development. The Proposed Determination would eviscerate PLP's valuable mineral claims, as well as the tremendous economic opportunity the project represents for local native communities.

EPA Response

With respect to the commenter's contention that EPA's action is unprecedented, EPA disagrees. See EPA's responses to comments 2.C.13 and 2.C.44.

With respect to the commenter's contention that EPA's action would "preclude mining development within a 309 square-mile area," EPA disagrees. See EPA's response to comment 2.C.1 and 6.F.25. To the extent the commenter bases its contention on "the fact that the vast majority of that area was specifically selected and designated by the State of Alaska for mining development," see EPA's response to comment 2.C.17.

With respect to the commenter's contention that EPA's action "would eviscerate PLP's valuable mineral claims," see EPA's response to comment 2.C.45.

With respect to the commenter's contention that EPA's action would affect the "economic opportunity the project represents for local native communities," EPA considered estimates of the impacts to local communities through employment, aggregate economic activity, and tax revenue generated by the 2020 Mine Plan as reported in the FEIS and the IHS Markit report (IHS Markit 2022); see Section 6.1 of the Cost Document. EPA also

considered the estimated impacts to Alaska Natives, tribes, and Alaska Native Corporations through the Pebble Performance Dividend, employment, and local spending due to the 2020 Mine Plan as reported in the FEIS, the Pebble Project Preliminary Economic Assessment (PEA) (Kalanchey et al. 2022), and Loeffler and Schmidt (2017); see Section 6.3 of the Cost Document. In Section 5 of the Cost Document EPA discusses the local employment, aggregate economic activity, and tax revenue being generated by the Bristol Bay fishery and other ecosystem dependent industries that are currently operating and could experience impacts from the 2020 Mine Plan.

6.F.2 Trillium Asset Management LLC (Doc. #0162, p. 2)

As we have written previously, we believe that for widely diversified investors with long-term investment horizons the value of our portfolios is dependent in part on sustainable global economic growth. For that reason we are aware of the need for natural resource development to support economic growth as well as the development of clean technologies, which hold the promise of more sustainable economic growth. But we are also concerned that returns could be negatively affected by corporate behavior with negative social and environmental impacts. It is in our interest for our portfolio companies to reduce these risks and also protect our reputations from activities that may tarnish us through association. We therefore believe it is critically important for mining activity to occur in ecologically and culturally appropriate areas.[<https://archive.trilliuminvest.com/wp-content/uploads/2014/09/Pebble-Mine-EPA-09.16.14.pdf>]

We are concerned that if large-scale mining occurs in the Bristol Bay watershed with the impacts described in the Proposed Determination, that it could cast a cloud over mining projects in general – even responsible and safe ones. This has the potential of increasing mining costs generally and may put into question appropriate mining projects. Such occurrences could be destabilizing to the global mining and fishing industries and consequently not helpful for long-term economic growth.

EPA Response

EPA’s CWA Section 404(c) action does not regulate mining or mineral development. Section 4 of the FD provides the basis for EPA’s determination that discharges of dredged or fill material from developing the Pebble deposit will result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. Section 5 of the FD describes the defined area for prohibition and the defined area for restriction, within which EPA prohibits the specification of and restricts the use for specification of certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with the 2020 Mine Plan or developing the Pebble deposit. Section 5 of the FD identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD.

6.F.3 H2T Mine Engineering Services, LLP (Doc. #0270, p. 2)

There has been no attempt to assess the economic impacts of this decision to the state of Alaska.

EPA Response

EPA considered estimates of the impacts to the State of Alaska by including relevant information on state level impacts from both the FEIS and the IHS Markit report. For additional details, see Section 6.1 of the Cost Document. The state-level information presented includes employment, output, value added, labor income, and tax revenue estimates.

6.F.4 Alaska Miners Association (AMA) (Doc. #0803, p. 4)

The Proposed Determination also robs the region, state, and country of jobs and opportunity. The economic activity and revenue brought by Pebble would be especially important for communities closest to the project that have few year-round jobs and face extremely high costs of living. Pebble could provide thousands of jobs, generate hundreds of millions of dollars in economic activity, and make important contributions to the state and local government in Alaska (over \$150 million according to the EIS). The EPA action takes none of this into account, especially the positive impact this could have for the communities around Iliamna Lake. Conversely, the Proposed Determination does little to recognize that the commercial fishery is a seasonal employer with many permits fished by people outside of Alaska and processing work staffed by many from other countries. While the commercial fishery is an important employer, the jobs associated with Pebble would be year-round and in ranges of \$115,000 annually – a game changer for those living in Southwest Alaska.

EPA Response

EPA considered estimates of the jobs created as a result of the 2020 Mine Plan from the FEIS and the IHS Markit report. See Sections 6.1 and 6.3 of the Cost Document for discussion of potential impacts related to mine employment. EPA considered estimates of employment generated by the Bristol Bay fishery and other ecosystem dependent industries that are currently operating and could experience impacts from the 2020 Mine Plan. See Section 5 of the Cost Document.

EPA considered how its action might impact seasonal unemployment in Section 4.2 of the Cost Document.

See EPA’s response to comment 6.F.3 regarding impacts to the State of Alaska.

See EPA’s response to comment 6.F.1 regarding impacts to local communities and economic activity.

6.F.5 Alaska Chamber (Doc. #0806, p. 2)

In addition, the Proposed Determination deprives the underserved community. The economic activity and revenue brought by Pebble would be especially important for communities closest to the project that have few year-round jobs and face extremely high costs of living. Pebble could provide thousands of jobs, generate hundreds of millions of dollars in economic activity, and make important contributions to the state and local government in Alaska (over \$150 million according to the EIS).

EPA Response

EPA disagrees that it failed to consider potential tax revenues resulting from the 2020 Mine Plan. Section 6.1.2 of the Cost Document includes estimates from the IHS Markit report. of tax revenue generated by the 2020 Mine Plan to both state and federal governments.

See EPA's response to comment 6.F.1 regarding impact to local communities and economic activity.

See EPA's response to comment 6.F.4 regarding jobs.

6.F.6 National Mining Association (NMA) (Doc. #0809, p. 4, 6)

{EPA's Proposed Determination Will Have Negative Consequences on the Mining Industry and Broader Regulated Community}

(...)

* Chills Investment in U.S. Operations

EPA's preemptive Section 404(c) veto will also chill investment in U.S. operations and thwart our members' ability to conduct important development projects domestically. Investors will not want to risk investing in a U.S. project if EPA can preemptively veto it before going through the established regulatory process. The importance of regulatory certainty in attracting investment in mining projects cannot be overstated. Mining is a capital-intensive process that takes years of development before minerals are produced. Years may pass before any profit is realized, impacting the ability of mining companies to attract investment capital. Mining capital is highly mobile, meaning the risk of capital is a critical factor in deciding whether a mining project will go forward. Investors favor projects where they are likely to get the earliest return on their investment and where they know they have the necessary security of title and tenure from the time of location through mine reclamation and closure. As a result, investment dollars for mineral exploration and development tend to flow to countries with a stable political environment, strong economy, an efficient permitting system, and predictable regulatory climates. Investors routinely identify changes in the operative law as their biggest regulatory risk. Moreover, the U.S. mining sector operates under some of the highest environmental standards, labor protections, and health and safety standards in the world. As the Biden administration seeks ways to

achieve its ambitious goals, it should encourage investment in, rather than block and disincentivize, domestic minerals mining, manufacturing, construction, and other important development projects.

EPA Response

Regarding the commenter’s contention that EPA’s CWA Section 404(c) action is a “preemptive veto” and will prevent domestic development opportunities, EPA disagrees. See EPA’s responses to comments 2.C.44 and 6.F.1. EPA also notes that although USACE authorizes approximately 74,000 permit activities in the nation’s waters each year, EPA has used its CWA Section 404(c) authority very sparingly, issuing only 13 Final Determinations since 1972.

To the extent that the commenter asserts that EPA’s use of CWA Section 404(c) injects uncertainty into the regulatory process, EPA disagrees. See Section 2 of the FD and EPA’s response to comment 2.C.13 for discussion of how the FD promotes regulatory certainty.

EPA’s characterization of costs and benefits is constrained to the economic impacts associated with its FD.

EPA does discuss the difficulty of estimating the impact of this particular mine project on long-term growth in Section 4.2 of the Cost Document. EPA presents potential adverse impacts on long-term economic growth in Section 6.1 of the Cost Document, but finds that they are likely overstated. In particular, the IHS Markit report likely overestimates the economic impacts of the 2020 Mine Plan because static economic impact models are unable to consider the forgone economic activity as a result of a project occurring, and therefore the interpretation of estimates from these types of models should be conditioned on those uncertainties; see Section 4.2 of the Cost Document. Section 6.2 of the Cost Document describes how any negative impact of the FD on long-term mineral supply and subsequent economic growth may be offset by recycling and production in other regions, and that development of the 2020 Mine Plan would have a minimal impact on supply constraints.

6.F.7 Alaska and 13 other States (Doc. #0810, p. 4)

{In this veto, Region 10:}

(...)

* fails to seriously consider the costs of its veto (including costs of the project’s loss to local, state, and national economies); [See Proposed Determination at 6-25 (incorporating by reference separate costs analysis).]

EPA Response

I. Introduction and Purpose

Some commenters questioned how and whether EPA weighed or considered the benefits (or “advantages”) and costs (or “disadvantages”) of its determination that were referenced in Section 6.4 of the proposed determination. Commenters also asked how such consideration impacted EPA’s determination pursuant to Section 404(c).

As described in Section 4.1, EPA’s longstanding position is that the Agency’s determination of “unacceptable adverse effects” under CWA Section 404(c) must be narrowly focused on the significance of adverse effects on the resources enumerated in the statute—municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, and recreational areas. *See* 40 CFR 231.2 (“Unacceptable adverse effect means impact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies (including surface or ground water) or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas.”); 44 Fed. Reg 57,076, at 58,078 (Oct. 9, 1979) (“The term ‘unacceptable’ in EPA’s view refers to the significance of the adverse effect—e.g. is it a large impact and is it one that the aquatic and wetland ecosystem cannot afford.”). Under EPA’s longstanding position, CWA Section 404(c) does not require the balancing of various adverse and non-adverse factors that are unconnected to the statutory text. *See* 44 Fed. Reg. at 58,078 (“In EPA’s view, section 404(c) does not require a balancing of environmental benefits against non-environmental costs such as the benefits of the foregone [sic] project.”).

The best interpretation of CWA Section 404(c) is that EPA is not required to consider non-environmental costs in making its determination. However, as part of an alternative basis for its action, EPA has evaluated those non-environmental costs including the economic value of the forgone project. This response describes EPA’s alternative basis for determining “unacceptable adverse effects” pursuant to Section 404(c) based on a totality-of-the-circumstances consideration of the advantages and disadvantages of its action, including non-environmental costs.

II. Assessment of Advantages and Disadvantages

Under its alternative basis, EPA employed a totality-of-the-circumstances analysis to “pay attention to the advantages and disadvantages of [EPA’s] decision,” *Michigan*, 576 U.S. at 753, in determining whether there are unacceptable adverse effects under Section 404(c).¹⁸ Under this approach, EPA considered and weighed the totality of the

¹⁸ EPA described these advantages and disadvantages in *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Proposed Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2022a),

circumstances, including costs, to determine whether there are unacceptable adverse effects. And, although all of the advantages and disadvantages documented by EPA were relevant, EPA weighed the significance of each advantage and disadvantage identified. EPA also considered Congress's design of CWA Section 404(c) specifically, and Section 404 and the CWA more generally, in its weighing.

Based on this alternative approach, EPA has considered and evaluated the information regarding the adverse environmental effects considered in the FD and additionally considered and evaluated the information described in the document titled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b). As described in those sources, EPA's determination would have both advantages (benefits) and disadvantages (costs). Both the advantages and disadvantages of EPA's action are significant, in quantitative as well as qualitative terms. Considering the totality of the circumstances and the factors EPA found relevant to this particular action, EPA has concluded under its alternative basis that the balance of these considerations weighs in favor of finding "unacceptable adverse effects" under Section 404(c).

After consideration of the totality of the circumstances, including quantitative and qualitative advantages and disadvantages, EPA has determined that the discharges of dredged or fill material evaluated in this final determination will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. Specifically, EPA has determined that each of the losses or streamflow changes described in Sections 4.2.1 through 4.2.4 of the FD independently will have unacceptable adverse effects on anadromous fishery areas if such discharges occur in the mine site area (FD Figure 4-1) or anywhere within the SFK, NFK, and UTC watersheds. In this alternative basis for EPA's unacceptable adverse effects determinations, EPA expressly incorporates the information and findings in Sections 2 through 4 of the FD. To the extent that EPA's alternative basis applies, these conclusions and rationale directly support the prohibition described in Section 5.1 of the FD and the restriction described in Section 5.2 of the FD.

II.a Legal Background

EPA's alternative approach to making an "unacceptable adverse effects" determination is an exercise in judgment based on the Agency's application of its expertise to the totality of the circumstances. This type of weighing of factors and circumstances is an inherent part of regulatory decision-making. See *White Stallion Energy Ctr., LLC v. E.P.A.*, 748 F.3d 1222, 1266 (D.C. Cir. 2014) ("All regulations involve tradeoffs, and . . . Congress has assigned EPA, not the courts, to make many discretionary calls to protect both our country's environment and its productive capacity."). And, in exercises of judgment such

which was referenced in Section 6.4 of the 2022 Proposed Determination and which was available for review and public comment.

as this, EPA is not required to employ bright-line tests. *See, e.g., Catawba Cty. v. EPA*, 571 F.3d 20, 37 (D.C. Cir. 2009) (“An agency is free to adopt a totality-of-the-circumstances test to implement a statute that confers broad authority, even if that test lacks a definite ‘threshold’ or ‘clear line of demarcation to define an open-ended term.’”). Further, in reviewing Agency decisions like these, courts are “not to substitute [their] judgment[s] for that of the agenc[ies],” *Motor Vehicle Mfrs. Assn. of United States, Inc. v. State Farm Mut. Automobile Ins. Co.*, 463 U.S. 29, 43 (1983), and “[t]his is especially true when the agency is called upon to weigh the costs and benefits of alternative policies,” *Center for Auto Safety v. Peck*, 751 F.2d 1336, 1342 (D.C. Cir. 1985); *see also Michigan*, 576 U.S. at 759 (“It will be up to the Agency to decide (as always, within the limits of reasonable interpretation) how to account for cost.”). And, because the Agency is evaluating a number of complicated technical and environmental issues in exercising its judgment under Section 404(c), it is entitled to further deference. *See, e.g., Env'tl. Def. Ctr. v. U.S. E.P.A.*, 344 F.3d 832, 869 (9th Cir. 2003) (“We treat EPA’s decision with great deference because we are reviewing the agency’s technical analysis and judgments, based on an evaluation of complex scientific data within the agency’s technical expertise.”).

In undertaking this consideration of the advantages and disadvantages of its action, EPA acknowledges that challenges with quantifying or monetizing the advantages and disadvantages of EPA’s action exist. However, EPA believes it is appropriate to give weight to these advantages and disadvantages, even where uncertainties make a particular advantage or disadvantage difficult to precisely quantify or monetize. And, agencies are entitled to this deference even where costs or benefits can be difficult to quantify. *See, e.g., Consumer Elecs. Ass’n v. FCC*, 347 F.3d 291, 303-04 (D.C. Cir. 2003) (Holding where plaintiffs challenged use of qualitative description of benefits that “[w]e will not here second-guess the Commission’s weighing of costs and benefits.”); *Nicopure Labs, LLC v. FDA*, 266 F. Supp. 3d 360, 403-404 (D.D.C. 2017), *aff’d*, 944 F.3d 267 (D.C. Cir. 2019) (Finding that the agency was under no obligation to quantify benefits in any particular way and that the agency’s qualitative statement of benefits “provided substantial detail on the benefits of the rule, and the reasons why quantification was not possible”).

II.b Factors Impacting EPA’s Analysis

EPA’s determination of an “unacceptable adverse effect” necessarily involves a case-by-case determination based on many factors. EPA’s consideration of “unacceptable adverse effects” under its alternative basis includes, but is not limited to, considerations of the same factors EPA considered under its longstanding interpretation of Section 404(c) described in the FD. Without repeating the entirety of that analysis here, one example of factors EPA considered in the FD is that EPA determined that the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan, resulting in the loss of approximately 8.5 miles (13.7 km) of anadromous fish streams, will have

unacceptable adverse effects on anadromous fishery areas in the NFK watershed based on the following factors: the large amount of permanent loss of anadromous fish habitat (including spawning and breeding areas); the particular importance of the permanently lost habitat for juvenile Coho and Chinook salmon; the degradation of additional downstream spawning and rearing habitat for Coho, Chinook, and Sockeye salmon due to the loss of ecological subsidies provided by the eliminated anadromous fish streams; and the resulting erosion of habitat complexity and biocomplexity within the NFK watershed, both of which are key to the abundance and stability of salmon populations within this watershed. See Section 4.2.1.5.1 of the FD.

Under its alternative basis, EPA interprets “unacceptable adverse effects” to encompass a broader range of factors than it does under EPA’s longstanding interpretation of Section 404(c) described in the FD. One way in which EPA considered a broader range of factors was that the Agency considered additional environmental factors. EPA considered factors such as the extent to which EPA’s action affected other ecosystems that are linked to areas directly affected by EPA’s proposed action and the ecological value and significance of those linked ecosystems nationally and globally. EPA also considered ecological effects from spill and dam failure risks, including high-consequence, low-probability events such as a full tailings storage facility dam breach.

EPA’s broader set of factors under its alternative basis also included non-environmental factors based on public welfare. For example, EPA considered economic welfare factors such as how its action would impact employment and economic activities. EPA considered the significance of economic activities, both in quantitative and qualitative terms. EPA considered these economic factors at several geographic scales, paying close attention to how its action would economically affect those closest to the site of EPA’s action, but also considering how its action might economically affect people further from the defined area including on a nationwide scale. Similarly, EPA considered the time scales in which economic activities would occur, including whether economic activity would be expected to be temporary or longer lasting. EPA’s economic consideration included not only those economic activities that would be directly affected by EPA’s action (either positively or negatively), but also those economic activities that would be secondarily affected by changes to the directly affected activities. EPA also considered the distributional economic impacts of its action, including how its action could benefit or harm specific economic sectors and actors, how its action might affect the distribution of economic activity through taxes, and how its action would result in environmental justice impacts.

EPA also considered public welfare factors under its alternative basis that are more difficult to quantify. For example, EPA considered the effect of its action on cultural resources, including how its action would impact traditional and culturally significant ways of living, as well as how it would impact culturally significant physical locations and organisms. Many of these cultural factors relate to Alaska Native communities, many of

which have cultural connections to the Bristol Bay ecosystem in its least disturbed (*i.e.*, closest to pristine) form, and whose cultures could be impacted by disturbances to the status quo. EPA also considered how its action would affect recreational uses, including fishing, wildlife viewing, hunting, boating, camping, backpacking, beach combing, and picnicking in the Bristol Bay area. EPA considered factors related to how its action would affect individuals' quality of life in ways that are difficult to quantify, such as impacts to aesthetics, noise, and traffic. EPA also considered public welfare effects from spill and dam failure risks, including high-consequence, low-probability events such as a full tailings storage facility dam breach.

Some factors EPA considered related more directly to human health. For example, EPA considered how its action impacted the value of subsistence activities in Bristol Bay for human health, including nutritional value, social cohesion value, and the inherent value of subsistence resources to some people. EPA also considered whether its action would have beneficial and adverse impacts on regional health and safety risks that are difficult to quantify due to a lack of data, such as risks of exposure to hazardous chemicals.

EPA also considered the uncertainties associated with the advantages and disadvantages of its action. These uncertainties may affect whether an advantage or disadvantage is likely to occur and the magnitude of its impacts.¹⁹ EPA also considered whether the availability of data created uncertainty about an advantage or disadvantage.

In considering the totality of the circumstances to determine whether certain discharges of dredged or fill material will result in unacceptable adverse effects, EPA considered Congress's design of CWA Section 404(c). Specifically, EPA considered that Section 404(c) enumerates specific resources: municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, and recreational areas. Therefore, EPA considered how the advantages and disadvantages of its action are directly or indirectly related to those enumerated resources.

Additionally, EPA considered that its Section 404(c) determination here is an adjudication related to a specific geographic area. Unlike in other contexts in which EPA might consider costs, EPA here is not considering the effects of a nationwide rule that imposes compliance costs on industry. Therefore, while EPA broadly considered advantages and disadvantages, one factor EPA took into account was the extent to which a given advantage or disadvantage accrued relative to areas that are the subject of its action.

¹⁹ Some uncertainties affect the likelihood of both advantages and disadvantages accruing, such as uncertainty about whether development of the Pebble deposit would occur even in the absence of EPA's action.

EPA also considered that the Agency's role in Section 404(c) is environmental. "Congress granted EPA a broad environmental 'backstop' authority over the Secretary's discharge site selection in subsection 404(c)," and it may do so at any time so long as it makes the required determination under the statute. *Mingo Logan Coal Co. v. U.S. E.P.A.*, 714 F.3d 608, 612-13 (D.C. Cir. 2013). Even after the Corps issues a permit under its broad public interest framework, which considers economic costs and benefits, EPA is granted the ability to act under Section 404(c) because EPA has the "expertise and concentrated concern with environmental matters" to serve as the final arbiter of the significance of impacts to the enumerated resources. See *James City County v. EPA*, 12 F.3d 1330, 1335 (4th Cir. 1993). In *James City County*, for example, the court was presented "with the chore of determining whether the EPA has the authority to justify its [CWA Section 404(c) determination] solely on the basis that it would cause unacceptable adverse effects on the environment." *Id.* at 1335. The court "was persuaded by the structure and language of the Act that it has that authority." *Id.* EPA considered as a factor the extent to which a given advantage or disadvantage aligned with EPA's role under Section 404(c).

Finally, EPA considered that the overall purpose of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters," including the "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water." 33 U.S.C. 1251(a). Thus, EPA considered the extent to which the advantages and disadvantages of its action furthered the Agency's environmental role under Section 404(c) and more broadly the overall purpose of the CWA.

II.c Advantages and Disadvantages

EPA's FD describes in detail the adverse effects that the prohibition and restriction put in place by the FD will prevent. In addition, the document titled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b), which is referenced in Section 4.4 of the FD, discusses in detail other potential advantages and disadvantages of EPA's determination, as well as the uncertainties associated with those advantages and disadvantages. Here, EPA does not repeat every detail but incorporates all of that analysis and highlights the considerations that featured more prominently in the application of the alternative totality-of-the-circumstances approach.

II.c.i Advantages of EPA's Action

One of the most significant advantages of EPA's action is that it will prevent four unacceptable adverse effects to waters within the defined areas.

First, EPA has determined that the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan, resulting in the loss of

approximately 8.5 miles (13.7 km) of anadromous fish streams, will have unacceptable adverse effects on anadromous fishery areas in the NFK watershed. This conclusion is based on the permanent loss of anadromous fish streams,²⁰ which in this case represents a significant loss of anadromous fishery areas, and the permanent loss of ecological subsidies these anadromous fish streams provide to downstream anadromous fish streams, which in this case represents significant damage to these downstream anadromous fishery areas.

Second, in addition to the permanent loss of approximately 8.5 miles (13.7 km) of documented anadromous fish streams, discharges of dredged or fill material at the mine site under the 2020 Mine Plan would result in the permanent loss of approximately 91 miles (147 km) of additional streams that support anadromous fish streams in the SFK and NFK watersheds (USACE 2020a: Section 4.24) (Figure 4-8, Box 4-3). EPA has determined that the permanent loss of these additional streams will have unacceptable adverse effects on anadromous fishery areas in the SFK and NFK watersheds. This conclusion is based on the extensive permanent loss of additional streams that support anadromous fish streams and the corresponding permanent loss of ecological subsidies these additional streams provide to downstream anadromous fish streams, which in this case represent significant damage to these downstream anadromous fishery areas.

Third, in addition to the losses of anadromous fish streams and additional streams that support anadromous fish streams, the discharge of dredged or fill material for the construction and routine operation of the 2020 Mine Plan would also result in the permanent loss of approximately 2,113 acres (8.6 km²) of wetlands and other waters at the mine site; approximately 2,108 acres (8.5 km²) of these losses would occur in the SFK and NFK watersheds. EPA has determined that these permanent losses of wetlands and other waters will have unacceptable adverse effects on anadromous fishery areas in the SFK and NFK watersheds. This conclusion is based on the extensive permanent loss of wetlands and other waters and the corresponding permanent loss of ecological subsidies these wetlands provide to downstream anadromous fish streams, which in this case represent significant damage to these downstream anadromous fishery areas.

Fourth, EPA has determined that the discharge of dredged or fill material associated with the construction and routine operation of the 2020 Mine Plan, resulting in streamflow alterations greater than 20 percent of average monthly streamflow in at least 29 miles (46.7 km) of anadromous fish streams, will have unacceptable adverse effects on anadromous fishery areas in the SFK and NFK watersheds. This conclusion is based on the extent and magnitude of changes to streamflow in anadromous fish streams downstream

²⁰ These permanent losses are the result of streams filled or otherwise eliminated for the construction of various mine components and from streams that would no longer be accessible to fish due to mine site infrastructure (i.e., fragmentation).

of the mine site and associated adverse effects on the extent and quality of anadromous fish habitat, including spawning and rearing habitat, which in this case represent significant damage to these downstream anadromous fishery areas.

EPA's action will prevent these four unacceptable adverse effects from occurring, which is a significant advantage of its action. The anadromous fishery areas that EPA's action will protect are among the least developed and least disturbed (*i.e.*, closest to pristine) habitat of this type in North America (see Section 3.1 of the FD). These fishery areas are inherently valuable and are exactly the types of resources that Section 404(c) was enacted to protect. And, these fishery areas are in the waters that EPA directly regulates with its action, are expected to continue to accrue value into the future for an indeterminate period of time, and have environmental, economic, cultural, recreational, and other values.

Additionally, the anadromous fishery areas that EPA's action will protect are an integral component of and support the Bristol Bay watershed, which is an area of unparalleled ecological value, boasting salmon diversity and productivity unrivaled anywhere in North America. The Bristol Bay watershed provides intact, connected habitats—from headwaters to ocean—that support abundant, genetically diverse wild Pacific salmon populations. These salmon populations, in turn, help to maintain the productivity of the entire ecosystem, including numerous other fish and wildlife species. These salmon populations have supported Alaska Native cultures for thousands of years and continue to support one of the last intact salmon-based cultures in the world. The Bristol Bay watershed's largely undisturbed aquatic habitats contribute to the productive salmon populations that create this globally significant ecological and cultural resource (see Executive Summary of the FD). EPA's action would help protect and preserve the Bristol Bay watershed by directly protecting anadromous fishery areas that are an integral component of the watershed. This is a significant factor in EPA's view, because the Bristol Bay watershed is an unparalleled resource that provides a diversity of values to the environment and human interests. And, like the waters that EPA regulates directly with its action, the Bristol Bay watershed is expected to continue to provide these values into the future for an indeterminate period of time.

The Bristol Bay watershed provides the foundation for world-class fisheries for salmon and other fishes. The Bristol Bay watershed supports the world's largest runs of Sockeye Salmon, producing approximately half of the world's Sockeye Salmon. These Sockeye Salmon represent the most abundant and diverse populations of this species remaining in the United States. Bristol Bay's Chinook Salmon runs are also frequently at or near the world's largest, and the region also supports significant Coho, Chum, and Pink salmon populations. Anadromous fish streams that EPA's action would protect directly support critical life history stages of multiple anadromous fish species, including Coho, Sockeye, Chinook, and Chum salmon. Thus, the extent to which EPA's action will help protect these

ecologically valuable fisheries factored significantly into EPA's decision, particularly given the purpose of Section 404(c).

The Bristol Bay fisheries are also economically important. The total economic value of the Bristol Bay watershed's salmon resources, including subsistence uses, was estimated at more than \$2.2 billion in 2019. The Bristol Bay commercial salmon fishery generates the most significant component of this economic activity, resulting in 15,000 jobs and an economic benefit of \$2.0 billion in 2019, \$990 million of which was in Alaska. Although it is difficult to directly, quantitatively compare the potential forgone economic benefits of the proposed mine against the potential adverse economic impact to fisheries, EPA considered that the commercial salmon fishing industry in Bristol Bay is economically significant, and thus that harm to the fisheries could have significant detrimental economic impacts. EPA also considered that the Bristol Bay commercial salmon fishery is a sustainable economic resource that has existed for generations, and thus that any harm to the fishery now could continue to accrue decades, or even centuries, into the future. The fact that EPA's action will help preserve the sustainable economic value of this fishery is an important factor weighing in favor of the advantages of EPA's action.

EPA also considered how its action might impact subsistence activities. The construction and operation of a mine at the Pebble deposit may affect the subsistence activities of Alaska Natives by affecting access to subsistence harvest areas, as well as the availability, abundance, and quality of subsistence resources, due to impacts on fishing and hunting areas. These subsistence activities have economic, nutritional, social, and cultural significance to many Alaskan Natives of the Bristol Bay region and the social and cultural benefits from these activities are inherently unquantifiable because they are irreplaceable and essential to the quality of life of many Alaskan Natives. EPA considered various ways in which its action could help prevent harm to these subsistence activities, and gave significant weight to the value that would be derived from preventing such effects. EPA also found significant the unique and irreplaceable nature of the subsistence activities and the fact that they have been ingrained in many of the cultures of Bristol Bay Alaska Natives for generations.

In addition to commercial and subsistence fisheries, the Bristol Bay region also supports world-class recreational or sport fisheries. The Bristol Bay watershed has been acclaimed for its sport fisheries, for fishes such as Pacific salmon, Rainbow Trout, Arctic Grayling, Arctic Char, and Dolly Varden, since the 1930s. The uncrowded, near-pristine wilderness setting of the Bristol Bay watershed attracts recreational fishers, and aesthetic qualities are rated by Bristol Bay anglers as most important in selecting fishing locations. The importance of recreational fisheries can be estimated in several ways, including their economic value, the effort expended by recreational fishers, the number of fishes harvested, and the number of fishes caught (*i.e.*, those harvested in addition to those caught and released). See Section 3.1 of the FD for more information. Although it is

difficult to directly, quantitatively compare the forgone economic benefits of the proposed mine against the potential adverse economic impacts to existing recreational fisheries, EPA considered that the recreational and sport fishing industry in Bristol Bay is economically significant, and that harm to the fisheries could have significant detrimental economic impacts. EPA considered the extent to which EPA's action would benefit and help preserve this valuable activity, including both its economic and recreational value.

EPA also considered that the Bristol Bay watershed is used for a variety of other recreational purposes. Many individuals engage in wildlife viewing, hunting, boating, camping, backpacking, beach combing, and picnicking in the Bristol Bay area. Recreational activities in the Bristol Bay watershed are influenced by the unparalleled, largely undisturbed nature of the ecosystem, so changes to the aesthetics of the area or perceptions of its near pristine nature could have detrimental impacts on recreational activities. In addition to the inherent value of these recreational activities to those who engage in them, EPA considered how its action would help preserve the significant economic value of these recreational activities.

In addition, EPA's action would mitigate the risks of potential spills or dam failures. Spill risks over the life of the mining operation include diesel fuel, natural gas, chemical reagents, copper-gold flotation concentrate, tailings, and untreated contact water. A large tailings dam failure could cause extensive harm to downstream ecosystems, and the commercial, recreational, subsistence fish, and other resources they contain. While a total tailings dam failure is a low probability event, the harms that could result in the case of a significant failure event factored in EPA's weighing.

EPA also considered a number of local quality of life advantages that would accrue to people in the Bristol Bay watershed as a result of its action. For example, EPA considered how health and safety of people residing in the area might increase if the 2020 Mine Plan were not implemented. EPA also considered that residents and visitors might receive other benefits as a result of the Agency's action, such as the preservation of the visual continuity of the landscape and the prevention of mine-related lighting and noise. EPA also considered the environmental justice impacts of its determination, such as those benefits that would be experienced by minority and low-income communities. EPA considered how these benefits might be particularly significant to local communities, which are closest to and bear many of the detriments of the 2020 Mine Plan. On the other hand, EPA considered that its action might prevent economic opportunities for some individuals that would be employed as a result of developing the Pebble deposit, and that lost economic opportunities could affect quality of life. EPA factored into its decision how its action would affect quality of life both positively and negatively, particularly for those potentially most affected by development of the Pebble deposit.

EPA also considered the non-use benefits that could accrue to Americans across the country as a result of EPA's action. For example, individuals might place significant value on the fact that the Bristol Bay headwaters would continue to exist in a state undisturbed by major mining activity. EPA considered that even small non-use values held by a large number of households could be substantial in the aggregate. EPA also reviewed relevant literature on similar non-use values held by individuals to help the Agency understand the significance of non-use benefits its action could provide. EPA considered how its action would impact these non-use benefits, and that these non-use benefits are potentially very large.

Finally, EPA considered the advantages its action has to facilitate future planning and to avoid unnecessary expenditures by project proponents and others. By acting now, EPA makes clear its assessment of the effects of certain discharges of dredged or fill material associated with developing the Pebble deposit into certain waters of the United States within the SFK, NFK, and UTC watersheds in light of the significant loss of and damage to important anadromous fishery areas. The federal government, the State of Alaska, federally recognized tribal governments, PLP, and many other interested stakeholders have devoted significant resources over many years of study, engagement, and review. Considering the extensive record, it is not efficient or effective to engage in one or more additional multi-year NEPA or CWA Section 404 processes for future proposals to discharge dredged or fill material associated with developing the Pebble deposit into waters of the United States within the SFK, NFK, or UTC watersheds that will result in adverse effects that EPA has already determined are unacceptable. By acting now, based on an extensive and carefully considered record, EPA promotes regulatory certainty for all stakeholders, including USACE and the regulated community; facilitates planning by proponents; and avoids unnecessary expenditure of additional resources by all interested parties. See 44 Fed. Reg. 58077.²¹ Ultimately, by acting now, EPA also facilitates "comprehensive rather than piecemeal protection" of important aquatic resources, *see id.*, by ensuring the protection of valuable anadromous fishery areas in the SFK, NFK, and UTC watersheds against unacceptable adverse effects from the discharges evaluated in this final determination.

II.c.ii Disadvantages of EPA's Action

The primary disadvantage of EPA's action is its potential to prevent economic activity associated with developing the Pebble deposit from occurring. This disadvantage has the potential to have significant monetary impacts, as the construction, operation, and mineral resources extracted from the 2020 Mine Plan are each expected to account for

²¹ EPA explicitly acknowledged in the preamble to its 1979 CWA Section 404(c) regulations that among other strong reasons to exercise its CWA Section 404(c) authority pre-permit was "eliminating frustrating situations in which a proponent spends time and money developing a project for an inappropriate site" 44 Fed. Reg. 58077 (Oct. 9, 1979).

billions of dollars in economic activity. EPA considered the economic impacts of its action generally, and the forgone economic activity from developing the Pebble deposit that could accrue as a result of its action was a major economic factor.

Construction of a mine at the Pebble deposit would involve construction of a mine site power generation plant, a natural gas pipeline, mineral processing facilities, earthworks for tailings management and other purposes, water treatment facilities, a marine terminal, access roads, and other needed site construction. The construction phase would also entail the purchase of mining and construction equipment. One estimate puts these expenditures at a total of direct capital expenditures of \$4,188.7 million, \$1,304 million of sustaining capital expenditures, and \$1,860.6 million of indirect, owners', and contingency costs. Additionally, the FEIS estimated that annual full-time equivalent employment would be 2,000 during this capital expenditure phase. Because this construction would require the investment of billions of dollars in capital, there could be disadvantages to the companies and communities in which this capital would have been invested if the investment does not take place as a result of EPA's action. EPA considered this potentially lost economic activity as a factor that weighed on the side of the disadvantages of EPA's action.

During the operation of a mine at the Pebble deposit, capital would continue to be invested in equipment and supplies needed to maintain the operation. During the 20-year operating and maintenance phase, one estimate is that the 2020 Mine Plan would have average annual direct operating and maintenance expenditures of \$527.37 million. Additionally, mining activities would support jobs in the United States, including many in the Bristol Bay region. For example, the FEIS suggested that the operation of a mine could support, on average, 850 jobs per year during the operation of the mine. EPA, therefore, considered the extent to which its action could negatively affect economic activity, including employment, associated with operating a mine at the Pebble deposit.

EPA also considered that its action could affect the availability of economically valuable minerals that would be extracted from a mine at the Pebble deposit. The total revenue produced over the lifetime of, for example, the mine proposed in the 2020 Mine Plan, netting out realization charges,²² is estimated to be \$31,733 million. The 2020 Mine Plan is projected to produce copper, gold, molybdenum, silver, and rhenium, with copper and molybdenum projected to be produced in the greatest amounts. Some commenters suggested that the Pebble deposit, if mined according to the 2020 Mine Plan, could be an important source of copper for the U.S. domestic market. If the minerals that would be extracted from a mine at the Pebble deposit were to constitute an important source of copper for the U.S. market, another potential disadvantage is that U.S. processors who

²² Realization charges refer to any costs associated with the shipping of metal concentrate to smelters, and the smelting charges to treat and refine metals.

rely on copper concentrates or U.S. manufacturers who require that refined copper could be detrimentally impacted by EPA's action. Assuming the mine proposed in the 2020 Mine Plan would yield the volume of copper to the U.S. market estimated by project proponents, this could be a significant disadvantage, and it was one which factored into EPA's decision.

Another disadvantage to EPA's action is that it could reduce some economic opportunities for Alaska Natives, Tribes, and Alaska Native Corporations (ANCs). For example, PLP has proposed the Pebble Performance Dividend, in which PLP would "distribute a 3 percent net profits royalty interest in the Pebble Project to adult residents of Bristol Bay villages that have subscribed as participants." The Pebble Performance Dividend was estimated to amount to a total payment over the 24.5-year period of construction and operation of between \$200 million to \$240 million. If PLP does not construct and operate a mine at the Pebble deposit, this benefit would not accrue. In addition to the dividend payment, Alaska Natives, Tribes, and ANCs may be helped by the indirect and induced economic activity occurring as a result the 2020 Mine Plan through employment or income derived from economic activity generated by the mine. If EPA's action causes a reduction in that economic activity, it could be a disadvantage to the Alaska Natives, Tribes, and ANCs that would have benefited from that activity. Thus, EPA considered the disadvantages its action could cause to Alaska Natives, Tribes, and ANCs.

EPA also considered that its action could result in indirect, local disadvantages. For example, some portion of the economic activity generated by a mine at the Pebble deposit would accrue to the local economy. Additionally, this economic activity would be taxed, and thus would produce tax revenue for local and state governments. Specifically, EPA considered that these advantageous economic impacts would accrue at or closer to the Defined Areas and would therefore accrue to communities that may be lacking other economic opportunities of a similar scale. These local economic disadvantages factored into EPA's decision, particularly given the specific geographic nature of its action.

A large portion of the economic activity associated with the 2020 Mine Plan would occur in areas outside the Bristol Bay watershed, including on a nationwide scale. These more geographically distant activities could be economically significant, and as with the local economic activity, nationwide activity would be taxed and thus produce tax revenue for various governmental bodies. EPA considered the potential of its action to have significant economic impacts at this broader geographic scale.

II.d Conclusion

EPA, under its alternative approach, must make a determination under Section 404(c) even where that determination involves tradeoffs of competing advantages and disadvantages. *See White Stallion Energy*, 748 F.3d at 1266 ("All regulations involve tradeoffs, and . . . Congress has assigned EPA, not the courts, to make many discretionary

calls to protect both our country's environment and its productive capacity."). And, where Section 404(c) does not prescribe a specific methodology for balancing these competing considerations, EPA is granted deference in how it conducts the difficult task of weighing these competing interests against each other. *See, e.g., Nat'l Ass'n for Surface Finishing v. E.P.A.*, 795 F.3d 1, 10 (D.C. Cir. 2015) ("The statute does not mandate a particular method of cost-benefit analysis. Therefore, we defer to EPA's methodology as well as its ultimate balancing decisions."); *Lignite Energy Council v. U.S. E.P.A.*, 198 F.3d 930, 933 (D.C. Cir. 1999) ("Because section 111 does not set forth the weight that should be assigned to each of these factors, we have granted the agency a great degree of discretion in balancing them.").

In the event that consideration of costs is required, applying its totality-of-the-circumstances alternative approach, EPA has determined that the advantages of its determination are significant and numerous. EPA's action will prevent effects to fishery areas that EPA has determined are unacceptably adverse. The aquatic resources that EPA's action will protect are an integral component of the Bristol Bay watershed—an irreplaceable ecosystem unlike any other in the nation. Thus, EPA's action helps to preserve a salmon-based ecosystem and culture that have existed in this watershed and region for generations. By helping preserve such an ecosystem, EPA's action also helps provide significant benefits to, among other things, subsistence, culture, recreation, industry, and other human interests that depend on this ecosystem continuing to thrive. Given the importance of this ecosystem, its uniqueness and irreplaceability, its ecological value, its ability to sustain longstanding industries such as fishing and tourism, and its importance to ways of life for generations past and to come, EPA accorded significant weight to these advantages.

These advantages align closely with the text, structure, and purpose of CWA Section 404(c). Specifically, these advantages are related to the fishery areas that EPA's action will protect from unacceptable adverse effects, the fishes that spawn and rear there, the broader ecosystem to which those fishes contribute, and the people that depend on those fishes and ecosystem economically, culturally, and otherwise. The advantages also relate more broadly to the protection of environmental resources, which is EPA's role under Section 404(c) and is in line with the purpose of the CWA. Finally, some of the most important advantages accrue directly in or near the waters directly affected by EPA's action, while most of the other advantages accrue in nearby areas of the Bristol Bay region.

EPA has also determined that there are significant potential disadvantages from its action. The main disadvantages of its action are that some economic activities related to developing the Pebble deposit, estimated to be valued in the billions of dollars, may not occur. These economic activities would have contributed to the local economy, although a large portion of the economic benefits were expected to accrue nationally. Thousands of

individuals might have been employed as part of this economic activity, and thus they may be disadvantaged if it does not occur as a result of EPA's action. And, valuable minerals would have been extracted as a result of the mining, if it were allowed to proceed.

Section 404(c) does not expressly require consideration of such disadvantages, but, as explained previously, if EPA's determination of *unacceptable* adverse effects is interpreted to require consideration of such disadvantages, EPA has done so here. Additionally, while much of the economic activity from the project would be expected to accrue on a nationwide scale, there are some disadvantages to EPA's action that would accrue at or near the waters directly affected by EPA's action. Thus, EPA recognized that the disadvantages of its action relate in part to the text of Section 404(c) and the specific geographic area it is regulating.

Under its alternative basis EPA weighed these advantages and disadvantages and found that both were significant. However, as stated above, EPA must ultimately make a determination even where factors weigh on both sides. Here, one factor that weighed particularly heavily in favor of EPA taking action under Section 404(c) was the incredible value of the Bristol Bay watershed, and the fact that EPA's action would help preserve its unique ecological, economic, cultural, recreational, and other values. On the other side, EPA recognized the immense potential economic, employment, and other values associated with developing the Pebble deposit, and the fact that EPA's action could prevent that development. Ultimately, the advantages associated with taking EPA's action were enormously diverse, numerous, unique, valuable, long-lasting, and aligned with the purposes of Section 404(c) even when weighed against the substantial economic disadvantages of EPA's action. EPA therefore finds that, when considering the totality of both advantages and disadvantages of its action, discharges of dredged or fill material associated with developing the Pebble deposit described in the FD will result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

See EPA's response to comment 6.F.3.

6.F.8 Alaska Department of Environmental Conservation (Doc. #0814, p. 34)

Region 10 fails to adequately consider costs and benefits as a basis for its proposed determination.

Region 10 solicits comments on how it considered costs in reaching its proposed determination, including whether it considered all appropriate costs. [PD at 7-2.] On this point, Region 10 is not even close.

The assessment of the costs associated with Region 10's proposal to prohibit and restrict activities in all WOTUS associated with the Pebble deposit is contained wholly within a document that is referred to in

the proposed veto (“EPA Costs Analysis”), [PD at 6-25.] but which is found only among the documents in the docket at www.regulations.gov supporting the proposed veto. [PD at 6-25; EPA Cost Analysis.] That is the first indication of how little Region 10 values cost issues in the present proceeding.

The EPA Cost Analysis starts by flatly stating that the agency does not believe it is required to consider costs at all (including benefits of a foregone project) in making its § 404(c) decision. [EPA Cost Analysis, at 4.] Nevertheless, EPA in the balance of the EPA Cost Analysis does purport to provide an analysis of costs and benefits of the proposed veto.

Region 10 is incorrect as a matter of law that costs do not need to be considered. Moreover, the limited analysis it does provide is flawed because (among other reasons) it does not consider adverse impacts to the State of Alaska that would result from the proposed veto, in terms of significant lost revenue resulting from foreclosing any development of the massive Pebble deposit.

EPA Response

Several commenters addressed whether EPA is required to go beyond its evaluation of the factors listed in Section 404(c) and consider non-environmental and economic costs of its determination. Some commenters argued that Section 404(c) requires EPA to weigh the costs of its determination, such as the economic value of the forgone mining project, against the benefits of its determination, such as the environmental harm avoided. Other commenters urged that Section 404(c) does not require EPA to incorporate costs into its determination, and that the statutory inquiry must be based only on the magnitude of harmful effects to the four listed resources— municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. EPA agrees with the commenters stating that EPA is not required to weigh the non-environmental costs of its action under Section 404(c), which has been EPA’s longstanding position. See 44 Fed. Reg. 57,076, at 58,078 (Oct. 9, 1979) (“In EPA’s view, section 404(c) does not require a balancing of environmental benefits against non-environmental costs such as the benefits of the foregone [*sic*] project.”). The plain text of Section 404(c) does not require such consideration of costs, and the statutory context reinforces that conclusion. EPA’s reasons for interpreting Section 404(c) to not require consideration of costs are discussed below in greater depth.²³

²³ EPA has determined in Section 4.4 of the FD, as an alternative basis for its action, after consideration of the totality of the circumstances including quantitative and qualitative non-environmental costs and benefits, that the discharges of dredged or fill material evaluated in the final determination will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. To the extent that EPA’s alternative basis applies, these conclusions and rationale directly support the prohibition described in Section 5.1 and the restriction described in Section 5.2. EPA has documented the potential advantages and disadvantages of its action in the document titled *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Final Determination for the Pebble Deposit Area, Southwest Alaska* (EPA 2023b).

I. Legal Standard

The issue of whether EPA must consider non-environmental costs when acting pursuant to CWA Section 404(c) is a question of statutory interpretation. *See Michigan v. E.P.A.*, 576 U.S. 743, 751 (2015). This interpretation is informed by relevant court decisions that have addressed EPA's and other agencies' consideration of costs in other contexts.

Notably, the U.S. Supreme Court in *Whitman v. Am. Trucking Associations*, 531 U.S. 457 (2001), interpreted Clean Air Act (CAA) Section 109(b)(1) to preclude EPA from considering costs when setting standards under that section. The Court addressed Section 109(b)(1) of the CAA, which instructed EPA to set standards "the attainment and maintenance of which . . . are requisite to protect the public health" with "an adequate margin of safety." The Court reasoned that the "most natural" reading of this language was to preclude EPA from considering the costs of achieving the standard. *Am. Trucking*, 531 U.S. at 465.

More recently, the Supreme Court in *Michigan* required EPA to consider costs when deciding whether it is "appropriate and necessary" under CAA Section 7412(n)(1)(A) to regulate hazardous air pollutants from certain stationary sources. 576 U.S. at 751. The Court relied on the "capaciousness" of the statutory language "appropriate and necessary," reasoning that such language "naturally and traditionally includes consideration of all relevant factors," including cost. *Michigan*, 576 U.S. at 752. This capaciousness was relevant in the context of Section 7412(n)(1)(A) because that section directs EPA to determine "whether to regulate," which is a setting where "[a]gencies have long treated cost as a centrally relevant factor." *Id.* at 753 (emphasis added). The Court also found that the specific statutory context was relevant in that it "reinforces the relevance of cost" as a factor to consider. *Id.* at 753.

Michigan also held that agencies may continue to interpret statutes to preclude the consideration of costs of their action. The Court recognized the continued relevance of the holding of *American Trucking*, which stands for the principle that "where the [statute] expressly directs EPA to regulate on the basis of a factor that on its face does not include cost, the [statute] normally should not be read as implicitly allowing the Agency to consider cost anyway." *Id.* at 752. Additionally, the *Michigan* decision was clear that the inquiry is dependent on statutory context, so much so that the Court noted that "[t]here are undoubtedly settings in which the phrase 'appropriate and necessary' does not encompass cost." *Id.*

Since *Michigan*, courts have continued to recognize that the plain meaning of statutory language may preclude consideration of costs. In one decision, the D.C. Circuit upheld EPA's decision to forgo consideration of costs when promulgating criteria distinguishing between "sanitary landfills" and "open dumps" under the Resource Conservation and Recovery Act (RCRA). *Util. Solid Waste Activities Grp. v. Env't Prot. Agency*, 901 F.3d 414,

449 (D.C. Cir. 2018). The court discussed *Michigan* and found that the RCRA statutory provision at issue contained no explicit mention of costs, in stark contrast to other RCRA sections where Congress expressly required costs to be considered. *Id.* The court found that the relevant RCRA text of “reasonable probability of adverse effects on health or the environment” was not “flexible language such as ‘appropriate and necessary’ that might allow the EPA to consider costs in its rulemaking.” *Id.* Similarly, the Ninth Circuit interpreted the Toxic Substance Control Act’s (TSCA’s) requirement that the EPA identify “any condition” of lead in dust, paint, and soil that would result in “adverse human health effects as established by the administrator under [TSCA IV]” to preclude consideration of costs. *A Cmty. Voice v. U.S. Env’t Prot. Agency*, 997 F.3d 983, 986 (9th Cir. 2021). Both decisions cited *American Trucking* and acknowledged its principle that statutory text may preclude consideration of costs. *Util. Solid Waste Activities Grp.*, 901 F.3d at 448 (“Simply put, ‘to prevail in their present challenge, [Industry] must show a textual commitment of authority to the EPA to consider costs.’”); *A Cmty. Voice*, 997 F.3d at 992 (“[I]f Congress wanted to grant the EPA the discretion to determine what it believes should be the allowable level of adverse health risks, Congress would have made that clear, and would not have buried it in a vague delegation of regulatory authority.”).

II. Analysis

II.a Statutory Text of Section 404(c)

Michigan held that the statutory text “appropriate and necessary” in the context of CAA Section 7412(n)(1)(A) required consideration of cost. The Court reasoned that “‘appropriate’ is the classic broad and all-encompassing term that naturally and traditionally includes consideration of all the relevant factors.” *Michigan*, 576 U.S. at 752 (additional internal quotation marks omitted). Therefore, consideration of costs is required under that “capacious[]” text because it would not be “‘appropriate,’ to impose billions of dollars in economic costs in return for a few dollars in health or environmental benefits” nor would a regulation be “‘appropriate’ if it does significantly more harm than good.” *Id.* Further, CAA Section 7412(n)(1)(A) directs EPA to determine whether “regulation is appropriate and necessary,” meaning it addresses the issue of “whether to regulate.” *Id.* at 752–53 (emphasis in original). In that context, “[a]gencies have long treated cost as a centrally relevant factor.” *Id.*

The language Congress used in CWA Section 404(c) is unlike the language at issue in the *Michigan* case because that text—“unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas”—is not capacious language nor does it address the issue of

whether to regulate.²⁴ Instead, the language of Section 404(c) is narrowly focused on impacts to specific resources, like other statutes that have been interpreted to preclude consideration of costs. *See, e.g., Am. Trucking Associations*, 531 U.S. at 465; *Util. Solid Waste Activities Grp.*, 901 F.3d at 449; *A Cmty. Voice*, 997 F.3d at 986.

Accordingly, EPA has long interpreted the text of Section 404(c) to refer to the severity or significance of adverse effects on the enumerated resources, rather than requiring balancing of various adverse and non-adverse factors that are unconnected to the statutory text.²⁵ Under EPA's interpretation, the line of what constitutes "unacceptable" adverse effects may be drawn by considering the scale or nature of the environmental adverse effects themselves; no comparison to non-environmental, non-adverse impacts is necessary to determine that adverse effects to one or more of the listed resources are so significant as to be "unacceptable." For example, a discharge that would result in the net loss of a single organism may not be an unacceptable adverse effect, while a discharge that would destroy many miles of important habitat could constitute an unacceptable adverse effect.

More concretely, here EPA considered that adverse effects were "unacceptable" due to environmental factors such as the "the large amount of permanent loss of anadromous fish habitat," the "particular importance of the permanently lost habitat" for certain fish species, the "degradation of additional downstream spawning and rearing habitat" for certain fish species, and the "resulting erosion of habitat complexity and biocomplexity within the NFK watershed, both of which are key to the abundance and stability of salmon populations within this watershed." *See, e.g.,* Section 4.2.1.5.1 of the FD. Similarly, in a prior Section 404(c) action, "EPA concluded that many of the direct adverse effects on wildlife within the disposal area are 'unacceptable' because Pigeonroost Branch and Oldhouse Branch are 'some of the last remaining streams within the Headwaters Spruce Fork sub-watershed and the larger Coal River sub-basin that represent 'least-disturbed' conditions and habitat that is essential for many species in the watershed.'" *Mingo Logan Coal Co. v. Env't Prot. Agency*, 829 F.3d 710, 729 (D.C. Cir. 2016). In Section 404(c) actions such as these, EPA over a period of 50 years has consistently determined which adverse effects are "unacceptable" based on the significance of environmental harm, and without balancing non-environmental costs of its action.

²⁴ The decision of *whether* to initiate a Section 404(c) process is a discretionary determination by the Administrator that is separate from the decision of whether the statutory requirements of Section 404(c) are met. *See Trout Unlimited v. Pirzadeh*, 1 F.4th 738, 752 (9th Cir. 2021).

²⁵ *See* 44 Fed. Reg 57076, at 58078 (Oct. 9, 1979) ("The term 'unacceptable' in EPA's view refers to the significance of the adverse effect—e.g., is it a large impact and is it one that the aquatic and wetland ecosystem cannot afford."); *id.* ("In EPA's view, section 404(c) does not require a balancing of environmental benefits against non-environmental costs such as the benefits of the foregone [*sic*] project."); 40 CFR § 231.2(e) ("Unacceptable adverse effect means impact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies (including surface or ground water) or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas").

Commenters arguing that EPA must consider costs rely entirely on the word “unacceptable,” which they argue acts similarly to the word “appropriate” at issue in *Michigan*.²⁶ Specifically, they interpret “unacceptable” to have a broad balancing connotation, meaning that factors such as the forgone economic activity from EPA’s action should be weighed against environmental harm to determine whether adverse effects are “unacceptable” or not. Under this interpretation, severe environmental impacts might not be “unacceptable” if they are outweighed by other factors such as significant economic activity. However, as explained below, such a reading of “unacceptable” is not supported by the statute.

II.a.i Interpretation of Entirety of Phrase

Reading the word “unacceptable” in the context of the entirety of Section 404(c) supports EPA’s understanding that “unacceptable” should be interpreted to signify the severity of adverse environmental effects rather than including the balancing of non-environmental advantages and disadvantages of EPA’s action. Unlike the statutory language at issue in *Michigan*, Section 404(c) as whole does not invite inquiry into a broad range of unenumerated considerations. On its face, the relevant Section 404(c) statutory language—“unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas”—is specific language that focuses narrowly on environmental impacts. This targeted language provides clear direction to EPA as to the specific inquiry that Congress intended the Agency to conduct when making determinations under Section 404(c). Read literally and most naturally, the statute directs EPA to consider the severity of harmful consequences on the four resources enumerated in the statute. EPA rejects commenters’ urging to replace that textually-grounded inquiry with a balancing analysis that is less connected to the specific statutory text.

Each individual component of the relevant statutory language reinforces EPA’s text-based interpretation. For example, Section 404(c) calls on EPA to analyze the “adverse effects” of a discharge on specified resources. In other contexts, statutory language calling for examination of “adverse effects” on other specified resources—*e.g.*, human health, the environment—has been interpreted to preclude consideration of costs of agency actions. *Util. Solid Waste Activities Grp.*, 901 F.3d at 449 (RCRA text of “reasonable probability of adverse effects on health or the environment” did not require consideration of costs); *A Cmty. Voice*, 997 F.3d at 992 (TSCA requirement that EPA identify “any condition” of lead in dust, paint, and soil that would result in “adverse human health effects as established

²⁶ EPA also acknowledges that in a dissenting opinion in a case before the D.C. Circuit, then-judge Kavanaugh opined that the word “unacceptable” in Section 404(c) is similar to “appropriate” in *Michigan* in that they are both “commonly understood to necessitate a balancing of costs and benefits.” *Mingo Logan Coal Co. v. Env’t Prot. Agency*, 829 F.3d 710, 734 (D.C. Cir. 2016) (Kavanaugh, J., dissenting). EPA discusses this decision further below.

by the administrator under [TSCA IV]” does not require consideration of costs). As in those cases, “adverse effects” in Section 404(c) is a phrase that “directs EPA to regulate on the basis of a factor that on its face does not include cost.” *Michigan*, 576 U.S. at 752. More specifically, EPA is directed here to regulate on the basis of the severity of environmental impacts.

The use of the word “adverse” itself is also instructive, as it indicates the types of effects EPA is required to consider. Congress directed EPA to consider only “adverse” effects on the enumerated resources, such as harm to fishery areas, that would result from a discharge of dredged or fill material. Because the economic activity associated with a discharge of dredged or fill material is a *non-adverse* effect of that discharge, EPA’s consideration of such costs would conflict with the inclusion of the word “adverse” in the statutory text.

Congress further defined EPA’s Section 404(c) inquiry by identifying the particular resources EPA is to consider—municipal water supplies, shellfish beds and fishery areas (including breeding and spawning grounds), wildlife, and recreational areas. EPA’s interpretation is consistent with this language because the adverse effects it considers are all ones that would directly impact (*i.e.*, are “on”) these specific enumerated resources.²⁷ Considering the costs of Section 404(c) determinations, on the other hand, would require EPA to consider effects that are unconnected to the enumerated resources themselves. For example, effects on employment rates or mineral commodity prices have no connection to and thus are not “on” fishery areas or any other of the enumerated resources. Thus, EPA’s interpretation that consideration of cost is not required is the best reading of the statute given Congress’s exclusive reference to the listed resources.

²⁷ EPA notes that the Section 404(b)(1) Guidelines prohibit a discharge of dredged or fill material if there is a “practicable alternative to the proposed discharge” and under the regulations 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 purposes.” 40 CFR 230.10(a). EPA acknowledges that its definition of “unacceptable adverse effects” in the Section 404(c) regulations involves consideration of relevant portions of the Section 404(b)(1) Guidelines and that the availability of a practicable alternative can be considered as part of a Section 404(c) action. 40 CFR 231.2(e); *see Bersani v. U.S. E.P.A.*, 674 F. Supp. 405, 415 (N.D.N.Y. 1987), *aff’d*, 850 F.2d 36 (2d Cir. 1988). EPA expressly addressed this issue in its 1979 preamble regarding its position on consideration of costs. EPA stated that, “the Administrator can take into account the fact that the alternative sites or methods are or are not available, so that the *loss of resources* is avoidable or unavoidable” and “even when there is no alternative available, and ‘vetoing’ the site means stopping a project entirely, the *loss of the 404(c) resources* may still be so great as to be ‘unacceptable.’” 44 Fed. Reg. 57,076, at 58,078 (Oct. 9, 1979) (emphasis added). Additionally, consideration of alternative sites is directly derived from the text of Section 403(c) of the CWA, which serves as the basis for Section 404(b)(1)’s Guidelines, and which EPA incorporates into its Section 404(c) analysis through 40 CFR 231.2(e). *See* 33 U.S.C. § 1343(c)(1)(F) (“The Administrator shall . . . promulgate guidelines for determining the degradation of the waters of the territorial seas, the contiguous zone, and the oceans, which shall include . . . other possible locations and methods of disposal or recycling of pollutants including land-based alternatives.”).

Finally, the legislative history supports EPA's interpretation that the Agency's inquiry under Section 404(c) is based only on the adverse environmental effects on the specified resources rather than on balancing unenumerated costs and benefits. For example, the Conference Committee explained that EPA was given a "veto" authority under Section 404(c) because the United States Army Corps of Engineers ("Corps") should not be allowed "to make the determination as to the *environmental implications* of either the site to be selected or the specific spoil to be disposed of in a site." *See* Committee on Public Works, 93d Congress, 1st Session, a Legislative History of the Water Pollution Control Act Amendments of 1972, Volume 1 at 177 (emphasis added). Thus, this legislative history indicates that the contemplated role of Section 404(c) was limited to consideration of enumerated "environmental implications," not other broader implications such as those that commenters urged EPA to include in its analysis.

II.a.ii Interpretation of "Unacceptable" Adverse Effects

As noted above, commenters arguing that EPA must consider costs rely entirely on the word "unacceptable," which they argue acts similarly to the word "appropriate" at issue in *Michigan*. Even ignoring the rest of the Section 404(c) (which, as explained above, does not support an interpretation requiring consideration of costs), the word "unacceptable" itself does not support commenters' interpretation here.

As discussed above, commenters' suggested interpretation is not necessary to give "unacceptable" its most natural meaning. EPA for decades has interpreted "unacceptable" to refer to the severity of environmental effects, and during that time the Agency has successfully determined whether adverse effects are "unacceptable" or not based on that environmental inquiry. EPA reasonably rejects commenters' suggestion to replace that workable, technical standard that draws on EPA's environmental expertise with a standard based on broader considerations that are unconnected to the statutory text.

Additionally, the word "unacceptable" does not have the same role or meaning as the word "appropriate" in *Michigan* that the Supreme Court interpreted to include consideration of costs. The Court interpreted the word "appropriate" in *Michigan* to require a balancing of costs and benefits in the specific context of deciding "whether to regulate." *Michigan*, 576 U.S. at 753. Here, by contrast, EPA has already decided to initiate the Section 404(c) regulatory process and the Agency is at the stage of interpreting "unacceptable" in the context of whether impacts meet the statutory threshold. In similar contexts where an agency is asked to decide whether impacts on the environment or public health meet a statutory threshold, courts have interpreted statutes to preclude balancing of unenumerated costs against the adverse effects. *See, e.g., Am. Trucking*, 531 U.S. at 465; *Util. Solid Waste Activities Grp.*, 901 F.3d at 449; *A Cmty. Voice*, 997 F.3d at 986.

Further, the word "unacceptable" in the context of Section 404(c) is appropriately read as *limiting* EPA's authority to those exceptional cases where adverse effects are the greatest,

not as requiring a balancing of adverse effects against other unenumerated factors. Almost all discharges of dredged or fill material are likely to have some “adverse effect” on one or more of the enumerated resources, so use of a word like “unacceptable” in drafting Section 404(c) was necessary to prevent Section 404(c) from applying to all or most potential discharges. The word “unacceptable” serves this limiting role without needing to encompass the balancing of non-environmental costs, as evidenced by the fact that EPA has judiciously applied Section 404(c) based only on its environmental inquiry for decades.²⁸

Finally, EPA explained in its 1979 preamble to the final rule that the legislative history indicates that “adverse effects” rather than “unacceptable” was the focus for the Section 404(c) inquiry. Specifically, the legislative history summarized the Section 404(c) inquiry as simply whether there are “adverse effects” (omitting “unacceptable”) on the four listed resources. 44 Fed. Reg. at 58,078. This supports the view that Congress sought to focus the inquiry on the “adverse effects” themselves and their severity, not on whether those adverse effects are “unacceptable” when weighed against the costs of EPA taking action.

II.b Statutory Context

Michigan also explains that statutory context is important to this analysis, so much so that even the capacious language “appropriate and necessary” might not require consideration of cost in some contexts. *Michigan*, 576 U.S. at 752 (“There are undoubtedly settings in which the phrase ‘appropriate and necessary’ does not encompass cost.”). The statutory context of Section 404(c) further reinforces the conclusion that requiring consideration of costs is not the best interpretation of the statutory language.

II.b.i Objective of the CWA and Purpose of Section 404(c)

Replacing the Congressionally mandated statutory inquiry with a broad weighing of costs and benefits fails to align with the objective of the CWA as a whole and the purpose of Section 404(c) within the statutory scheme. The purpose of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters,” including the “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water.” 33 U.S.C. § 1251(a). There is no equivalent statutory language calling on EPA to encourage or evaluate economic activity as a goal of the CWA.

Within the already protective CWA, Section 404(c) has a specific focus on environmental protection.²⁹ EPA is granted the authority to limit the use of any defined areas as a

²⁸ EPA has completed actions under Section 404(c) only 13 other times since 1972.

²⁹ See, e.g., *Mingo Logan Coal Co. v. U.S. E.P.A.*, 714 F.3d 608, 612 (D.C. Cir. 2013) (“Congress granted EPA a broad environmental ‘backstop’ authority over the Secretary’s discharge site selection in subsection 404(c)”).

disposal site based only on “unacceptable adverse effects” to environmental resources. *See* 40 CFR 231.1(a). And EPA may exercise this authority, based only on effects to environmental resources, to trump the Corps’ determination based on a broader range of considerations.³⁰ This context reinforces that EPA’s role under Section 404(c) is to conduct a review based on environmental factors only.

Commenters’ suggested interpretation to consider costs cuts against the purpose of Section 404(c), as it would allow Section 404(c) to serve its environmentally protective role only when protecting those environmental resources is not too costly in non-environmental terms. In contrast, EPA’s interpretation is consistent with the broader environmental purpose of the CWA, and specifically Section 404(c).

II.b.ii Section 404(b)(2)

EPA’s interpretation that it is not required to consider costs under Section 404(c) gives full effect to the text of Section 404(b)(2) that explicitly provides for consideration of cost. Under Section 404(a), the Corps is authorized to issue permits to discharge dredged or fill material into waters of the United States at specified disposal sites. The Corps may only specify a disposal site through a permit if it meets the Section 404(b)(1) Guidelines. Under Section 404(b)(2), the Corps may issue a permit even if it does not meet the Section 404(b)(1) Guidelines based on the “economic impact of the site on navigation and anchorage.” 33 U.S.C. § 1344(b)(2). Most importantly, the Corps’ authority under Section 404(b)(2) is “subject to” EPA’s Section 404(c) authority, meaning that EPA retains its authority to exercise Section 404(c) to prohibit the specification or deny or restrict the use for specification of any defined area that the Corps may specify as a disposal site solely based on economic impact on navigation and anchorage. Thus, even where Congress expressly waived Section 404(b)(1) Guidelines requirements due to economic implications for navigation and anchorage for the Corps, Congress was unwilling to allow “economic implications for navigation and anchorage” to override EPA’s ability to exercise Section 404(c).

The statute should be construed in such a way as to give effect to all of its parts. *See Corley v. United States*, 556 U.S. 303, 314 (2009) (applying “one of the most basic interpretative canons, that a statute should be construed so that effect is given to all its provisions, so that no part will be inoperative or superfluous, void or insignificant”) (brackets and

(emphasis added); *James City Cnty., Va. v. E.P.A.*, 12 F.3d 1330, 1336 (4th Cir. 1993) (“Ultimately, however, recognizing the EPA’s expertise and concentrated concern with *environmental matters*, . . . Its authority to *veto to protect the environment* is practically unadorned.”) (emphasis added); *id.* (“This broad grant of power to the EPA *focuses only on the agency’s assigned function of assuring pure water* and is consistent with the missions assigned to it throughout the Clean Water Act.”) (emphasis added); *see also* History of the Water Pollution Control Act Amendments of 1972, Volume 1 at 177 (Under Section 404(c), EPA evaluates the “*environmental implications*” of a discharge).

³⁰ EPA is also authorized to exercise this authority in the absence of any action by the Corps.

quotation marks omitted). EPA's interpretation gives full effect to the plain language of Section 404(b)(2), which is explicitly subject to Section 404(c).

II.b.iii Other Express Cost Consideration in Section 404

Section 404 of the CWA provides for consideration of cost in other provisions, which is instructive in light of the way Congress tailored the types of costs most relevant to actions taken under Section 404. Section 404(b)(2), as noted above, allows the Corps to specify a disposal site that would have otherwise been prohibited for noncompliance with the Section 404(b)(1) Guidelines if it determines that specification is necessary because of "the economic impact of the site on navigation and anchorage." It therefore limits the consideration of costs to direct economic values of the waters through their value for navigation and anchorage. Similarly, Congress required the Section 404(b)(1) Guidelines, which constitute the substantive environmental criteria used in evaluating activities regulated under Section 404, to be based on the Ocean Dumping Criteria in Section 403(c), which in turn require consideration of "the effect of disposal, of pollutants on esthetic, recreation, and economic values." 33 U.S.C. 1343(c). Through these provisions, Congress indicated that the types of costs the agencies should consider under Section 404 relate directly to the economic value of the waters themselves. Congress's tailored consideration of cost in these provisions demonstrates how Congress communicated its intent to require consideration of cost under Section 404. By contrast, the language of Section 404(c) does not evidence the same intent.

Moreover, interpreting Section 404(c) to require consideration of cost would make little sense in this context. The Corps has relatively broad discretion under its permitting authority, while EPA, with its "expertise and concentrated concern with environmental matters," is more textually constrained to environmental consideration under Section 404(c). *See James City County*, 12 F.3d at 1335. Some commenters' suggestion that EPA conduct a sweepingly broad analysis of costs under Section 404(c) flips this commonsense understanding on its head, requiring EPA to consider broad non-environmental costs under Section 404(c), while the Corps remains constrained by the limitations in Section 404(b) described above.

II.c Consistency with Prior Interpretations

II.c.i Consistent, Longstanding Interpretations

EPA's interpretation of Section 404(c) to not require consideration of cost would also be consistent with EPA's longstanding position, as well as with relevant court decisions.

In promulgating regulations interpreting Section 404(c) in 1979, several commenters argued that Section 404(c) determinations should be "based on a cost/benefit analysis which takes into account the benefits of the proposed project." EPA disagreed with these commenters, stating:

In EPA's view, section 404(c) does not require a balancing of environmental benefits against non-environmental costs such as the benefits of the foregone [*sic*] project. This view is based on the language of 404(c) which refers only to environmental factors. The term "unacceptable" in EPA's view refers to the significance of the adverse effects—e.g. is it a large impact and is it one that the aquatic and wetland ecosystem cannot afford. When Congress intended EPA to consider costs under the Clean Water Act, it said so (see, for example, section 304(b)(2)(B)). It is significant that in paraphrasing the criteria for 404(c), the Conference Report merely referred to activities which will "adversely affect" the listed resources. (Leg. Hist., Vol. 1, p. 325.) The remarks of Senator Muskie during the debate on the Conference Report also confirm that the criteria for exercise of 404(c) were environmental. In short, there is no requirement in 404(c) that a cost/benefit analysis be performed, and there is no suggestion in the legislative history that the word "unacceptable" implies such a balancing.

44 Fed. Reg 57076, at 58078 (Oct. 9, 1979). This interpretation was codified in EPA's regulations, which have remained consistent on this point for decades. See 40 CFR 231.2(e). Specifically, the definition of "unacceptable adverse effects" refers only to the significance of the adverse environmental effects and does not refer to consideration of non-environmental disadvantages of EPA's determination that are not connected to the enumerated resources. *Id.*

Additionally, during the decades in which EPA and the regulated community have operated under the understanding that Section 404(c) does not require consideration of costs, courts have affirmed EPA's interpretation. See *James City County*, 12 F.3d at 1336 ("[W]e think [EPA's] veto based solely on environmental harms was proper."); *Creppel v. U.S. Army Corps of Engineers*, No. CIV.A. 77-25, 1988 WL 70103, at *6 (E.D. La. June 29, 1988) ("The plain language of section 404(c) does *not* require a balancing of environmental concerns against 'the public interest.'") (emphasis in original).

II.c.ii Mingo Logan

The issue of consideration of certain costs under Section 404(c) was also raised in *Mingo Logan Coal Co. v. Env't Prot. Agency*, 829 F.3d 710 (D.C. Cir. 2016). Mingo Logan argued that EPA's withdrawal of specification for a previously issued permit "failed to consider an important aspect of the problem" because it did not consider the costs incurred in reliance on the permit and compliance history. *Id.* at 719.

In deciding Mingo Logan's argument, the D.C. Circuit majority did not squarely address the issue addressed by EPA here. For example, the court decided the costs issue on the basis that Mingo Logan had waived its cost consideration arguments by not presenting relevant information to EPA during the Section 404(c) process. *Id.* at 723. And, the court exclusively focused its statements regarding consideration of costs under Section 404(c) on whether reliance costs were relevant to reasoned decision-making under the

Administrative Procedure Act (APA) in a post-permit Section 404(c) action, which is not directly relevant to the issue addressed here.

In his *Mingo Logan* dissent, then-Judge Kavanaugh more directly addressed the issue here by expressing the view that EPA must consider costs under Section 404(c) “before it vetoes or revokes” a 404 permit. *Mingo Logan* at 734 (Kavanaugh, J., dissenting). However, EPA believes the reasoning of that dissenting opinion is inconsistent with the text and purpose of Section 404(c).

In *Mingo Logan*, then-Judge Kavanaugh acknowledged that “Congress may bar an agency from considering the costs of certain actions,” but opined that EPA must consider the cost to humans before exercising its Section 404(c) authority after a CWA Section 404 permit has been issued and relied upon. *Mingo Logan*, 829 F.3d at 733. Opining more generally, then-Judge Kavanaugh stated that EPA’s reliance on *American Trucking* to avoid consideration of the costs when acting under Section 404(c) was misplaced. *Mingo Logan*, 829 F.3d at 735. More specifically, the dissent opined that the “word unacceptable is capacious and necessarily encompasses consideration of costs,” and thus is “[l]ike the word ‘appropriate’ at issue in *Michigan v. EPA*.” *Id.* at 734 (internal quotation marks omitted). As explained above, however, “unacceptable” is not capacious when viewed as part of the entirety of the statutory inquiry. Therefore, EPA disagrees with the dissent that, in this context, “unacceptable” serves a role similar to “appropriate” in the *Michigan* decision. Instead, the Section 404(c) language, when read as a whole, more resembles the circumstances in *American Trucking* because of its specificity and clear direction to EPA.

The dissent further differentiated Section 404(c) from the statute in *American Trucking* because that statute “specifically focused on ‘public health’ and ‘safety’—two factors on the other side of the balance from costs.” *Mingo Logan*, 829 F.3d at 735 (quoting *Am. Trucking*, 531 U.S. at 468-69)). As with *American Trucking*, Section 404(c) specifically focuses on factors on the other side of the balance from costs, namely the adverse effects to four resources that would be harmed by a potential discharge. Further, the factors that then-Judge Kavanaugh found essential to the *American Trucking* opinion, “public health” and “safety,” can also be present under Section 404(c) because EPA’s analysis under Section 404(c) can involve some consideration of human health where it is directed to consider the significance of, for example, “adverse effects on municipal water supplies.”³¹ The dissent also acknowledged that *American Trucking* found it “implausible” that Congress, through the modest words “requisite” and “adequate margin,” granted EPA the significant power “to determine whether implementation costs should moderate national air quality standards.” *Id.* at 735. Similarly, it is “implausible” here that, through adding

³¹ See 44 Fed. Reg. 57,076, at 58,078 (Oct. 9, 1979) (“Because of the specific language of the statute, EPA cannot consider human health under 404(c) except to the extent that it is implied by the factors listed. For example, municipal water supplies relate directly to human-health; some adverse effects on fish and shellfish might also be injurious to human health.”).

the modifier of “unacceptable” to “adverse effects,” Congress granted EPA the significant power to determine whether non-environmental costs such as the forgone economic activity should override significant environmental damage to specific resources it directed EPA to protect.

III. Conclusion

EPA’s longstanding position is that Section 404(c) does not require the Agency to consider non-environmental costs. EPA has received comments that the Agency must consider such costs under Section 404(c) in making its determination. For the reasons stated above, EPA disagrees with these comments and continues to interpret Section 404(c) to not require consideration of costs.

See EPA’s response to comment 6.F.3 regarding impacts to the State of Alaska.

See EPA’s response to comment 6.F.5 regarding tax revenue.

See EPA’s response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

6.F.9 Alaska Department of Environmental Conservation (Doc. #0814, pp. 34–36)

Region 10 is required to consider the costs as well as the benefits of its proposed veto.

Neither § 404(c) nor its implementing regulations [40 C.F.R. § 231.] specifically provide that EPA must weigh the costs of its proposed actions when making veto decisions under § 404(c). But this does not mean that Region 10 is free to ignore costs in a § 404(c) determination: agencies are required to engage in reasoned decisionmaking when taking action, and their decisions must be based on a consideration of all relevant factors. [See *Michigan v. EPA*, 135 S. Ct. 2699, 2706 (2015) (citations omitted).] This consideration must include costs unless such consideration is prohibited by the controlling statutory text.

Michigan v. EPA is instructive. There, the United States Supreme Court invalidated an EPA decision that regulation of power plants under the Clean Air Act’s hazardous air pollutant program was “appropriate and necessary” on the grounds that the agency gave no consideration whatsoever to the costs of its action before making the decision. The Court rejected arguments that because the statutory provision in question (42 U.S.C. § 7412(n)(1)(A)) did not specifically mention costs, the agency could not consider costs in making its decision. The Court reasoned that use of the very broad term “appropriate” was meant to require the agency to consider multiple relevant factors, including but not limited to costs. [*Id.* at 2709.]

The Court went on to note that only where a statute requires EPA to make a decision based on specific factors that clearly do not include cost is the agency is entitled to ignore cost when making that decision. [*Id.*] In the absence of such language, however, an agency must weigh the costs and the benefits of its

proposed action in order to engage in reasoned decisionmaking and to avoid acting in an arbitrary and capricious manner in violation of the Administrative Procedure Act. [5 U.S.C. § 706(2)(a). See also *Mingo Logan Coal Co. v. EPA*, 829 F.3d 710, 733 (D.C. Cir. 2016) (Kavanaugh, J., dissenting) (“[A]bsent a congressional directive to disregard costs, common administrative practice and common sense require an agency to consider the costs and benefits of its proposed actions, and to reasonably decide and explain whether the benefits outweigh the costs.”). As discussed below, although Judge Kavanaugh was writing in dissent in this case, which involved a retroactive § 404(c) veto, the majority did not disagree with the contention that EPA is required to consider costs when making its § 404(c) decision.]

The District of Columbia Circuit’s 2016 decision *Mingo Logan Coal Co. v. EPA* is the only post- Michigan case to address consideration of costs in the § 404(c) veto context. *Mingo Logan* involved a retroactive veto (i.e., EPA issuing a veto years after a § 404 permit had been issued). Among other challenges, the permittee asserted that EPA had not considered the economic costs of the veto in making its decision. A split D.C. Circuit panel rejected the challenge, but did so on procedural grounds, concluding that the permittee had not adequately raised the cost issue in the veto process, and had not presented the agency with cost information to consider when making its decision. Importantly, however, both the majority and the dissent agreed that costs were a relevant consideration. The majority stated: “we do not hold that the EPA is generally exempt from considering costs in evaluating whether to withdraw a previously approved disposal site under section 404(c) . . . we hold only that it is not expected to balance costs never presented to it.” [See 829 F.3d at 730 (italics in original).]

In dissent, then-Judge Kavanaugh disagreed that the cost issue had not been adequately raised by the permittee. He went on to opine that Michigan meant that EPA must consider costs when acting under § 404(c): “In order to act reasonably, EPA must consider costs before exercising its [§] 404(c) authority to veto or revoke a permit.” [See *id.* at 735.] He noted that the term “unacceptable” in § 404(c), like the phrase “appropriate and necessary” at issue in Michigan, is “capacious[.]” [Id. at 734.] Rather than foreclosing a consideration of costs, Kavanaugh argued that this term necessitated a balancing of costs and benefits. [Id.; see also *id.* at 735 (“Section 404(c)’s text—in particular the word ‘unacceptable’—contemplates that costs must be considered”). Another statutory standard that has been held to require consideration of costs even though the statute does not specifically mention costs is the phrase “reasonably available.” *American Waterways Operators v. Wheeler*, 507 F.Supp.3d 47, 59–63 (D.D.C. 2020) (concluding that CWA § 312(f)(3), which requires EPA to determine that facilities for the disposal of sewage from vessels are “reasonably available” before a marine “no discharge zone” can be declared, requires EPA to consider the cost of compliance in making its determination because the phrase “reasonably available” is the type of language that naturally and traditionally includes consideration of costs.)] In his view, by ignoring costs, EPA had inappropriately focused on a single benefit (prevention of adverse effect on animals) and completely ignored countervailing costs to humans that would result from the revocation. [Id. at 733.] Among the costs he identified as relevant were lost tax revenue to the State of West Virginia. [Id. at 731.]

As noted above, the *Mingo Logan* panel majority did not reach a different conclusion as to the need to consider costs when making § 404(c) veto decisions; rather, they simply ruled that the cost argument

had been waived. In fact, the majority specifically expressed general agreement with the principle that costs were required to be considered: “Indeed, we do not quibble with [then-Judge Kavanaugh’s] general premise—and that of the many legal luminaries he cites—that an agency should generally weigh the costs of its actions against its benefits.” [Id. at 723.]

Thus, in the only reported decision addressing the issue in the context of a § 404(c) veto, there was consensus that EPA should consider all available information on the costs of a potential veto before making its final decision. To do otherwise would be to act in an arbitrary and capricious manner. Therefore, Region 10 must consider costs here. It has some flexibility in the manner in which it does so, in the absence of specific cost language in § 404(c), but to ignore costs entirely, as Region 10 suggests it may do, is impermissible.

EPA Response

See EPA’s response to comment 6.F.8 regarding its obligation to consider costs.

6.F.10 Alaska Department of Environmental Conservation (Doc. #0814, pp. 36–40)

II. Region 10’s Cost Analysis Document fails to consider costs and improperly considers ancillary benefits.

Region 10’s costs analysis has several flaws. Chief among them is the failure to acknowledge, much less consider, the costs that foreclosing development of the Pebble deposit would have on the State of Alaska.

1. Costs to Alaska

As discussed elsewhere in this Letter, [See Takings Section of this Comment Letter.] Region 10’s proposed veto, if finalized, would likely effect a regulatory taking. Even if it does not rise to that level, Region 10 must consider the costs to the State that would result from finalization of the proposed veto.

Mining is a significant contributor to Alaska’s economy. In 2021, considering direct, indirect and induced employment, Alaska’s mining industry contributed approximately 10,800 jobs and \$985 million in wages to the state economy. [See McKinley Research Group, LLC, *The Economic Benefits of Alaska’s Mining Industry* (May 2022), at 3, retrieved from <https://www.mcdowellgroup.net/wp-content/uploads/2022/06/economic-benefits-of-alaskas-mining-industry-may-2022.pdf>.]

As detailed earlier in this Letter, [See *supra* Section 2 of the Alaska Section of this Letter.] the State obtained title to the lands containing the Pebble deposit as part of the Cook Inlet Land Exchange in the 1970s. The area was selected by the State specifically because of the presence of valuable mineral deposits, and the area has been designated for mineral development, consistent with the language in Article 8 of the Alaska constitution encouraging development of the State’s natural resources. [See *supra* Sections 1–3 of the Alaska Section of this Letter.] As also detailed in this Letter, [See *supra* Section 4 of the Alaska Section of this Letter.] the State has been committed since acquiring the land to responsible development of the Pebble deposit.

Region 10's proposed veto would preclude not only the currently proposed 2020 Mine Plan, but also any future development of the Pebble deposit, by preventing any future mining in a 309 square mile area overlying the deposit if that development would have effects similar in nature and magnitude to the 2020 Mine Plan. [PD § 5.2.] Given that the 2020 Mine Plan calls for developing only a small portion of the entire deposit, it is likely—in fact, virtually certain—that any future economically viable mining plan would be deemed by Region 10 to have effects similar or greater in nature and magnitude to those deemed to result from the 2020 Mine Plan. [If, as the EPA Cost Analysis suggests, the 2020 mine plan is not economically viable, then the 2020 mine plan is the floor of economic viability, not a ceiling, and any development necessarily will be of greater magnitude than the 2020 mine plan. See Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Proposed Determination for the Pebble Deposit Area, Southwest Alaska (EPA 2022) (“EPA Costs Analysis”) (reflecting EPA’s uncertainty about whether even the 2020 mine plan is economically viable).] It is clear, therefore, that the proposed restriction is intended to foreclose any development of the Pebble deposit, in perpetuity. Yet the EPA Cost Analysis contains only a single passing reference to the costs to the State resulting from foreclosing development of the Pebble deposit, and does so only in the context of the possibility that some benefits of the 2020 Mine Plan might flow to Alaska Natives. [“The costs of the 2020 Mine Plan as presented in Section 6.1 would produce increased economic outcomes for the State of Alaska, a portion of which would accrue to Alaska Natives, Tribes and ANCs in the Bristol Bay region.” EPA Cost Analysis, at 50.] No consideration whatsoever is given to losses to State revenues generally, which are used for the benefit of all Alaskans.

Development of the Pebble deposit would lead to revenue for the State and for local communities. This revenue would be derived from mining license taxes, corporate income taxes, and royalty payments (because the deposit is located on State lands). The FEIS contains estimates of these revenue. [These estimates are based on a 2013 IHS study, adjusted to reflect the 2020 Mine Plan because the 2013 study predated the development of that plan. IHS, *The Economic and Employment Contributions of a Conceptual Pebble Mine to the Alaska and United States Economies* (May 2013), retrieved from <https://www.northerndynastyminerals.com/site/assets/files/4333/study.pdf>] This information was readily available to Region 10, which was a cooperating agency on the FEIS, but inexplicably is not mentioned in the EPA Cost Analysis.

The FEIS estimated that development under the 2020 Mine Plan could generate \$25 million in state taxes during the construction phase, and \$64 million in corporate income taxes during the operations phase. The FEIS also estimated annual State revenues of \$41 million in mining license taxes, and \$20 million in royalty payments, [For minerals produced on state land, Alaska charges a royalty of 3% of net income. See AS § 38.05.212(b)(1). A portion of mineral royalties and mineral lease rentals are directed to the Alaska Permanent Fund, which invests the money and pays dividends on its earnings to Alaska residents. See AS § 37.13.010(a). In 2021, the dividend payment was \$1114. See <https://pfd.alaska.gov/>.] during the operations phase. Assuming a 5-year operations phase and a 20-year production phase, that amounts to a total estimate of roughly \$2.63 billion in 2011 dollars in lost revenue to the State as a result of vetoing the 2020 Mine Plan. [FEIS at 4.3-11. Presumably, state taxes

would be paid from the \$31.7 billion in estimated revenue identified on p. 50 of the EPA Cost Analysis—the revenue is not additive. However, any valid cost analysis must acknowledge that the State and its residents will be significantly adversely affected by forever foreclosing development of the Pebble deposit.] Locally, the Lake and Peninsula Borough was estimated to receive \$23.8 million annually in severance taxes. [IHS Markit Analysis, at 18.]

A recent report by IHS Markit (the 2022 IHS Markit Analysis) [IHS Markit, Economic Contribution Assessment of the Proposed Pebble Project to the US National and State Economies (February 2022), retrieved from https://northerndynastyminerals.com/site/assets/files/4289/ndm_economic_impact_of_the_pebble_project_-_february_20.pdf.] contains revised estimates: \$29.6 million in Alaska state taxes annually in the 5 year construction phase; \$24.7 million in Alaska state taxes annually in production years 1–5; \$72.6 million in Alaska state taxes annually in production years 6–20; \$37.8 million in extraction taxes and royalties in production years 1–5; and \$85.9 million in extraction taxes and royalties in production years 6 through 20. [See 2022 IHS Markit Analysis, at 4.] The total revenue for the State in this forecast is approximately \$2.83 billion. This is revenue that the veto would prevent the State from ever realizing.

The 2022 IHS Markit Analysis also analyzed expansion options that were developed during the § 404 permitting process. One of these scenarios involves increased production beginning in production year 5 (from 180,000 tons per day to 270,000 tons per day) plus the addition of a separate gold recovery plant. This scenario represents the highest level of production of the scenarios analyzed. In this scenario, the potential tax revenues to Alaska in the construction phase are the same as noted in the previous paragraph, but potential State revenues from a 20 year production period are greater: \$29.5 million in Alaska state taxes annually in production years 1–5; \$151.7 million in Alaska state taxes annually in production years 6–20; \$44.8 million in extraction taxes and royalties in production years 1–5; and \$173 million in extraction taxes and royalties in production years 6–20. [See 2022 IHS Markit Analysis, at 4.] The total revenue for the State in this forecast (and thus the revenue lost due to the potential veto) is approximately \$5.39 billion. Although more speculative because plans are less developed for the expansion scenarios than for the 2020 Mine Plan, this analysis provides a sense of the upper bound of potential lost revenue to the State of Alaska over a 25 year mine development window (5 years of construction and 20 years of production).

The 2022 IHS Markit Analysis thus suggests that lost revenue to the State of Alaska resulting from Region 10's proposed veto ranges from \$2.8 billion to \$5.39 billion. Notably, even the expansion scenarios considered in the 2022 IHS Markit Analysis do not involve full development of the very large Pebble deposit. Given Region 10's intent to completely foreclose its development, the upper bound of lost revenue to the State ultimately exceeds \$5.39 billion.

Region 10's failure to consider lost revenue to the State of Alaska that would result from the proposed veto is the failure to consider an important factor in evaluating the costs of its proposed action, in violation of *Michigan v. EPA*.

2. Improper Scale of Benefits Estimation

Section 5 of the EPA Cost Analysis identifies the benefits of EPA's proposed veto in terms of protecting fisheries, recreational uses, cultural resources and other resources. These benefits, however, are improperly inflated: Region 10's analysis fails to identify the impacts to these resources both with and without the mining project. For example, in discussing commercial fisheries, Region 10 states that the commercial salmon fishery generates 15,000 jobs and roughly \$2 billion in annual revenue, approximately half of which is in Alaska. However, Region 10 provides no indication of how much that revenue or job base would be impacted by the 2020 Mine Plan. Surely Region 10 does not believe that all the fish in Bristol Bay would be wiped out by the proposed activities, which would occur within a very small portion of the Bristol Bay area's anadromous fish streams. Such a conclusion would be shocking, particularly in light of the FEIS, in which Region 10 participated, which concluded that under normal operations, the alternatives considered in the document (including the 2020 Mine Plan) "would not be expected to have a measurable effect on fish numbers or result in long-term changes to the health of the commercial fisheries in Bristol Bay," and that effects on recreational fishing would be modest. [FEIS, at 4.6-3.]

To truly weigh the costs and benefits of its proposed veto, Region 10 must attempt to assess how much the fisheries in Bristol Bay would be impacted were the mine to be authorized. Region 10 cannot simply point to the economic value of the entire fishery as a benefit of a veto.

Dodging this issue, Region 10 ties the Proposed Prohibition and Restriction to several smaller watersheds (South Fork Kaktuli, North Fork Kaktuli, and Upper Talarik Creek). [E.g., PD at ES-11.] Of course the impacts of the 2020 Mine Plan operation would be proportionally larger when compared to the waters in these smaller watersheds. But Region 10 never identifies the scope of benefits specific even to these smaller watersheds. Instead, it consistently refers to the economic value of the entire Bristol Bay area. Again, because the mine would not eliminate the entire Bristol Bay area, or its fish, Region 10's approach grossly overstates the benefits of the proposed veto. [Every point raised in this section applies equally to the benefits of protecting other resources identified and analyzed in the EPA Cost Analysis, but because the proposed veto is based entirely on the perceived impact to fisheries, that is the most salient resource to which this Letter applies.]

3. Consideration of Ancillary Benefits

In Michigan, the Supreme Court left open the question of whether "ancillary" benefits could be considered when an agency conducts a required analysis of the costs and benefits of a proposed action. [See Michigan, 135 S.Ct. at 2711 ("Even if the Agency could have considered ancillary benefits when deciding whether regulation is appropriate and necessary—a point we need not address—it plainly did not do so here.")]. Ancillary benefits are benefits incidental to the stated purpose of the action. In Michigan, ancillary benefits included regulation and reduction of hazardous air pollutant emissions. As noted above, Michigan involved EPA's decision to regulate power plants under the Clean Air Act's hazardous air pollutant program. Ancillary benefits identified by the Agency were tied to reduced emissions of particulate matter and sulfur dioxide, which are not hazardous air pollutants. [See *id.* at 2706.]

Region 10 here similarly identifies purported incidental benefits. It has clearly stated that the proposed veto (both the prohibition and the restriction) is based solely on effects on anadromous fishery areas, and not on other resources identified in CWA § 404(c) as potential grounds for a veto. [PD at 1-2, 4-1, 5-1, & 5-2.] Nevertheless, Region 10 puts on a show-and-tell of potential benefits to numerous other resources, including: recreational uses; cultural resources; ecosystem values; health and safety; quality of life; non-use value; environmental justice; and risks from potential dam failures and spills. [EPA Cost Analysis, at 25-44. Of these additional resources, only recreation (specifically, “recreational areas”) could form the basis of a § 404(c) veto.]

If Region 10 is going to identify ancillary benefits, it must also identify ancillary costs. Ancillary costs include all the benefits that a mine could bring to the area, socially, culturally, and otherwise. Because Region 10 inadequately considered the costs and benefits of its proposed veto, the proposed veto should be withdrawn.

EPA Response

With respect to the commenter’s contention that EPA’s action “would likely effect a regulatory taking,” EPA disagrees. See EPA’s response to comment 2.C.45.

With respect to the commenter’s contention that EPA’s action would “prevent any future mining in a 309 square-mile area” and “foreclose any development of the Pebble deposit, in perpetuity,” EPA disagrees. See EPA’s response to comment 2.C.1, 2.C.23, and 6.F.25. To the extent the commenter bases their contention on the fact that the vast majority of that area was specifically selected and designated by the State of Alaska for mining development,” see EPA’s response to comment 2.C.17.

With respect to the commenter’s contention that “no consideration whatsoever is given to losses to State revenues,” EPA disagrees. See EPA’s response to comment 6.F.3.

Commenter suggests that EPA overestimated benefits in Section 5 of EPA’s Cost Document by (1) describing the value of the Bristol Bay region as a whole instead of the projected change in the ecosystem service value attributable to the mine impacts; and (2) considering co-benefits from potentially affected resources other than anadromous fishery areas. EPA disagrees. EPA notes that it did not quantify or monetize benefits of the FD due to data limitations. Instead, EPA developed a qualitative characterization of benefits considering all relevant information on the value of the resources potentially affected by the 2020 Mine Plan. EPA lacked the data to estimate, with precision, the degree to which resource values would be affected by the 2020 Mine Plan. As part of the development of the FD, and building on efforts documented for the PD, EPA conducted a detailed review of the available documentation of the economic value of natural resources potentially affected by the 2020 Mine Plan. EPA incorporated the insights gained from this additional research and from information provided in the public comments in the characterization of benefits into the Cost Document.

With respect to (1), EPA found that there would be potential downstream effects from the proposed mine; see Section 4 of the FD for details about potential downstream impacts. Given those impacts and the complexity of the Bristol Bay ecosystem, it is not appropriate to limit the assessment of potential environmental impacts to the three watersheds directly affected by the 2020 Mine Plan. Preventing or mitigating such potential downstream impacts is a benefit or “advantage” of EPA’s action. See *Michigan v. E.P.A.*, 576 U.S. 743, 753 (2015) (“[R]easonable regulation ordinarily requires paying attention to the advantages and the disadvantages of agency decisions”). Additionally, EPA notes that it equally did not limit its consideration of the costs or “disadvantages” of its action to those costs that would accrue only in the three watersheds directly affected by the 2020 Mine Plan. EPA also documented potential sources of uncertainty and data limitations affecting its characterization of potential benefits in Section 4.1 of the Cost Document and factored this uncertainty into EPA’s decision making.

With respect to (2), EPA disagrees that there are benefits which exist only as co-benefits (or ancillary benefits), which can either be included or excluded from the analysis of benefits of the FD. EPA’s consideration is consistent with the Supreme Court’s decision in *Michigan*, which directed EPA to consider both “the advantages and disadvantages of [its] decision” (*Michigan v. E.P.A.*, 576 U.S. at 753). According to *Michigan*, such consideration helps an agency understand whether its action “does . . . more harm than good.” *Id.* The benefits and costs considered under EPA’s approach are “advantages and disadvantages of [EPA’s] decision” that helped EPA determine whether its action did “more harm than good,” and thus are directly relevant (not ancillary) to EPA’s determination.

Additionally, to the extent that EPA did consider ancillary costs and benefits, the discussion of the full range of costs and benefits is supported by federal guidance for conducting economic analysis (e.g., OMB 2003). OMB (2003) specifically states: “...analysis should look beyond the direct benefits and direct costs of your rulemaking and consider any important ancillary benefits and countervailing risks.” This approach is also consistent with EPA’s *Guidelines for Preparing Economic Analyses* (U.S. EPA, 2016), which states

An economic analysis of regulatory or policy options should present all identifiable costs and benefits that are incremental to the regulation or policy under consideration. These should include directly intended effects and associated costs, as well as ancillary (or co-) benefits and costs.

EPA disagrees that it failed to consider indirect and induced costs resulting from the 2020 Mine Plan and, thus, that it underestimated the costs of associated with the FD. EPA considered estimates of indirect and induced costs from the IHS Markit report, the details of which can be found in Section 6.1.2 of the Cost Document.

The commenter describes benefits that the State of Alaska would accrue as a result of the 2020 Mine Plan expansion options. EPA’s analysis of costs and benefits considered the 2020 Mine Plan, which is the focus of the FD; it did not consider the costs and benefits of additional expansion scenarios, as these scenarios were beyond the scope of the analysis.

See EPA’s response to comment 6.F.3 regarding impacts to the State of Alaska.

See EPA’s response to comment 6.F.5 regarding tax revenue.

6.F.11 Trustees for Alaska et al. (Doc. #0831, pp. 29–31)

Comments on how EPA Region 10 considered costs, including whether all appropriate costs have been considered.

As EPA identified, Bristol Bay is home to an unrivaled wild salmon fishery worth over \$2.2 billion annually and providing 15,000 jobs in 2019.[U.S. Environmental Protection Agency, Consideration of Potential Costs in the Proposed Determination 8 (2022).] And “[b]ecause salmon return to the region each year, [this] provides a sustainable economic engine for the region.”[Id.] EPA also appropriately acknowledged other myriad benefits stemming from this Proposed Determination, including subsistence, ecosystem integrity, and non-use benefit—all of which “are currently being realized and . . . have been accruing for centuries.”[Id. at 12.] Salmon are the lifeblood of the region’s economy and culture, and EPA properly found that any uncertainty in the estimation of benefits is likely to lead to an underestimation of these values.[Id. at 14.]

EPA should also consider the substantial economic value of recreational and commercial brown bear viewing in Southcentral Alaska which is addressed in a report from the School of Management at the University of Fairbanks.[Ex. 155] Southcentral Alaska supports Alaska’s, and the world’s, largest concentration of brown bears.[Id.] The abundance of food sources for the omnivorous brown bears on the west side of Cook Inlet means reduced competition between bears, allowing for the population density that make Alaska a premier destination for brown bear viewing.[See Id. at 1. In 2011, there were 640,000 total non-consumptive wildlife viewing participants in the State of Alaska. Id. citing 2011 National Survey of Fishing, Hunting and Wildlife-Associated Recreation. This equals a total of more than \$2 billion spent in 2011. Id. These numbers are not specific to brown bears, but it is clear that large land mammals, including bears, bison, deer, moose, and elk, support a robust part of Alaska’s tourism economy. Id.] This provides a unique experience for bear-viewers, and an economic opportunity for the many associated local service providers.[Id.] In Alaska, tourists are willing to pay more to view brown bears than any other Alaskan wildlife.[Penteriani, Vincenzo et al., 2017, Consequences of Brown Bear Viewing Tourism: A Review, Biological Conservation, 206, pp. 169-180 at 171(Ex. 159) Penteriani also reports that ecotourism is rapidly growing as a commercial activity and is currently considered as one of the world’s biggest industries, with ecotourism growing three times faster than the number of conventional tourist. Id. at 170.]

As EPA acknowledges, the Proposed Determination would protect bears and recreational bear viewing.[ENV’T PROTECTION AG., Consideration of Potential Costs in the Proposed Determination 24,

28–29 (2022).] However, economic activity associated with brown bear viewing provides an even larger benefit than EPA suggests. Many different businesses are directly impacted by brown bear viewing opportunities in southcentral Alaska. These include lodges, hotels, air taxi providers, guided photography workshops, guided wildlife viewing, boat taxis, dining facilities, grocers, etc. The service operators themselves also contribute to the socioeconomic impact in their communities, as they live and recreate on their incomes generated from bear viewing activities.[Ex. 155 (young) at 14.] Economic modeling estimates that bear viewing related business activity generates approximately \$34.5 million in sales and \$10 million in direct wages and benefits.[Id. at 24.] EPA should include this substantial benefit in its analysis.

EPA should apply skepticism to the economic benefits PLP claims the proposed Pebble Mine would bring to people in the region and to the State of Alaska. In doing so, EPA can rely on a report prepared by Power Consulting, Inc., which analyzed the DEIS and its assessment of socioeconomics associated with the Pebble Mine,[Thomas Power, Ph.D., & Donovan Power, M.S., Public Comments on the U.S. Army Corps of Engineers Pebble Project EIS Draft Environmental Impact Statement (June 11, 2019) (Ex. 43).] and identified four major issues with the DEIS analysis: (1) lack of an economic feasibility assessment; (2) misleading projection of economic benefits from the mine in the region and for the State; (3) jobs are not likely to be filled by people from the region at the rate projected by PLP; and (4) PLP provides unreliable estimates for local and state revenue.[Id. at ESi to ESvi.] These failures were not redressed in the Final EIS.

EPA can rely on the Power report to find that economic benefits from the mine would likely be lower than represented because there are costs “associated with mineral-dependent economies that often keep communities and states from prospering from those mineral extraction activities.”[Id. at 2.] In addition, the international market is known for “constant fluctuations in mineral prices and . . . [that] leads to fluctuations in mining employment, payroll, and revenues to governments”[Id.] This is referred to as flicker.[Id.] As a result, the market-driven volatility, which can lead to layoffs and rehires “creates and maintains a level of economic uncertainty that discourages other, non-mineral, economic activities, retarding economic vitality.”[Id.] This report also explains why the mining-related employment numbers provided in the FEIS, and relied on in EPA’s current analysis, must be considered in the context of state employment and growth and are unlikely to benefit local communities.[Id. at 13–14, 19–20.] All of these factors call into question any purported economic benefit associated with the mine, especially to the local community.

In sum, allowing the large-scale mining of the Pebble deposit may economically benefit a foreign mining company (but only if at a scale much greater than the 2020 Mine Plan), and would severely impact thriving, local businesses built on commercial fishing, sportfishing, bear viewing, and other sustainable industries.

EPA Response

The commenter references the need to include additional discussions of the potential benefits of the FD to several areas, including (1) commercial and recreational salmon

fishing; (2) subsistence fishing; (3) brown bear viewing; and (4) impacts on the economy and jobs from maintaining the health of the fishery. EPA agrees that these are potential benefits of EPA's action. Accordingly, EPA revised its characterization of benefits in Section 5 of the Cost Document to incorporate or enhance these discussions based on additional information provided during public comment and through further review of the economic literature on the use and economic value of natural resources potentially affected by the 2020 Mine Plan. The revised discussion of commercial and recreational fisheries benefits in Sections 5.1 and 5.2 of the Cost Document includes additional text on local economic impacts (including direct and indirect employment) from the 2020 Mine Plan's potentially adverse effects on fishery areas. The extended discussion of subsistence benefits in Section 5.2 of the Cost Document incorporates information about the value of subsistence fishing in Bristol Bay and discussion of the potential benefits to subsistence communities from preventing an increase in time and expense for other types of subsistence harvesting (e.g., due to the potential displacement of other wildlife and fugitive dust impacts on berries and other vegetation). Lastly, Section 5.3.2 of the Cost Document includes additional discussion of the economic value (including recreational use and commercial values) of brown bear viewing in the Bristol Bay region.

EPA agrees that Bristol Bay is home to an unrivaled salmon fishery. See Section 5 of the Cost Document for more information on the value of the Bristol Bay fishery and salmon-based ecosystem.

EPA agrees that the Bristol Bay commercial salmon fishery is an important resource, worthy of significant consideration. Accordingly, EPA has expanded its discussion of commercial fisheries in Section 5.1 of the Cost Document. Additional discussion includes: (1) acknowledgement of the 2020 Mine Plan's potential to reduce salmon abundance beyond the watersheds directly affected by the mine site via impacts to streams and wetlands; (2) a discussion of the potential impact to the price of Bristol Bay salmon associated with consumer concerns over contamination from mining activity in the watershed; and (3) a discussion of the tax revenue generated (i.e., through fishery-related taxes on the ex-vessel value of seafood landed in Alaska and seafood processed outside of Alaska state waters, but moved through Alaska ports for transshipment) and its significance to local communities.

EPA agrees that information on the value of bear viewing in Bristol Bay is relevant to understanding the impacts of EPA's FD. EPA incorporated information on bear viewing into Section 5.3.2 of the Cost Document.

See EPA's response to comment 6.F.1 regarding impact to local communities and economic activity.

See EPA's response to comment 6.F.4 regarding jobs.

See EPA’s response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

6.F.12 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 50–51)

There is Not a Critical Need for the Pebble Project

PLP asserts that “EPA must consider the need for the Pebble Project, and the environmental and societal costs of preventing the development of a US-based source of the minerals needed to support the clean energy market.” [Letter from PLP to EPA (March 28, 2022), at p. 7, available at:

<https://www.epa.gov/system/files/documents/2022-03/bristol-bay-404-response-letter-plp-3-28-2022.pdf>.]

The Pebble Mine Project would do little to meet current and future demand for copper and other minerals. PLP’s 2020 Mine Plan would have resulted in production of approximately 320 million pounds of copper per year [See, Northern Dynasty Minerals Corporate Presentation (June 16, 2022), at p. 18, available at <https://northerndynastyminerals.com/investors/presentations/>.] and 7.4 billion pounds of copper overall. [Final EIS, Appendix N (Project Description June 2020), Table 1-1, at page 13.] At the present annual global consumption rate for refined copper (approximately 48 billion pounds in 2017) [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>. (“The International Copper Study Group projected that global refined copper consumption would be approximately 24 million tons [48 billion pounds] in 2017.”).], this project would supply the global market with a mere 56 days’ worth of copper demand. [7.4 billion pounds from Pebble / 48 billion pounds global consumption annually = 0.1542 * 365 days per year = 56.3 days.] Moreover, PLP’s plans, as disclosed in the Final EIS, are to ship all ore to Asia directly from its Cook Inlet port site. [Final EIS, at p. 2-73 (citing PLP response to RFI 163). See also, Final EIS, Appx. K3.12 (shipping routes to Asia).] PLP cannot 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.

EPA Response

Comment 6.F.12 generally supports EPA’s assessment of the impact of the Pebble Mine’s estimated copper production on downstream copper markets, which is described in Section 6.2 of the cost document. See also EPA’s response to comment 1.C.11.

6.F.13 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 51–52)

EPA Need Not Undertake a Cost Benefit Analysis for a 404(c) Action

PLP asserts that EPA has made “no attempt to assess the economic impacts of this decision to the state of Alaska.” [<https://pebblepartnership.com/submit-july-2022> (accessed Aug. 29, 2022).] This is false.

EPA drafted a report describing Region 10's consideration of potential costs regarding its use of Section 404(c) action in this instance, including accounting for the economic activity and impacts to the State of Alaska that may be associated with the construction and operation of a mine at the Pebble deposit measured against the environmental and cultural benefits that would result from avoiding the impacts associated with the development of PLP's proposed 2020 Mine Plan. [EPA, Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Proposed Determination for the Pebble Deposit Area, Southwest Alaska, available at: [.regulations.gov/document/EPA-R10-OW-2022-0418-0002](https://www.regulations.gov/document/EPA-R10-OW-2022-0418-0002) [hereinafter "Draft Costs Report"].] But, as EPA correctly acknowledges in its Draft Costs Report, EPA is not required to "consider non-environmental costs, such as the economic benefits of a forgone project" when undertaking a Section 404(c) action. [Draft Costs Report, at p. 4.]

The plain text of the Clean Water Act, the congressional intent as evidenced by the Section 404(c) legislative history, and EPA's own interpretation of the statutory factors the agency is permitted to consider when undertaking a 404(c) action notably do not include consideration of potential costs.

The text of Section 404(c) of the Clean Water Act makes no mention of economic impacts as a consideration for the agency when exercising its authority. The Act directs the agency to consider only whether "the discharge of [dredged or fill] materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas." [33 USC § 1344(c).]

Moreover, Section 404(c)'s legislative history confirms that Congress intended the section to serve as an environmental check on the Army Corps' permitting authority under Section 404. An early House amendment to the bill would have given the Army Corps the power to administer the permitting of dredged or fill material without EPA oversight. Instead, the Army Corps would have been, by itself, "required to determine that the discharge would not unreasonably degrade or endanger human health, welfare, or amenities or the marine environment, ecological systems, or economic potentialities." [JOINT EXPLANATORY STATEMENT OF THE COMMITTEE OF CONFERENCE, Pub. L. No. 92-500 reprinted in 1 Legislative History of the Federal Water Pollution Control Act Amendments of 1972, at 324 (1973)(emphasis added).] That scheme for the Section 404 permit program did not survive the House and Senate conference committee; instead, economic potentialities was dropped from the statute and the EPA was given oversight authority to ensure administration of the 404 program fulfills the environmental and ecological priorities of the Clean Water Act.

In line with the statutory language, EPA itself has excluded economic factors from its Section 404(c) regulations. Instead, the agency in its rulemaking process noted:

[S]ection 404(c) does not require a balancing of environmental benefits against non-environmental costs such as the benefits of the foregone project. This view is based on the language of 404(c) which refers only to environmental factors. The term "unacceptable" in EPA's view refers to the significance of the adverse effect—e.g. is it a large impact and is it one that the aquatic and wetland ecosystem cannot afford.

[...]

there is no requirement in 404(c) that a cost/benefit analysis be performed, and there is no suggestion in the legislative history that the word ‘unacceptable’ implies such a balancing. [44 Fed. Reg. 58,076, 58,078 (Oct. 9, 1979).]

To conclude, while EPA’s Draft Costs Report is helpful for disclosing economic information to the public for its consideration and participation in the public comment process, EPA should not rely on costs analysis when making a final Section 404(c) determination. Indeed, the agency should be mindful of not relying on statutory factors that have not been enumerated by congress. [State Farm, 463 U.S. at 43 (agency action arbitrary and capricious for relying on a factor which Congress had not intended for it to consider). See also, Alliance to Save the Mattaponi v. EPA, 606 F. Supp. 2d 121, 140 (D.D.C.

2009) (relying on any factors outside those statutorily mandated by Congress is arbitrary and capricious).] To the extent the agency would like to know about costs for other purposes, BBNC is providing in Appendix B additional information for the agency’s consideration. As this additional information shows, the ongoing, positive economic role of the ecosystem services provided by Bristol Bay’s pristine waters far outweighs the potential loss of speculative revenues from the proposed Pebble Mine.

EPA Response

See EPA’s response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

See EPA’s response to comment 6.F.8 regarding its obligation to consider costs.

6.F.14 Bristol Bay Native Corporation (BBNC) (Doc. #0832, p. 78)

To the extent the agency feels it nevertheless wants to characterize costs associated with its decisionmaking, BBNC is providing in Appendix B additional cost information for the agency’s consideration. As this additional information shows, the ongoing, positive economic role of the ecosystem services provided by Bristol Bay’s pristine waters far outweighs the potential loss of speculative revenues from the proposed Pebble Mine.

EPA Response

See EPA’s response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

See EPA’s response to comment 6.F.11 regarding the benefits of its action.

6.F.15 Bristol Bay Native Corporation (BBNC) (Doc. #0832, Appendix B, pp. 2–3)

A. EPA NEED NOT CONSIDER COSTS

As an initial matter, EPA correctly acknowledges in its Draft Costs Report that it is not required to “consider non-environmental costs, such as the economic benefits of a forgone project” when undertaking a Section 404(c) action. [Draft Costs Report, at p. 4.]

The plain text of the Clean Water Act, the congressional intent as evidenced by the Section 404(c) legislative history, and EPA’s own interpretation of the statutory factors the agency is permitted to consider when undertaking a 404(c) action notably do not include consideration of potential costs.

The text of Section 404(c) of the Clean Water Act makes no mention of economic impacts as a consideration for the agency when exercising its authority. The Act directs the agency to consider only whether “the discharge of [dredged or fill] materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.” [33 USC § 1344(c).]

Moreover, Section 404(c)’s legislative history confirms that Congress intended the section to serve as an environmental check on the Army Corps’ permitting authority under Section 404. An early House amendment to the bill would have given the Army Corps the power to administer the permitting of dredged or fill material without EPA oversight. Instead, the Army Corps would have been, by itself, “required to determine that the discharge would not unreasonably degrade or endanger human health, welfare, or amenities or the marine environment, ecological systems, or economic potentialities.” [JOINT EXPLANATORY STATEMENT OF THE COMMITTEE OF CONFERENCE, Pub. L. No. 92-500 reprinted in 1 Legislative History of the Federal Water Pollution Control Act Amendments of 1972, at 324 (1973) (emphasis added).] That scheme for the Section 404 permit program did not survive the House and Senate conference committee; instead, economic potentialities was dropped from the statute and the EPA was given oversight authority to ensure administration of the 404 program fulfills the environmental and ecological priorities of the Clean Water Act.

In line with the statutory language, EPA itself has excluded economic factors from its Section 404(c) regulations. Instead, the agency in its rulemaking process noted:

[S]ection 404(c) does not require a balancing of environmental benefits against non- environmental costs such as the benefits of the foregone project. This view is based on the language of 404(c) which refers only to environmental factors. The term “unacceptable” in EPA’s view refers to the significance of the adverse effect—e.g. is it a large impact and is it one that the aquatic and wetland ecosystem cannot afford. [...]

there is no requirement in 404(c) that a cost/benefit analysis be performed, and there is no suggestion in the legislative history that the word ‘unacceptable’ implies such a balancing. [44 Fed. Reg. 58,076, 58,078 (Oct. 9, 1979).]

While EPA’s Draft Costs Report is helpful for disclosing economic information to the public for its consideration and participation in the public comment process, EPA should not rely on costs analysis when making a final Section 404(c) determination. Indeed, the agency should be mindful of not relying on statutory factors that have not been enumerated by Congress. [Motor Vehicle Mfrs. Assn. of United

States, Inc. v. State Farm Mut. Automobile Ins. Co., 463 U.S. 29, 43 (1983) (agency action arbitrary and capricious for relying on a factor which Congress had not intended for it to consider). See also, Alliance to Save the Mattaponi v. EPA, 606 F. Supp. 2d 121, 140 (D.D.C. 2009) (relying on any factors outside those statutorily mandated by Congress is arbitrary and capricious).] To the extent the agency would like to know about costs for such contextual purposes, BBNC is providing in Appendix B additional information for the agency’s consideration. As this additional information shows, the ongoing, positive economic role of the ecosystem services provided by Bristol Bay’s pristine waters far outweighs the potential loss of speculative revenues from the proposed Pebble Mine.

EPA Response

See EPA’s response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

See EPA’s response to comment 6.F.8 regarding its obligation to consider costs.

6.F.16 Bristol Bay Native Corporation (BBNC) (Doc. #0832, Appendix B, pp. 4–8)

B. UNCERTAIN ECONOMICS RELATED TO MINING THE PEBBLE DEPOSIT

1. No Pre-Feasibility or Feasibility Study

In nearly every instance, hardrock mine projects in Alaska complete a preliminary feasibility study before entering into permitting. [See enclosed BBNC Appendix D, at pp.1911 to 1921 (Chambers and Levit, Feasibility Studies for Alaska Mines (March 28, 2018)).] Contrary to this industry standard, NDM and PLP has merely undertaken preliminary economic assessment (“PEA”)-level analysis of the 2020 Mine Plan’s economic viability, a less rigorous undertaking with a much higher margin of error.

A mining feasibility study is an evaluation of a proposed mining project to determine whether the mineral resource can be mined economically. There are three types of feasibility study used in mining: Preliminary Economic Assessment, preliminary feasibility, and detailed feasibility. Preliminary feasibility studies have an accuracy within 20% to 30% while detailed feasibility studies have an accuracy within 10% to 15%. [See enclosed BBNC Appendix D, at pp.1911 to 1921 (Chambers and Levit, Feasibility Studies for Alaska Mines (March 28, 2018)).] PEAs, however, have a much lower level of accuracy. [Id.] Therefore, reliance on NDM’s 2021 PEA should be noted with a large degree of uncertainty.

Indeed, EPA’s Costs Draft Report properly notes that “[t]here is uncertainty that the proposed mine would be profitable, even if constructed.” [Costs Draft Report, at p. 5.] EPA’s conclusion is backed by PLP and NDM’s own admissions in their financial filings that the economic viability of the Project is speculative. For example, in 2022 alone, NDM made the following statements:

* “there are currently no known reserves or body of commercially viable ore.” [NDM, Second Quarter Financial Report for the period ending June 30, 2022 (filed with the SEC Aug. 16, 2022), availabl://www.sec.gov/Archives/edgar/data/0001164771/000165495422011412/ndm_6k.htm.]

* “The current mine plan that is included in the Project Description for the development of the Pebble Project is [...] not supported by any preliminary or final feasibility study.” [Id.]

* “even if permitting is achieved, there is a substantial risk that [...] the Pebble Project may not be proven to be economically mineable.” [Id.]

These statements are similar to statements PLP and NDM have made for well over a decade. [See NDM financial filings with the SEC availabl://www.sec.gov/edgar/browse/?CIK=1164771&owner=exclude.] A reasonable inference from this history, consistent with other record information including the revelations most acutely (but not solely) exposed in the Pebble Tapes that the true plans are for a much larger mine than that for which PLP sought a Section 404 permit, is that PLP and NDM have avoided the routine analysis of project economics because they know it is economically infeasible.

For more information on impacts of NDM’s failure to undertake a more detailed economics feasibility, EPA’s Draft Costs Report should consider the following recent publications and administrative record documents (found in BBNC Comments on the 2022 PD Appendices C and D):

* Chambers and Levit, Feasibility Studies for Alaska Mines (March 28, 2018) (BBNC Appendix D, pp. 1911 to 1921)

* Power Consulting Inc., Public Comments on the U.S. Army Corps of Engineers Pebble Project EIS Draft Environmental Impact Statement (June 11, 2019) (BBNC Appendix D, pp. 2123 to 2166).

2. Flawed Preliminary Economic Assessment (2021); Negative Net Present Value

Throughout the Army Corps permitting process, PLP and NDM failed to publish an updated economic analysis of its 2020 Mine Plan. Instead, in response to Army Corps requests for additional financial viability information, PLP submitted a rudimentary economic model regarding the optimization of its mine plan costs. According to the information submitted by PLP, a mining scenario of 115,000 tons per day (smaller than the 2020 Mine Plan proposal) “does not have a positive net present value and is therefore not a feasible economic alternative.” [See enclosed BBNC Appendix C, pp. 2209 to 2219 (PLP responses to Army Corps Requests for Information 59 and 59a).]

During the EIS process, technical mining experts took issue with the economic feasibility of PLP’s 2020 Mine Plan, finding that it may actually have a negative net present value. [Ridolfi Environmental, Memorandum to Nondalton Tribal Council, Pebble Project DEIS: Inaccurate and misleading statements of Purpose and Need in the Proposed Pebble Project DEIS and Attachment 5A Memorandum re Technical Review of Economic Feasibility of Proposed Pebble Project (July 1, 2019) (BBNC Appendix C, pp. 1640 to 1691), Borden, Richard, Midgard Environmental Services, Review of the Pebble Mine Project Preliminary Economic Assessment (Dec. 1, 2021) (BBNC Appendix D, pp. 2053 to 2062), and Power Consulting Inc., Public Comments on the U.S. Army Corps of Engineers Pebble Project EIS Draft

Environmental Impact Statement (June 11, 2019) (BBNC Appendix D, pp. 2123 to 2166).] These concerns were never addressed by PLP in the permitting process, although PLP did disclose to the Army Corps that the economic feasibility numbers were based on the company's outdated 2011 PEA. [See enclosed BBNC Appendix C, pp. 2209 to 2219 (PLP responses to Army Corps Requests for Information 59 and 59a).]

In fall 2021, PLP and NDM released a revised Preliminary Economic Assessment ("2021 PEA") detailing the 2020 Mine Plan economics. [NDM Press Release (Oct. 25, 2021), [2nerals.com/site/assets/files/4936/october252021.pdf](https://www.sec.gov/Archives/edgar/data/1164771/000165495421011600/ndm_ex991.htm). Pebble Project Preliminary Economic Assessment NI 43-101 Technical Report, prepared for Northern Dynasty Minerals Ltd., prepared by Ausenco Engineering Canada (effective date: Sept. 9, 2021), on file with the SE://www.sec.gov/Archives/edgar/data/1164771/000165495421011600/ndm_ex991.htm [hereinafter "2021 PEA"].] Notably, as discussed above, as the PEA is not a feasibility or pre-feasibility study, the 2021 PEA is thus a cursory analysis of the economic costs and benefits of the 2020 Mine Plan. The PEA is based on incomplete information and thus contains highly speculative data. Any economic and jobs numbers touted by PLP and NDM are likewise speculative. The PEA itself notes the following limitations with its information and data:

- * "The cost estimates contained in the 2021 PEA are completed at a preliminary level. Additional analysis and engineering are required to confirm these results." [2021 PEA at p. 51.]
- * The PEA "should not in any way be construed as guarantees that the Project will secure all required government permits, establish commercial feasibility of the Project, achieve the required financing or develop the project" [2021 PEA at p. 20.]
- * "The 2021 PEA includes the use of inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the 2021 PEA results will be realized" [2021 PEA at p. 49.]
- * The PEA admits that metal price fluctuations will impact the financial viability of any mine: "Metal prices and realization costs are subject to significant fluctuation [...] These fluctuations could have a significant impact on the financial results of future studies and the actual results achieved by an operating mine." [2021 PEA at p. 51.]

Likewise confirming these limitations, a review of the 2021 PEA, undertaken by former mining executive Richard Borden, concluded that: [See enclosed BBNC Appendix D, pp. 2053 to 2062 (Borden, Richard, Midgard Environmental Services, Review of the Pebble Mine Project Preliminary Economic Assessment (Dec. 1, 2021)).]

- * The PEA is not an independent study. Half of the PEA's authors work or worked directly for NDM or HDI, the companies seeking to develop the mine.
- * The PEA has an acknowledged low degree of accuracy ($\pm 50\%$), typical for studies of this kind.

- * If metal prices return to their values from 2019, the 20-year mine would have a negative net present value.
- * The PEA speculatively assumes that someone else will pay for \$2.8 billion of pre-mining infrastructure - \$1.68 billion from outsourcing and \$1.14 billion from gold streaming.
- * The PEA overstates long-term copper prices and likely overstates long-term gold prices.
- * The 2021 PEA discloses anomalously low operating costs compared to the 2011 PEA.

Subsequent to issuance of the 2021 PEA, NDM announced entering into a metals streaming deal with an unnamed company whereby the unnamed company will take significant profits from the minerals profits generated from any mine at the Pebble deposit. [NDM Press Release, Northern Dynasty secures innovative royalty agreement (July 27, 2nerals.com/site/assets/files/4963/2022-07-27-ndm-nr.pdf.) This deal is expected to cut into the estimated net present value for the 2020 Mine Plan [See, e.g., Seeking Alpha, Northern Dynasty royalty agreement reduces dilution risk though challenges remain (Aug. 23, 2galpha.com/article/4536305-northern-dynasty-minerals-dilution-risk-reduced-challenges-remain.)] and the effect of this decrease in net present value and impact on the 2021 PEA numbers has not been disclosed by NDM.

For more information on NDM's flawed 2021 PEA and negative net present value of the proposed 2020 Mine Plan and similar mine plans, EPA's Draft Costs Report should consider the following recent publications and administrative record documents (found in BBNC Comments on the 2022 PD Appendices C and D):

- * PLP, Response to Army Corps Request for Information 59 (August 2018) (BBNC Appendix C, pp. 2209 to 2214).
- * PLP, Response to Army Corps Request for Information 59a (October 2018) (BBNC Appendix C, pp. 2215 to 2219).
- * Ridolfi Environmental, Memorandum to Nondalton Tribal Council, Pebble Project DEIS: Inaccurate and misleading statements of Purpose and Need in the Proposed Pebble Project DEIS and Attachment 5A Memorandum re Technical Review of Economic Feasibility of Proposed Pebble Project (July 1, 2019) (BBNC Appendix C, pp. 1640 to 1691).
- * Borden, Richard, Midgard Environmental Services, Review of the Pebble Mine Project Economic Contribution Assessment (March 10, 2022) (BBNC Appendix D, pp. 2048 to 2057).
- * Borden, Richard, Midgard Environmental Services, Review of the Pebble Mine Project Preliminary Economic Assessment (Dec. 1, 2021) (BBNC Appendix D, pp. 2053 to 2062).
- * Power Consulting Inc., Public Comments on the U.S. Army Corps of Engineers Pebble Project EIS Draft Environmental Impact Statement (June 11, 2019) (BBNC Appendix D, pp. 2123 to 2166).

* Chambers, David M., Significant Omissions in the Pebble Project EIS Final Environmental Impact Statement (Aug. 19, 2020) (BBNC Appendix D, pp. 1836 to 1859)

* Chambers, David M., Why Pebble will be at least a 78-year mine (March 14, 2019) (BBNC Appendix D, pp. 1875 to 1878).

* Borden, Richard K., Pebble Mine Draft EIS Comments on Reclamation and Closure (May 31, 2019) (BBNC Appendix D, pp. 1900 to 1910).

3. Global Metals Market

Given the dynamics of the global metals market, any gold, copper, molybdenum, or other metals mined at the Pebble deposit will not be refined and exclusively used within the United States. This fact, unlined by the lack of a copper smelter in the United States, has been admitted by NDM and PLP and was disclosed in the Pebble Final EIS. [Pebble Final EIS, at p. 2-73 (“The bulk carrier ships would transport the concentrate to out-of-state smelters, including Asia.”) (citing PLP response in RFI 163).]

Moreover, on a global scale the copper found at the Pebble deposit is insignificant compared to global demand for the metal, a fact that should be disclosed and analyzed in the Draft Costs Report. The Pebble Mine Project would do little to meet current and future demand for copper and other minerals. PLP’s 2020 Mine Plan would have resulted in production of approximately

320 million pounds of copper per year [See, Northern Dynasty Minerals Corporate Presentation (June 16, 2022), at p. 18, availableminerals.com/investors/presentations/.] and 7.4 billion pounds of copper overall. [Final EIS, Appendix N (Project Description June 2020), Table 1-1, at page 13.] At the present annual global consumption rate for refined copper (approximately 48 billion pounds in 2017) [See USGS National Minerals Information Center, Copper Statistics and Information Annual Publication for 2018, available: <http://www.usgs.gov/centers/nmic/copper-statistics-and-information>. (“The International Copper Study Group projected that global refined copper consumption would be approximately 24 million tons [48 billion pounds] in 2017.”).], this project would supply the global market with a mere 56 days’ worth of copper demand. [7.4 billion pounds from Pebble / 48 billion pounds global consumption annually = 0.1542 * 365 days per year = 56.3 days.] Moreover, PLP’s plans, as disclosed in the Final EIS, are to ship all ore to Asia directly from its Cook Inlet port site. [Final EIS, at p. 2-73 (citing PLP response to RFI 163). See also, Final EIS, Appx. K3.12 (shipping routes to Asia). See also, 2021 PEA at p. 263.] PLP cannot 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.

4. Socioeconomic costs versus benefits

Finally, mining the Pebble deposit will result in significant socioeconomic costs and uncertain benefits. A study of the Pebble Draft EIS (Power Consulting 2019) found that the EIS contained unreliable estimates of the impact of the proposed Pebble Project on local and state government revenues and local

employment, while simultaneously under-appreciating the volatility of metals mining and negative impacts on local communities.

For more information regarding the negative socioeconomic impacts of mining on local communities, EPA's Draft Costs Report should consider the following recent publications and administrative record documents:

* Power Consulting Inc., Public Comments on the U.S. Army Corps of Engineers Pebble Project EIS Draft Environmental Impact Statement (June 11, 2019) (BBNC Appendix D, pp. 2123 to 2166).

EPA Response

The commenter references the uncertainty of estimates provided in the PEA and other reports based on the PEA data. Generally, these comments can be categorized in two groups: (1) those that refer to the uncertainty of the impacts due to the methodology of the PEA; and (2) those that refer to the way in which uncertainty is handled in the PD. EPA has considered these uncertainties and reports the impacts of the uncertainty in Section 4.2 of the Cost Document.

See EPA's response to comment 6.F.1 regarding impact to local communities and economic activity.

See EPA's response to comment 6.F.4 regarding jobs.

See EPA's response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

See EPA's response to comment 6.F.20 regarding copper market impacts, downstream sector impacts, and clean energy infrastructure.

EPA considered the quantities of minerals that could potentially be extracted under the 2020 Mine Plan in Section 6.2 of the Cost Document.

6.F.17 Bristol Bay Native Corporation (BBNC) (Doc. #0832, Appendix B, pp. 8–11)

C. UNPARALLELED BRISTOL BAY SALMON SUPPORTS SUSTAINABLE AND ROBUST ECONOMY

The Bristol Bay watershed is home to the largest wild sockeye salmon runs in the world and it is the lifeline for the people of Bristol Bay and all those who depend on it. Bristol Bay's wild salmon have been the foundation of Alaska Native culture and traditions in the region for thousands of years. Bristol Bay is a national treasure, producing half of the world's commercial supply of wild sockeye salmon, sustaining 15,000 annual jobs, and generating roughly \$2.2 billion in annual economic activity. The robustness of this unparalleled fishery was showcased this year when a record 78 million sockeye salmon returned to Bristol Bay waters.

Detailed here are some important economic factors for EPA's consideration to include in the Draft Costs Report, including citations to relevant documents from the Army Corps permitting process and recent publications and data.

1. Commercial Fishery

Bristol Bay's commercial salmon fishery provides enormous economic benefits to both the Alaska and national economies. [See McKinley Research Group, *The Economic Benefit of Bristol Bay Salmon*, p. ES-3, available://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf. See also, 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://www.iser.uaa.alaska.edu/Publications/2013_04-TheEconomicImportanceOfTheBristolBaySalmonIndustry.pdf [hereafter ISER Report].] 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. [See id at 21] On an average year, Bristol Bay salmon fisheries thus create a total economic output value of roughly \$2.2 billion. [McKinley Research Group, *The Economic Benefit of Bristol Bay Salmon*, p. ES-3, available://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf.] Nearly one-third of all of Alaska's salmon harvest earnings come from the Bristol Bay region. [See Woodby, D., et al. *Commercial Fisheries of Alaska*, ADF&G Special Public. No. 05-09 (June 2005), available://www.noaa.gov/sustainablefisheries/sslmc/may-06/adfg/05-adfg-report.pdf.]

In the past five years, Bristol Bay sockeye salmon returns and commercial catches have set astounding records. The 2017 sockeye salmon catch in Bristol Bay had a direct harvest value of \$216.4 million and—owing to Bristol Bay processing and sustainable management—was almost double the 20-year average of \$108.9 million. [See ADF&G, *2017 Bristol Bay Salmon Season Summary* (Sept. 14, 2://www.adfg.alaska.gov/static-f/applications/dcfnewsrelease/865497019.pdf.) 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. [See ADF&G, *2018 Bristol Bay Salmon Season Summary* (Sept. 18, 2://www.adfg.alaska.gov/static/applications/dcfnewsrelease/989536277.pdf. 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 ranked first in the history of the fishery's ex-vessel value, with a preliminary estimate of \$281 million, or 242% above the 20-year average of \$116 million. [Id.] That is, until the 2021 sockeye salmon run became the largest total run on record with 66.1 million fish, [Alaska Dept. of Fish and Game, *2021 Bristol Bay Salmon Season Summary* (Sept. 29, 2://www.adfg.alaska.gov/static/applications/dcfnewsrelease/1337414316.pdf.) only to be surpassed by the 2022 sockeye salmon run of 78.3 million fish. [https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.harvestsummary.]

[Table of Bristol Bay Sockeye Salmon Returns (2012-2022) included in submission here] [Data compiled from Alaska Dept. of Fish and Game Annual Management Reports, availabl://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.salmon#management.]

In 2021, the top-grossing 10% of Bristol Bay boat fishermen got paid \$456,628 on average for their salmon, with a fleetwide average of \$184,047. [https://www.seattletimes.com/seattle-news/environment/villages-hurt-as-fishermen-from-wa-other-states-buy-lucrative-bristol-bay-permits/ (citing statistics compiled by the Alaska Commercial Fisheries Entry Commission).] These massive sockeye salmon returns support a large uptick in the region's drift permit prices. In 2021, the average selling price was \$195,400. [Id.] As of August 2022, the mean selling price of a Bristol Bay salmon drift gillnet permit for this calendar year is \$233,200. [Alaska Commercial Fisheries Entry Commission, Estimated Permit Value Report, Salmon, Drift Gillnet, Bristol Bay, availabl://www.cfec.state.ak.us/pmtvalue/X_S03T.HTM.]

For more information on the economic benefits of the Bristol Bay salmon fishery, EPA's Draft Costs Report should consider the following recent publications:

* McKinley Research Group, The Economic Benefit of Bristol Bay Salmon (February 2021), availabl://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf.

* Alaska Dept. of Fish and Game, 2021 Bristol Bay Area Annual Management Report, Fishery Management Report No. 22-14 (June 2022), availabl://www.adfg.alaska.gov/FedAidPDFs/FMR22-14.pdf.

* Rachel Donkersloot/Coastal Cultures Research, Righting the Ship: Restoring Local Fishing Access and Opportunity in Bristol Bay Salmon Fisheries, report prepared for The Nature Conservancy (July 2021), availabl://www.nature.org/content/dam/tnc/nature/en/documents/RightingTheShip_elec_20 21.pdf

* Alaska Commercial Fisheries Entry Commission, Estimated Permit Value Report, Salmon, Drift Gillnet, Bristol Bay, availabl://www.cfec.state.ak.us/pmtvalue/X_S03T.HTM.

2. Economic Value of Subsistence

The Bristol Bay watershed's streams, wetlands, and other aquatic resources support a more than 4,000-year-old subsistence-based way of life for Alaska Natives. Bristol Bay 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.

As a starting point for the economic value of subsistence use in the Nushagak and Kvichak River watersheds, a 2012 study on subsistence commissioned by BBNC showed that the vast majority of households in the region rely on subsistence fishing, hunting, and gathering for a large percentage of their food. [See enclosed BBNC Appendix D, at pp. 2269 to 2719 (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 (a study funded by BBNC) (2012)).] Given the extremely high cost of

groceries in rural Alaska, replacing the salmon harvest with store-bought meat would cost approximately \$7,500 (in 2011 dollars) for the average Alaska Native family, representing nearly 20% of the average Alaska Native household income. [Id enclosed BBNC Appendix D, at pp. 2696 to 2697 (Callaway pp. 27-28).]

3. Recreation and Sports Fishery

The discharge of dredged or fill material associated with mining the Pebble deposit will adversely impact sportfishing, given the well-documented likely adverse effects to the aquatic ecosystem and fisheries. Similarly, bear viewing would be adversely impacted, as bear habitat — both direct losses as well as reduced food availability — would be diminished as a result of the discharges associated with mining the Pebble deposit.

These activities are significant: tourism in the Bristol Bay region produced more than 2,300 seasonal jobs in Alaska and 67.9 million in labor income in 2019. [McKinley Research Group, The Economic Benefit of Bristol Bay Salmon, p. ES-3, available://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf.] More than 20,000 anglers fish recreationally in the region each year, and roughly 100 lodges and camps cater to tourists focused on sportfishing and bear viewing. [Id.] Approximately 20,000 people visited Katmai National Park and Lake Clark National Park and Preserve in 2019 to view bears, spending roughly \$20 million to do so. [Id.] An economic study of the industry estimated total business activity of approximately \$34.5 million in sales and \$10 million in direct wages and benefits from bear viewing in the region. [See enclosed BBNC Appendix D, at pp. 2167 to 2210 (Young, Taylor B. & Little, Joseph M., May 2019. The Economic Contributions of Bear Viewing in Southcentral Alaska. University of Alaska Fairbanks).]

For more information on the economic benefits of the Bristol Bay sports fishery and recreation, EPA's Draft Costs Report should consider the following recent publications (found in BBNC Comments on the 2022 PD Appendix D):

* McKinley Research Group, The Economic Benefit of Bristol Bay Salmon (February 2021).

* Young, Taylor B. & Little, Joseph M., The Economic Contributions of Bear Viewing in Southcentral Alaska (May 2019).

EPA Response

EPA agrees that the additional information on the value of subsistence benefits in the Bristol Bay community and recreational fishing benefits in general support EPA's FD. See Sections 5.2 and 5.3.1 of the Cost Document for more information about the value (and potential impacts) to subsistence and recreational fishing from the 2020 Mine Plan.

See EPA's response to comment 6.F.11 for regarding the benefits of its action, including benefits related to commercial fisheries, benefits related to recreational fisheries, and benefits related to wildlife.

6.F.18 Bristol Bay Native Corporation (BBNC) (Doc. #0832, Appendix B, pp. 11–12)

D. BRISTOL BAY NATIVE CORPORATION INVESTMENTS IN RESPONSIBLE RESOURCE DEVELOPMENT

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. In particular, BBNC 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 experience fishing in Bristol Bay. Our Katmailand Lodges – Kulik Lodge, Brooks Lodge, and Grosvenor Lodge – offer a variety of sport fishing and wildlife viewing experiences within Katmai National Park. Such developments are consistent with our Fish First policy.

In addition, BBNC works to help provide fuel to the Dillingham, Naknek, Clark's Point, and Manokotak through our subsidiary Bristol Bay Fuels. Bristol Bay Fuels is regional supplier, providing customers with home heating and bulk fuel distribution and delivery, project support, and personalized solutions to meet the growing needs of Western Alaska. [<https://bristolbayfuels.com/>]

As a corporation, we seek out opportunities for growth across the globe. We convert our profits into benefits for our shareholders in the form of dividends, economic development, employment, and educational opportunities. [<https://www.bbnc.net/our-corporation/about/>] BBNC's long-term priorities include developing prudent economic opportunities in the Bristol Bay region through strategic partnerships and leveraging of BBNC resources. [<https://www.bbnc.net/our-corporation/about/values-goals/>] To that end, as of July 2022, BBNC employs 124 shareholders across its operations, of which 114 employee-shareholders are based in Alaska with 14 either living in or commuting to work from Bristol Bay. For fiscal year to date, BBNC shareholders have earned \$5,161,379 in wages.

Another long-term priority for BBNC is to enhance shareholder workforce readiness through support of education, training, and workforce development initiatives. [<https://www.bbnc.net/our-corporation/about/values-goals/>] As such, over the past 5 years, BBNC has assisted over 600 shareholders to gain employment. BBNC also arranges and manages training opportunities, including hosting 16 interns in the past year, [<https://www.bbnc.net/for-shareholders/shareholder-development/internships/>] hosting 14 youth at Culture Camp last year, [<https://www.bbnc.net/for-shareholders/bbncculturecamp/>] enrolling 19 shareholders in our Training Without Walls Leadership Development program, [<https://www.bbnc.net/for-shareholders/shareholder-development/leadership-development/training-without-walls/>] and funding more than \$623,000 training opportunities that led to shareholder jobs in the areas of CDL, construction, IT, security, and culinary arts. Finally, BBNC invests over \$100K a year in youth, culture and education/training

programs such as the Bristol Bay Regional Career & Technical Education program, the Bristol Bay Fly Fish & Guide Academy, the Bristol Bay Ciulistet Young Leaders Program, the ANSEP Middle School Academy, the BBNA Youth Workforce Programs, and the Student Conservation Association.

These economically beneficial programs are sustained by the economic opportunities afforded to the region owing to the pristine and world-class salmon fishery.

EPA Response

See EPA’s response to comment 6.F.1 regarding impacts to local communities and economic activity.

See EPA’s response to comment 6.F.3 regarding impacts to the State of Alaska.

EPA agrees that the Bristol Bay recreational salmon fishery is an important resource, worthy of significant consideration. See EPA’s response to comment 6.F.11 regarding the benefits of its action, including benefits related to commercial fisheries, benefits related to recreational fisheries, and benefits related to wildlife.

6.F.19 Bristol Bay Native Corporation (BBNC) (Doc. #0832, Appendix B, pp. 12–13)

E. HIGH COSTS OF SALMON RESTORATION AND SALMON RUN FAILURES

Finally, EPA’s Draft Costs Report should consider available data regarding the historical high costs of salmon restoration and salmon run failures as evidenced in examples from Washington, Oregon, California, and in other regions of Alaska.

With respect to restoration, efforts to restore lost salmon populations in the United States are extremely expensive—ranging in the multiples of billions of dollars—and are largely unsuccessful. [For example, from 1997 to 2001, the U.S. spent \$1.5 billion on Columbia River salmon and steelhead restoration activities. Despite this expenditure, and many others, Columbia River Pacific Salmon populations remain on the Endangered Species Act list of threatened and endangered species. See, United States General Accounting Office. COLUMBIA RIVER BASIN SALMON AND STEELHEAD: Federal Agencies’ Recovery Responsibilities, Expenditures and Actions. Report to the Ranking Minority Member, Subcommittee on Fisheries, Wildlife, and Water, Committee on Environment and Public Works, U.S. Senate. GAO-02-612, available at: <https://www.gao.gov/assets/gao-02-612.pdf>.] The high costs of restoration efforts can be seen in response to both catastrophic events and from routine operations damaging salmon-bearing waters.

The failure of salmon runs also comes at a high cost, as unfortunately evidenced by the collapse of salmon runs in other regions in Alaska, including the Yukon, Kuskokwim, and Chignik watersheds in 2020. [See e.g., MacArthur, Federal disasters declared for 14 Alaska fisheries - Alaska Public Media (Jan. 25, 2022), available at: <https://alaskapublic.org/2022/01/25/federal-disasters-declared-for-kuskokwim-and-yukon-salmon-fisheries/>. See also, NOAA Fisheries—Fishery Disaster Assistance,

<https://www.fisheries.noaa.gov/national/funding-and-financial-services/fishery-disaster-assistance.>]

The collapse of these runs led to federal disaster declarations, which in turn open the door for significant federal expenditures to assist impacted communities. [See id.]

These massive costs can be avoided by maintaining the pristine Bristol Bay waters that support the salmon fishery. The Draft Costs Report should account for the economic benefits of protecting Bristol Bay's waters from mining the Pebble deposit by accounting for the costs of restoration avoided. Indeed, as the Draft Costs Report acknowledges the benefits of Bristol Bay's pristine waters and robust salmon population "are currently being realized and [] have been accruing for centuries." [Draft Costs Report at p. 4.]

EPA Response

EPA agrees with the commenter and has included additional discussion regarding the benefits of avoiding the potential for failure of salmon runs (see Section 5.11 of the Cost Document). Section 5.11 of the Cost Document includes a discussion of potential spill-and-dam failure risks and potential adverse impacts of a dam breach on the fishery. Hence, benefits of preventing toxic spills and dam failure include the potential avoidance of severe and irreversible damage to the fishery and the subsequent effects on the value of commercial, recreational, and subsistence fishing.

See EPA's response to comment 6.F.11 regarding other benefits of its action.

6.F.20 Competitive Enterprise Institute et al. (Doc. #0838, pp. 2–3)

The 2022 Proposed Determination would not only make certain that the Pebble Mine project won't go forward no matter the outcome of the pending appeals process at Army Corps, but it would also prejudice any future proposed mines throughout the 42,000 square mile (Indiana-sized) Bristol Bay Watershed. In so doing, it seriously jeopardizes any chance of expanding domestic production of copper, molybdenum, rare earths, and other minerals that will continue to be in high demand in the years ahead. This would be true in any event but particularly so to the extent the U.S. pursues a so-called clean energy transition in the name of addressing climate change.

EPA Response

EPA explains its CWA Section 404(c) authority and its rationale for acting now in Section 2 of the FD. See also EPA's response to comment 2.C.7.

EPA disagrees that the FD would "prejudice any future proposed mines throughout the ...Bristol Bay Watershed." EPA's CWA Section 404(c) action does not regulate mineral development. EPA's action limits USACE's ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material. Furthermore, EPA's action applies only within the Defined Area(s) described in Section 5 of the FD. See EPA's responses to comments 2.C.8, 2.C.21, 2.C.40, 5.B.32, and 6.F.1.

EPA disagrees that it did not consider the impact of the Pebble Mine’s estimated copper production on downstream copper markets and the importance of the Pebble Mine copper production to U.S. economic and clean energy infrastructure goals in its FD. EPA has considered these potential impacts in Section 6.2 of the Cost Document. In that section, EPA included estimates of copper market impacts based on statements from the PEA, commodity market research, and USGS mineral reports. EPA also described the associated uncertainty in the described market impacts in Section 4.2 of the Cost Document. EPA also generally considered the quantities of minerals that could potentially be extracted under the 2020 Mine Plan in Section 6.2 of the Cost Document.

6.F.21 Competitive Enterprise Institute et al. (Doc. #0838, p. 3)

A recent report from the International Energy Agency (IEA) finds that “a typical electric car requires six times the mineral inputs of a conventional car and an onshore wind plant requires nine times more mineral resources than a gas-fired plant.” [International Energy Agency, “The Role of Critical Minerals in Clean Energy Transitions,” March 2022, p. 5, <https://iea.blob.core.windows.net/assets/ffd2a83b-8c304e9d980a-52b6d9a86fdc/TheRoleofCriticalMineralsinCleanEnergyTransitions.pdf>.] This includes several of the minerals for which the Pebble Mine would be an important source of additional domestic supply. Of course, the extent of the increased demand for mined materials depends on the stringency of the climate change targets. The IEA finds that “our bottom-up assessment suggests that a concerted effort to reach the goals of the Paris Agreement ... would mean a quadrupling of mineral requirements for clean energy technologies by 2040. An even faster transition, to hit net-zero globally by 2050, would require six times more mineral inputs in 2040 than today.” [Ibid. at 8.] Note that net-zero by 2050 is a goal that has been embraced by the Biden Administration. [See, White House Fact Sheet, “President Biden Sets 2030 Greenhouse Gas Pollution Targets Aimed At Creating Good Paying Union Jobs And Securing U.S. Leadership on Clean Energy Technologies, April 22, 2021, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/>.]

It should be emphasized that this comment in no way endorses these or any other climate goals. Nonetheless, these goals are currently being pursued by the Biden Administration and will be rendered prohibitively costly (if not completely unachievable) without increased supplies of needed minerals.

EPA Response

EPA considered the quantities of minerals that could potentially be extracted under the 2020 Mine Plan in Section 6.2 of the Cost Document.

See EPA’s response to comment 6.F.20 regarding copper market impacts, downstream sector impacts, and clean energy infrastructure.

6.F.22 Competitive Enterprise Institute et al. (Doc. #0838, pp. 3–4)

The source of minerals supplies is also a concern. The U.S. Geological Survey’s recent report, “Mineral Commodity Summaries, 2022,” highlights the extent to which these minerals must be imported. [U.S. Geological Survey, “Mineral Commodity Summaries, 2022,” <https://pubs.usgs.gov/periodicals/mcs2022/mcs2022.pdf>.] The study notes that, “in 2021, imports made up more than one-half of the U.S. apparent consumption for 47 nonfuel mineral commodities, and the United States was 100% net import reliant for 17 of those. Of the 35 minerals or mineral material groups identified as ‘critical minerals’ published in the Federal Register on May 18, 2018 (83 FR 23295), the United States was 100% net import reliant for 14, and an additional 15 critical mineral commodities had a net import reliance greater than 50% of apparent consumption.” [Ibid. at 5.] The study further notes that America is dependent on China for the more than 50 percent of its supply of 25 different minerals.[Ibid. at 5.]

This dependence is avoidable, as the U.S. has vast deposits of many such minerals, but they are currently off limits to production. [Ned Mamula, “Federal Land Withdrawals: Endangering the Nation,” Green Watch, Capital Research Center, January 2020, <https://capitalresearch.org/article/federal-land-withdrawals-part-1/>.] The Pebble Mine would likely be the single largest addition to domestic minerals production in several decades.

The Biden Administration has repeatedly articulated the goal of predominantly domestic minerals to meet its climate objectives. For example, the recently-enacted Inflation Reduction Act of 2022 extends the \$7,500 tax credit for electric vehicles but makes the full tax credit contingent on the vehicle batteries being made with a minimum content of minerals either sourced from the U.S. or a nation for which the U.S. has a free-trade agreement. Virtually no electric vehicles made today would qualify.

Thus, the 2022 Proposed Determination would deprive the American economy of several important minerals, and is at odds with many other elements of the Biden Administration’s environmental and economic agenda.

EPA Response

EPA considered the quantities of minerals that could potentially be extracted under the 2020 Mine Plan in Section 6.2 of the Cost Document.

See EPA’s response to comment 6.F.20 regarding copper market impacts, downstream sector impacts, and clean energy infrastructure.

6.F.23 Natural Resources Defense Council (NRDC) (Doc. #0839, pp. 26–32)

Comments on how EPA Region 10 considered costs, including whether all appropriate costs have been considered.

a. EPA need not engage in a cost-benefit analysis

EPA need not engage in a cost-benefit analysis under Section 404(c) of the Clean Water Act. EPA's consideration of costs when exercising 404(c) authority became a point of contention in the Mingo Logan case. [Mingo Logan Coal Co. v. EPA, 829 F.3d 710, 719-20 (2016).] Although the majority opinion held that Mingo Logan had forfeited the argument that EPA was required to consider costs before "veto[ing]" the permit, [Id.] then-Judge Kavanaugh, in dissent, argued that EPA was obligated to consider the cost of this veto to the mining company. Judge Kavanaugh's argument, however, ignores the congressional intent evidenced by the legislative history of Section 404(c) and EPA's own interpretation of the factors it is permitted to consider—which notably does not include costs.

EPA's power under 404(c) is both wide in its discretion and narrowly focused on the environmental priorities of the Clean Water Act. Section 101 of the Clean Water Act establishes the objective to "restore and maintain the chemical, physical, and biological integrity of the Nations' waters. [42 U.S.C. §1251(a).] To achieve this objective, the Act prioritizes the goal of protecting fish, shellfish, and recreation on water. [Id. § 1251(a)(2). See also City of Alma v. United States, 744 F. Supp. 1546, 1562 (S.D.Ga.1990) ("[T]he CWA grants EPA wide discretion to employ section 404(c) as it deems appropriate.")] Section 404(c) does so, too, and notably it contains no reference to, or authority for considering, the potential economic impact of exercising 404(c) authority. Economic considerations are irrelevant and need not be considered.

Although costs need not be considered by EPA in its exercise of 404(c) authority, this factor is not completely excluded from consideration throughout the Section 404 permit application process. Appropriately, costs and economic impacts are considered by the Army Corps. The Army Corps must consider an array of factors bearing on the practicability and desirability of permitting the construction of a project – or in issuing any dredge and fill permit under section 404 – including whether the project is in the public interest. [James City County v. EPA, 12 F.3d 1330, 1336 (4th Cir. 1993).] On the other hand, EPA's authority under Section 404(c) is narrowly focused on the considerations of the adverse impacts to the environment, as evidenced by courts' interpretation of EPA's role.

For example, the Court of Appeals for the Fourth Circuit has considered the relationship between the Army Corps' role in the Section 404 permitting process and EPA's 404(c) authority. Significantly, it concluded that Section 404(c) allows EPA to consider the environment at the exclusion of other values. [Id.] Because EPA's authority to veto is based only on its obligation to protect the environment, [Id.; see also Nat'l Mining Ass'n v. Jackson, 816 F. Supp. 2d 37, 44 (D.D.C. 2011) ("The statute is... not ambiguous, as it establishes the Corps as the principal player in the permitting process, and then specifies certain roles for the EPA to play in that process. Thus, if a responsibility involving the permitting process has not been delegated to the EPA by Congress, that function is vested in the Corps as the permitting authority.")] Congress has given specific instructions about the factors EPA must consider in exercising 404(c) authority. Unenumerated factors should not be considered by EPA. The statute is clear—"Congress obviously intended the Corps of Engineers in the initial permitting process to consider the total range of factors bearing on the necessity or desirability of building a dam in the Nation's waters." James City County, 12 F.3d, at 1335. Thus, it is appropriate that cost considerations are vested in the Corps as the permitting authority, whereas the only consideration delegated to EPA by Congress are

adverse effects to the environment.] the Court of Appeals observed that EPA's authority "is practically unadorned," holding that the agency may rest its decision to intervene under Section 404(c) solely on a finding of unacceptable adverse effects to the environment. [James City County, 12 F.3d at 1336.]

Additionally, the D.C. District Court similarly concluded that "the [EPA] Administrator's exercise of discretion [as to whether to exercise 404(c) authority] must relate to whether the permit will 'have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas..., wildlife, or recreational areas.'" [Alliance to Save the Mattaponi v. United States EPA, 606 F. Supp. 2d 121, 140 (D.D.C. 2009).] Relying on any factors outside those statutorily mandated by Congress, such as the economic impact of exercising 404(c) authority, is arbitrary and capricious. [Id.] Economic factors are properly addressed by the Army Corps during the course of permitting, and are irrelevant factors for EPA to consider when considering whether to exercise its 404(c) authority.

Section 404(c)'s legislative history suggests that Congress intended the section to serve purely as an environmental check on the Army Corps' permitting authority under Section 404. An early House amendment to the bill would have given the Army Corps the power to administer the permitting of dredged or fill material without EPA oversight. Instead, the Army Corps would have been, by itself, "required to determine that the discharge would not unreasonably degrade or endanger human health, welfare, or amenities or the marine environment, ecological systems, or economic potentialities." [JOINT EXPLANATORY STATEMENT OF THE COMMITTEE OF CONFERENCE, Pub. L. No. 92-500 reprinted in 1 Legislative History of the Federal Water Pollution Control Act Amendments of 1972, at 324 (1973)(emphasis added).] That scheme for the Section 404 permit program did not survive the House and Senate conference committee. According to the conference committee report:

The conferees agree that the Administrator of the Environmental Protection Agency shall have authority to prohibit specification of a site and deny or restrict the use of any site for the disposal of any dredge or fill material which he determines will adversely affect municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. [Id. at 325.]

It was this formulation of Section 404(c) that made its way into the final version of the bill. The decision to abandon the language of economics and rest the oversight authority with EPA suggests what courts and EPA have always understood: that Section 404(c) was intended to fulfill the environmental and ecological priorities of the Clean Water Act.

EPA itself has supported the position that 404(c) mandates the consideration of only environmental factors. The agency has defined "unacceptable adverse effect" as "impact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies (including surface or ground water) or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas." [40 C.F.R. § 231.2(e).] In EPA's statement of purpose accompanying the rulemaking establishing this definition, the agency explained that:

[S]ection 404(c) does not require a balancing of environmental benefits against non-environmental costs such as the benefits of the foregone project. This view is based on the language of 404(c) which

refers only to environmental factors. The term “unacceptable” in EPA’s view refers to the significance of the adverse effect—e.g. is it a large impact and is it one that the aquatic and wetland ecosystem cannot afford. [44 Fed. Reg. 58,076, 58,078 (Oct. 9, 1979).]

EPA emphasized that “there is no requirement in 404(c) that a cost/benefit analysis be performed, and there is no suggestion in the legislative history that the word ‘unacceptable’ implies such a balancing.” [Denial or Restriction of Disposal Sites; Section 404(c) procedures, 44 Fed. Reg. 58,076, 58,078 (Oct. 9, 1979) (“When Congress intended EPA to consider costs under the Clean Water Act, it said so.”).] Indeed, Senator Muskie’s discussion of the Administrator’s responsibilities with respect to the “veto” power demonstrate the factors that Congress intended EPA to consider. “[T]he Administrator must determine that the material to be disposed of will not adversely affect the municipal water supplies, shellfish beds and fishery areas... wildlife or recreational areas in the specified cite. Should the Administrator so determine, no permit may issue.” [Conference Report and Debates reprinted in 1 Legislative History of the Water Pollution Control Act Amendments of 1972, at 177.] This requires no balancing of environmental concerns against cost considerations. [See *Creppel v. U.S. Army Corps of Engineers*, Civ. A. No. 77-25, 1988 WL 70103 at *6-*8 (E.D. La. June 29, 1988); see also Section 404(c) Procedures, 44 Fed. Reg. at 58,078 (“[I]n EPA’s view, section 404(c) does not require a balancing of environmental benefits against non-environmental costs such as the benefits of the foregone project. This view is based on the language of 404(c) which refers only to environmental factors.”).]

b. The proposed Pebble Mine is not economically feasible

Even if EPA were to engage in a cost/benefit analysis under 404(c), such an analysis weighs in favor of EPA exercising its 404(c) authority. For this analysis, it is important to identify what costs EPA would be allowed to consider. Importantly, EPA is not allowed to consider costs spent by the applicant in pursuit of a Section 404 permit. Deciding to apply for a permit, and spending money on this process, was a business expense voluntarily undertaken by PLP. Like all permittees, PLP was never assured that it would receive a Section 404 permit. Costs incurred during the process of obtaining a permit are not an appropriate consideration for a cost/benefit analysis. [C.f. *Mingo Logan*, 829 F.3d 710, 735-37 (D.C. Cir. 2016) (Kavanaugh, J., dissenting) (explaining that costs incurred in reliance on an already-granted permit are permissible costs to consider); c.f. *Central Valley Chrysler- Jeep, Inc. v. Goldstene*, 563 F. Supp. 2d 1158, 1169 (E.D. Cal. 2008) (“Environmental regulation is a constantly evolving part of the normal business landscape and Plaintiffs provide no basis for the notion that courts should insulate businesses from the consequences of business decision that are related to pending environmental regulation.”).]

The proposed mine imposes unacceptable costs on Bristol Bay and, if EPA undertakes a costs analysis, it should also consider the vastly greater costs that an economically viable mine would impose. As proposed, this mining project is not economically feasible. [Borden Decl. at p. 2.] Long-time Rio Tinto mining expert Richard Borden addressed the matter comprehensively in a seven-page comment letter to the Army Corps on March 28, 2019. [Letter from Richard K. Borden, Midgard Environmental Services, LLC, to Shane McCoy, United States Army Corps of Engineers—Alaska District (M9),

<https://www.nrdc.org/sites/default/files/mccoys-pebble-mine-economics-letter-20190328.pdf>.] His comments were informed by 23 years with Rio Tinto and his participation in more than twenty financial and technical assessments of new major capital projects and potential acquisitions. He has performed environmental and permitting work at over fifty mines, projects and operations, including over seven years as Head of Environment for Rio Tinto's Copper, Copper & Diamonds and Copper & Coal Product Groups.

Borden identified a range of significant financial factors for the current proposed Pebble Mine plan, including potential capital construction costs, operational and closure costs, water treatment costs, infrastructure funding, project ore feed and contained metal, sensitivity of the setting, and, at a conceptual level, the project's estimated net present value. He characterized the Pebble project as "an extremely large and risky capital investment" and made a number of observations significantly at odds with Pebble's assertion that the project is financially viable:

* "The EIS mine plan will make roughly 15 billion dollars less profit from the sale of concentrate than the smallest 2011 mine scenario and is likely to have a strongly negative net present value (NPV)" of \$3 billion.

* "Pebble's assumed construction costs of \$4.7 billion are anomalously low compared to other large copper mines that have been studied or built over the past five to ten years." (Borden cited, for example, Oyu Tolgoi copper mine in Mongolia (\$6.0 billion), Las Bambas copper mine in Peru (more than 7.0 billion), Cobre Panama copper mine (about \$6.0 billion), and Donlin gold mine in Alaska (\$7.0 billion).)

* "Part of the apparent discrepancy in capital cost can be attributed to the removal of \$1.3 billion in capital" based on the assumption that the transportation corridor (port and road) and the power plant would be paid through unspecified "strategic partnerships," perhaps assuming speculative public funding.

* Actual construction costs "could be significantly greater than six billion"—perhaps up to 10 billion. "In every analogue case cited above, 1) the design ore throughput is less than what was proposed in the 2011 study at Pebble, 2) the analogues in many cases are located closer to existing infrastructure, and, perhaps most importantly, 3) none of them is located in as sensitive an environmental setting as Pebble."

* "The value per ton of ore mined by the 20-year EIS plan is about 21% lower than the average ore mined in the [2011] 25-year plan. The total mass of all copper, gold and molybdenum produced is almost half. This has a profound negative impact on the likely economics of the mine being evaluated by the EIS."

* "The mine currently being evaluated in the EIS process makes \$15 billion less profit from concentrate sales. When this difference is apportioned by year and a discount rate of seven percent per year is applied, this equates to a five billion dollar reduction in NPV between the 25-year plan evaluated in 2011 and the 20-year EIS case."

* “By necessity, Pebble has proposed a very costly and complex multistage water treatment process which to my knowledge has not been attempted for such high flows anywhere else in the world. . . . Applying a seven percent discount rate to these values during operation and to the first hundred years after closure yields an NPV cost which is approximately \$400 million higher for the life of mine project than assumed in 2011.”

* “When the higher construction costs; higher operational and closure expenditures for water treatment; and much lower revenue from concentrate sales are factored into the Wardrop study’s 25-year mine plan economic evaluation, the 20-year mine plan being considered by the Pebble EIS has a negative NPV of approximately three billion dollars.”

* If the base case mine plan assumed for the EIS is not economic, then the entire permitting process risks being compromised because the impacts and risks being evaluated are much smaller than those required for a full-scale economically viable project. [Id.]

Although released only after the Army Corps denied PLP’s permit application—and a decade after its original promises—Pebble finally issued a Preliminary Economic Assessment (“PEA”) in 2021. After completing an independent technical review of that PEA, Borden concluded that the “PEA fails to meet even industry standard practice for financial evaluations and its conclusions are commonly based upon poorly supported and overly optimistic assumptions.” [Richard Borden, Midgard Environmental Services LLC, Review of the Pebble Mine Project Preliminary Economic Assessment (1), <https://www.nrdc.org/sites/default/files/pebble-mine-pea-review-20211201.pdf>.] Citing a litany of the PEA’s flawed assumptions— and comparing them with other recent mining industry PEAs—Borden characterized the proposed Pebble project as “an exceedingly risky investment.” Far from generating billions of dollars in profit as Northern Dynasty Minerals contends, Borden concluded that “it is likely that the actual project NPV is negative” and further that if short and consensus long-term metals prices returned to the values from 2019, [the project] would almost certainly have a negative NPV measured in the many hundreds of millions to multiple billions of dollars. [Id. (emphasis added).]

c. The benefits of 404(c) action to protect Bristol Bay are substantial

Any cost/benefit analysis would require EPA to consider the benefit of exercising its 404(c) authority. These benefits are significant. They include 1) the environmental benefits flowing from keeping the Bristol Bay region pristine and unpolluted, 2) the economic benefits to the commercial salmon fishery, recreational fishery, and eco-tourism industry, and 3) the benefit to Alaska Natives and all local subsistence users who rely on the fishery for food and the continuation of their culture.

EPA’s use of its 404(c) authority to protect Bristol Bay would keep the region pristine and unpolluted. Bristol Bay is the world’s most prolific wild sockeye salmon fishery and is the one of the only remaining salmon runs in the United States where fish return each year at historic levels—more than 78 million sockeye salmon this year alone. [Alaska Dep’t of Fish & Game, Bristol Bay Daily Run Summary (2022), <https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.harvestsummary>.] The watershed includes two National Parks—Katmai and Lake Clark— as well as at least 29 fish species,

more than 40 terrestrial mammal species, and 190 bird species, many of which are “essential to the structure and function of the region’s ecosystems.” [Watershed Assessment at ES-5.] By exercising its 404(c) authority to prohibit and restrict mining the Pebble deposit, the ecological damage to the region will be avoided. In fact, all of the unacceptable adverse effects discussed previously would be avoided, including: adverse impacts to salmon, water flow reduction, chemical spill damage, habitat fragmentation, risk of catastrophic mine failure, and the cumulative effects of these impacts.

In addition to the ecological benefits that 404(c) action would provide, a final 404(c) determination would benefit the commercial fishing industry—an industry that has been successfully and sustainably managed for the last 135 years. [Memorandum, Bristol Bay Native Corp., Bristol Bay and the Proposed Pebble Mine: Facts and Circumstances, at 15 (Feb. 24, 2020) [hereinafter BBNC Memorandum on Preliminary Final EIS].] The salmon fishery provides jobs for around one third of working age residents in the Bristol Bay region [About Bristol Bay, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/bristolbay/about-bristol-bay>.] and generates \$2.2 billion annually. [McKinley Research Group, The Economic Benefits of Bristol Bay Salmon (February 2021).] Sport fishing and bear viewing bring in \$77 million and \$20 million annually, while the visitor industry brings in \$67.9 million. [Id. at Exec. Summary; see also Watershed Assessment, Volume 3 Appendices E-J, at 18.] In total, the fishery supports around 15,000 jobs. [McKinley Research Group, supra, at Exec. Summary.] Mining the Pebble deposit poses the threat of wetlands loss across several watersheds, wetlands which provide vital ground water filtration for the surrounding streams that support this fishery. [BBNC Memorandum on Preliminary Final EIS, supra, at 12, 13.] Further, large-scale porphyry ore mining’s potential impacts to water quality and the destruction of regional streams and rivers will degrade salmon habitat, negatively impacting the economic viability of the salmon harvest. [Id. at 15.] Avoiding these threats to the ecological viability of the salmon fishery will benefit the commercial and recreational fishing industry, a lucrative industry providing economic opportunity for the region.

Additionally, local subsistence communities will benefit from EPA using its 404(c) authority to protect against large-scale porphyry ore mining on the Pebble deposit. Alaska Native families in the Bristol Bay region rely on salmon and other subsistence species for up to 80% of their protein sources. [About Bristol Bay, supra.] These resources are “the most consistent and the most reliable component of the local economy.” [James A. Fall, Theodore M. Krieg & Davin Holen, Alaska Dep’t of Fish and Game, Special Pub. No. BOF 2009- 07, An Overview of the Subsistence Fisheries of the Bristol Bay Management Area 2 (Nov. 2009)e at http://www.adfg.alaska.gov/specialpubs/SP2_SP2009-007.pdf.] There are twenty-five communities within the Bristol Bay region, many of which are “rural, contain many low- income households, and retain subsistence lifestyles in a mixed, subsistence cash-income economy.” [Bristol Bay Native Corp., 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, at 245 (July 1, 2019).] With the loss of salmon, the cost of living for these communities could increase so high that they could be forced to leave. The risk that the development of this mine would pose for the local subsistence communities would be alleviated by the exercise of 404(c) authority.

In sum, EPA need not consider costs in deciding whether to exercise 404(c) authority. The congressional mandate is clear: EPA may consider only the unacceptable adverse effects to the environment. However, even if EPA engaged in a cost-benefit analysis, the benefits of issuing a final 404(c) determination vastly outweigh the costs.

EPA Response

See EPA’s response to comment 6.F.1 regarding impact to local communities and economic activity.

See EPA’s response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

See EPA’s response to comment 6.F.8 regarding its obligation to consider costs.

See EPA’s response to comment 6.F.11 regarding the benefits of its action.

See EPA’s response to comment 6.F.16 regarding uncertainty of mine cost or return on investment.

See EPA’s response to comment 6.F.17 regarding subsistence.

6.F.24 Alaska Wilderness League (Doc. #1743, p. 1)

Bristol Bay is home to a \$2.2 billion annual salmon fishery that provides 15,000 jobs, supplies over 50 percent of the world’s sockeye salmon, and sustains the culture and economy of Bristol Bay Tribes and communities. For over 20 years, the proposed Pebble Mine project has threatened to destroy this incredible ecosystem. If built, this mine could poison the watershed with over 10.2 billion tons of toxic waste, devastating the last great salmon runs on Earth and wiping out thousands of jobs.

EPA Response

See EPA’s response to comment 6.F.4 regarding jobs.

See EPA’s response to comment 6.F.11 regarding the benefits of its action, including benefits related to commercial, recreational, and subsistence fisheries.

6.F.25 The Pebble Limited Partnership (PLP) (Doc. #1912, pp. 58–69)

IX. EPA’s Consideration of the Costs of this Proposed Action is Materially Inadequate

EPA asserts it is not required to consider the costs of its action under 404(c). [EPA spends no time on costs in the Revised Proposed Determination itself. See id. § 6.4. Instead, EPA includes a separate document in the docket on the consideration of potential costs. See EPA, Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Proposed Determination for the Pebble Deposit Area, Southwest Alaska, Public Comment Draft at 4 (May 2022) (“Consideration of Potential Costs”) (“Although not required, EPA has considered the potential costs of a CWA Section 404(c) action in this

instance.”].] However, EPA must consider both the costs and benefits of this proposed action under the APA and Supreme Court precedent.

It is a fundamental principle of administrative law that federal “administrative agencies are required to engage in reasoned decision making.” *Michigan v. EPA*, 576 U.S. 743, 750 (2015). To engage in reasoned decision-making, an agency must consider all of the factors that are relevant to the particular decision at issue. *Id.* In other words, an agency must consider each “important aspect of the problem.” *Motor Vehicle Mfrs.*, 463 U.S. at 43. And it must articulate a “rational connection” between the factors considered and the choice it made. *Id.*

As a general rule, the costs of an agency’s action are a relevant factor that the agency must consider before deciding whether to act. See *Michigan*, 576 U.S. at 751-52. In *Michigan v. EPA*, the Supreme Court was unanimous in articulating this principle. The Court divided 5-4 only on whether the agency had in fact considered costs. *Id.* at 765 (Kagan, J., dissenting) (“I agree with the majority – let there be no doubt about this – that EPA’s power plant regulation would be unreasonable if the Agency gave cost no thought at all.”).

An agency must consider costs because reasoned decision-making requires the agency to evaluate whether a proposed action would do more good than harm. As the Supreme Court has emphasized, the costs imposed by the agency’s action are an integral part of that calculus: “Consideration of cost reflects the understanding that reasonable regulation ordinarily requires paying attention to the advantages and the disadvantages of agency decisions.” *Id.* at 753. Contrary to EPA’s position, Section 404(c) does require the consideration of costs. The statute authorizes EPA to act only when it determines there will be an “unacceptable” adverse effect. 33 U.S.C. § 1344(c). To determine whether a particular action would have “unacceptable” consequences, there necessarily must be a balancing of costs and benefits. See *Michigan*, 576 at 752 (finding that the term “appropriate” is a broad and all-encompassing term that “naturally and traditionally includes consideration of all the relevant factors,” including costs) (quotation omitted). Thus, EPA must consider costs in evaluating whether there will be an “unacceptable” adverse effect and before exercising its Section 404(c) authority. [Even if EPA were correct that the consideration of cost is not required under 404(c), EPA chose to consider cost in this proceeding, and that analysis is therefore subject to comment and judicial review. See *Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers*, 985 F.3d 1032, 1048 (D.C. Cir. 2021) (“because the Corps chose to perform such a calculation and then relied on it throughout its analysis, it cannot dispel serious doubts about its methods by explaining that it could have forgone such a calculation in the first place”).]

EPA’s “Consideration of Potential Costs” document is woefully inadequate. EPA provides a one-sided discussion outlining, and overstating, the potential benefits of its proposed action, with only minimal attention given to concrete costs associated with its proposal. [Among the benefits of the Revised Proposed Determination listed by EPA are “non-use value,” where EPA points to polling showing opposition to the project as support for the “non- use” benefits of the Revised Proposed Determination. *Consideration of Potential Costs* at 40-42. It is unclear how such “polling” is relevant to a decision under Section 404(c). Section 404(c) requires a fact-based determination, not a popularity contest.]

Considering that EPA is proposing to restrict all future development of the world's largest undeveloped copper deposit in a 309 square mile area, one would expect that the consideration of costs of that action would be fulsome. [EPA fails to address the full cost of precluding all future development of the Pebble Deposit. EPA has proposed to prohibit the 2020 Mine Plan and to preclude all future development of the Pebble Deposit within a 309 square mile area. The Consideration of Potential Costs document focuses only on the costs associated with prohibiting the 2020 Mine Plan but fails to address the full scope and costs of EPA's drastic proposed action precluding development in the much larger 309 square mile area.] It is not. Despite ignoring many of the costs of its proposed action, EPA simply declares that the Agency "has considered the potential costs of a CWA Section 404(c) action," [Id. at 4.] with no indication of how various costs and benefits were weighed, if at all.

EPA argues that the costs of precluding development are speculative because of "the significant regulatory and financial uncertainty" regarding such development. [Id. at 5.] But if EPA believes that this regulatory and financial uncertainty makes it unlikely that the project ever gets developed, then the "benefits" of the Revised Proposed Determination are equally unlikely to come to fruition. In other words, if development of the Deposit is so uncertain, there simply is no benefit to invoking 404(c) since no harm from development will ever occur. EPA completely ignores the inconsistency in its own argument. Instead, EPA assumes that the "costs" of the Revised Proposed Determination are speculative because the project may not advance due to permitting and financing challenges, while assuming that "benefits" of the Revised Proposed Determination are assured. EPA acknowledges that this is not the standard federal agency approach to assessment of economic impacts, [Id.] but this is an understatement – EPA's assumption that the benefits of its proposed action will necessarily accrue, but that the costs may not, is a fundamentally flawed approach to cost-benefit analysis.

Moreover, EPA's underlying assumptions are belied by the record. The record demonstrates the Pebble Project would have significant, long-term economic benefits to local communities, the region, the state, and the nation. As described below, the overall economic benefits of the Pebble Project will be substantial, including increased income, employment, and educational attainment. The FEIS found significant local and state revenue, including "mining license taxes, corporate income taxes, property taxes, sales taxes, borough severances taxes, and production royalty payments." [FEIS at 4.3-10.] EPA provides no new data to contradict these findings. Instead EPA relies on speculation to downplay the costs of precluding development in a 309 square mile area. For example, EPA asserts that if Pebble is not built, then the economic benefits would just transfer to some other hypothetical business ventures elsewhere in the economy, so there is no net loss of economic benefit. [Consideration of Potential Costs at 6.] This baseless statement implies that no economic development anywhere truly creates new value because some other development could come along elsewhere. Such vague and unsupported suppositions do not reflect reasoned decision-making. EPA's failure to account for the Project's long-term beneficial impacts to the local and state economies, as well as the overall need for the resources to be gained from the Project, require withdrawal of the Revised Proposed Determination.

A. EPA Fails to Weigh the Full Costs of the Revised Proposed Determination, Including the Foregone Benefits to Local Communities

The local economic benefits of the Pebble Project are clear and much-needed. Yet EPA fails to fully account for the loss of such local benefits in evaluating the effect of its Revised Proposed Determination. If finalized, the Revised Proposed Determination would lead to the loss of five year-round jobs for Alaska Natives and numerous part time jobs available to Alaska Natives at current activity levels. As the FEIS found, the “increase in job opportunities, year- round or seasonal employment, steady income, and lower cost of living ... would have beneficial impacts on the EIS analysis area, especially for [local] communities.” [FEIS at ES 54 to ES 58.] If, however, EPA finalizes its Revised Proposed Determination it would result in the loss of hundreds of jobs that would have been available to Alaska Natives, as well as millions of dollars of contracting opportunities available to Alaska Native Corporations during construction, operation and closure of the mine. The significant revenue benefits to the local communities are undisputed: During operations, the Project would generate \$27 million annually in severances taxes for the Lake and Peninsula Borough (“LPB”), a majority of whose residents are Native Alaskans. The Project would also generate annual property tax revenue to the Kenai Peninsula Borough based on assessed value of project-related real property. [Id. at ES 48.] The project dividend payments would provide the area with significant economic development resources, as described in the attached IHS Markit Report. [Ex. 8, IHS Markit, Economic Contribution Assessment of the Proposed Pebble Project to the US National and State Economics at 17-18 (Feb. 2022) (“IHS Markit Report”).]

The FEIS fully documents the Project’s positive, long-term socioeconomic impacts in the region:

- * Communities near the mine site and ferry/port terminals would likely see a beneficial impact of higher employment rates. [FEIS at ES 47 (emphasis added).]
- * The project is likely to reduce transportation costs (thereby reducing the cost of living) to communities near the transportation corridor, should arrangements be made to allow controlled public use of the mine and port access roads and spur roads. [Id. at ES 48 (emphasis added).]
- * Communities adjacent to the natural gas pipeline . . . would have the opportunity to connect to the pipeline. For heating buildings, natural gas would be less expensive than diesel heating oil, which would lower the cost of living. [Id. at ES 53-ES 54 (emphasis added).]
- * [E]mployment through the project would have beneficial economic effects on minority and low-income communities lasting for the life of the project. [Id. at ES 53 (emphasis added).]
- * [I]ndirect employment opportunities would increase from the services that would be needed to support construction and operations activities (e.g., air services, goods, and supplies). [Id. at 4.3-5 (emphasis added).]
- * Local employment opportunities could offset current trends of outmigration in some communities and provide service fee revenue to maintain or even improve community infrastructure. [Id. at 4.3-6 to 4.3-7 (emphasis added).]

* [A]n increased revenue stream to the LPB, along with stabilization of population levels attributable to employment opportunities, . . . could result in improvements to community health care facilities throughout the borough. [Id. at 4.3-8 (emphasis added).]

* The income earned by residents close to the mine working for PLP was greater than the income earned for commercial fishing, indicating that even the limited employment during the exploratory phase had large impacts on the communities. [Id. at 4.3-10 (emphasis added).]

* [W]ages earned would likely be higher than the median household incomes of the potentially affected communities (see Section 3.3, Needs and Welfare of the People— Socioeconomics), which would be an improvement to the welfare of the community members. [Id. at 4.3-10 (emphasis added).]

* [A]n increase in tax revenue to the LPB and the education programs supported by PLP could benefit schools and the student population. In addition, local employment opportunities associated with the project could reduce population decline in some communities, which could allow schools at risk of closing to remain open. [Id. at 4.3-12 (emphasis added)]. . . It may also allow the school district to offer expanded services such as the expansion of vocational education. [Id. at ES 48 (emphasis added).]

In sum, the record demonstrates the significant, long-term socioeconomic benefits of the Project to local communities, including jobs, infrastructure, health, education and decreased cost of living. EPA fails to explain why the speculative harms to fisheries alleged in the Revised Proposed Determination are not offset by the jobs, revenue and other demonstrated benefits of the Project to local communities. The Agency's failure to account for the disparate costs on these local communities if its Revised Proposed Determination is finalized flouts its obligation to consider environmental justice in its decision-making process. See Exec. Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (Feb. 11, 1994).

EPA's assumptions about negative impacts on subsistence are unsupported. [Consideration of Potential Costs § 5.10 (assuming that Revised Proposed Determination will increase availability of fish and other subsistence resources).] Most importantly, the FEIS found no impact to fish and game resources available for subsistence harvests or commercial fisheries. [FEIS at ES 51 ("Overall, impacts to fish and wildlife would not be expected to impact harvest levels. Resources would continue to be available because no population-level decrease in resources would be anticipated."), ES 86-ES 87. In addition, EPA states that "in principle" there exists the potential for the project to impact Bristol Bay salmon prices, Consideration of Potential Costs at 21, but provides no basis for contradicting the FEIS conclusion that such price impacts were unlikely.] Similarly, while EPA asserts that the project's transportation corridor would "disrupt access to subsistence resource areas," [Id. at 42-43 (Table 5-10).] in actuality the corridor would improve access for subsistence activities. [FEIS at 4.9-7 to 4.9-8.]

EPA also claims that increased employment in the area due to the project "may also reduce the time available for subsistence." [Revised Proposed Determination at 6-24.] Local people who are employed by the Project would continue to be able to participate in subsistence-related activities because PLP committed to the use of rotational shifts. [FEIS at 5-19 ("A shift schedule would be established to enable

local employees to maximize opportunities to remain active in subsistence harvest activities.”.)] EPA’s assumption that the Project would negatively impact subsistence is directly contradicted by the FEIS, which demonstrated that high paying jobs improve subsistence success:

The effect of income on subsistence success (i.e., subsistence production) is evident among households with unique demographic structures. The magnitude of the effect of income is such that in many communities, 30 percent of households produce 70 percent of the subsistence harvest. These “super households” are distinguished because they include multiple working-age males, tend to have high incomes, and often are involved in commercial fishing. These three factors support high-producing households to be able to combine subsistence activities with paid employment and to arrange considerable labor in flexible ways that maximize harvests of subsistence foods, which are then shared with other households in the community and region. [Id. at 4.9-11. The FEIS also found that impacts on subsistence could be reduced with planned periods of leave options during subsistence harvest periods. Id. at 4.4-9.]

Despite this, EPA assumes, without support, that the Revised Proposed Determination will lead to benefits to minority communities from increased access to income from sustainable salmon fisheries. But the FEIS found no impact to the commercial fisheries. [Id. at ES 86-ES 87.] And EPA does not demonstrate otherwise. Thus, there is no basis to assume that the Revised Proposed Determination would increase local access to fisheries jobs.

The bottom line is that the Pebble Project would increase options and opportunities for local communities, while the Revised Proposed Determination forever erases one of the only avenues for employment and economic opportunities for the area. For local communities that are facing extreme unemployment and high costs of living, this is a very significant cost of the Revised Proposed Determination that has not been adequately addressed.

The significant local socioeconomic benefits of the Pebble Project are demonstrated in the record, including jobs, economic activity, tax revenues, energy and transportation infrastructure, lower cost of living, and education. EPA has failed to account for the full costs of erasing these benefits in the Revised Proposed Determination.

B. EPA Fails to Account for the Economic Costs of the Revised Proposed Determination to the State

EPA is even more dismissive with regard to the Pebble Project’s economic benefits to the State. The record demonstrates clear, significant, long-term economic benefits to local communities, the region, and the state. The FEIS found that “the project would provide long- term beneficial impacts to the economy from employment and income in the region and state.” [Id. at 4.3-10.]

EPA makes only a single, passing reference to the State’s revenue from the Project: “the 2020 Mine Plan ... would produce increased economic outcomes for the State of Alaska.” [Consideration of Potential Costs at 50 (no mention about the potential for economic opportunity to the state from using the land for mining).] EPA provides no further discussion about the potential economic opportunities and benefits that would accrue to the State and its residents. [See id.] With Alaska facing extensive public

discussions about the need to diversify the State's revenue stream, this is a major omission. The FEIS clearly documents the tax and other economic benefits of the Project:

* [A]n estimated \$64 million annually in state corporate taxes during the operations phase. It was estimated that the operations phase could also generate \$41 million annually from State mining license taxes. . . . The project could generate \$20 million annually (in 2011 dollars) in state royalty payments during the operations phase. [FEIS at 4.3-11.]

* Overall, the project would provide long-term beneficial impacts to the economy from employment and income in the region and state. [Id. at 4.3-10.]

* The project would generate \$25 million annually in state taxes during the construction phase, and an estimated \$64 million annually in state corporate taxes during the operations phase. . . . the project could generate \$20 million annually . . . in state royalty payments during the operations phase. [Id. at 4.3-11. In addition, 25% of the state royalty payments from the Project would be allocated to the Alaska Permanent Fund, see Alaska Constitution Art. IX, § 15, which means all Alaskans would benefit from the Project.]

EPA ignores these economic benefits, without explanation or justification.

EPA also ignores that the State designated the lands where the Pebble Project would be located are designated for the express purpose of mining and economic development. [FEIS at 3.2-13 ("The Bristol Bay Area Plan divides the Bristol Bay area into 20 regions with management units. The mine site would be in Region 6. The transportation corridor would be in regions 6, 8, and 10 under Alternative 1a; regions 6, 9, and 10 under Alternative 1; and regions 6, 8, and 9 under Alternative 2 and Alternative 3. At the mine site, Region 6 is designated for mineral development, among other uses; and managed to ensure that impacts to the anadromous and high-value resident fish streams are avoided, reduced, or mitigated as appropriate in the permitting processes."); id. at 4.2-5 to 4.2-6 ("The project would generally be consistent with the plan's goals for the use of subsurface resources, which call for making metallic and non-metallic minerals available to contribute to the mineral inventory and independence of the US generally and Alaska specifically, while protecting the integrity of the environment and affected cultures.").] As the FEIS provides, "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. This is demonstrated by scoping comments, which indicated a desire to bring economic opportunity and jobs to the region, as well as by policy language in the Alaska State Constitution and Alaska Statutes encouraging development of the state's mineral resources consistent with the public interest." [Id. at 1-4.] EPA's utter failure to consider the economic benefits of the Project to the State is arbitrary and unsupportable.

C. EPA Grossly Underestimates the Economic Value of the Pebble Project

The economic value of the Pebble Project is vast. As described more fully in the IHS Markit Report, the Project would involve significant contributions to Alaskan, national and other state economies:

* The Initial Phase would support 12,569 jobs across the United States, almost half of which (49%) would be filled by Alaskans. Jobs supported during the Operations Phase would receive wages totaling \$461.1 million annually under the Proposed Project and \$1,018.6 million under the potential future expansion. This indicates an annual average wage of about \$80,000; almost 40% higher than the US annual average wage of \$57,300. IHS Markit estimated direct workers in the mine would receive annual wages of \$115,000. [IHS Markit Report at 19.]

* Sourcing of fuel and supply barge activity is expected to be centered in Washington State, leading to strong economic contributions in the west coast states. [Id.]

* Purchases of specialized mining equipment is expected to flow towards midwestern states such as Illinois, resulting in over 38% of the jobs supported during the initial project phase accruing to other US regions. [Id.]

* The Pebble Project production could meet between 6.3% and 11.1% of US copper demand, translating to annual contributions between \$350 million and \$610 million in downstream copper sales and 850 to 1,500 additional jobs. [Id. at 16.]

EPA does not provide data or facts to contradict the demonstrated and vast economic benefits of the Pebble Project. Instead, EPA simply argues that the economic value of the Project is uncertain, and therefore must be discounted.

Indeed, EPA's Costs Consideration Document is replete with errors and faulty assumptions that EPA utilizes to discount the costs of its proposed action and overstate its "benefits." The following are just a few examples:

* Section 4.2 discusses uncertainty around capital estimate and economics, and seems to suggest such uncertainty means the economic benefits of the mine must be discounted. Standard practice in cost benefit evaluations is to assume the base case and then provide sensitivities for equivalent better and worse cases. EPA's approach of discounting project benefits based on uncertainty is not a valid cost benefit analysis method.

* EPA speculates that because Northern Dynasty Minerals is a Canadian company, and the project is "in close proximity to Canada," some economic benefits of the project may not accrue to the US. [Consideration of Potential Costs at 17.] But the level of economic value of the project to local, state and national economies in the US is well-established, including in the FEIS. Moreover, some of the economic benefits of any major project or commercial exercise would fall overseas – this is a global economy after all. But this does not diminish the value of the Project within the US. EPA cannot discount well-documented projections of economic benefit based on mere speculation that some other benefits may occur outside of the US.

* EPA asserts that if the Pebble Project is not built, then the economic benefits would just transfer to other business ventures elsewhere in the economy, so there is no net loss of economic benefit. But EPA does not point to a single alternative mining project in the US that would have a commensurate level of

economic benefit, it simply speculates that such projects could exist. EPA's baseless statement implies that no economic development anywhere truly creates new value.

* EPA states that the economic multiplier effects are unknown, but this is inaccurate. Economic multipliers have clearly been outlined in various venues, most recently in the IHS Global report. [IHS Markit Report at 16.]

* EPA relies on the Borden review of the Preliminary Economic Assessment ("PEA") as a basis for questioning the economic benefits of the Pebble Project. But Borden is a geologist, not an economist. Despite having no qualifications on this topic, EPA gave his input on the PEA more weight than the authors of the report who are qualified to opine on such matters. [Consideration of Potential Costs at 12.]

* In Section 6.1, EPA states that owners' costs and contingency are not considered due to the lack of regional activity that they generate. This demonstrates a lack of understanding as to what these costs are. Contingency is spent the same as any other capital and is included to address uncertainty or "known unknowns" in the estimate. Similarly, many owners' costs (e.g. regulatory compliance related activities) result in local expenditures.

EPA's lack of reasoning and evidentiary support for these points demonstrate that its motivations were not to engage in an objective analysis of the Pebble Project, but instead to bolster its decision to veto the Project.

D. EPA Fails to Consider the Economic Benefits of, and Public Need for, the Extracted Minerals

EPA provides almost no accounting for the value of the extracted minerals from the Project, including the downstream impacts. EPA states that it "expects" impacts to commodity prices of precluding this development to be "negligible," but provides no substantiation for that statement. [Id. at 50.] Considered in the context of the national and global supply chain, EPA's determination is irresponsible.

Copper "is essential to all energy transition plans. But the potential supply-demand gap is expected to be very large as the transition proceeds." [Ex. 9, IHS Markit, *The Future of Copper – Will the Looming Supply Gap Short-Circuit the Energy Transition?* at 9 (July 2022) ("IHS Future of Copper").] The Project could supply a significant portion of the country's requirements for copper, which is central to a low carbon future, as well as important minerals such as rhenium and molybdenum. The FEIS demonstrates the need for these minerals:

Rhenium is a critical mineral listed in EO 13817 that is present at the Pebble deposit ...

Mineral needs are assessed in terms of precious metals resource extraction in an international market and global context (USACE 2017). From the broad, macroeconomic scale, the stated project need is reflected in the demand for copper, gold, and molybdenum. The proposed project would result in a 20-year beneficial effect on the public's mineral needs for copper, gold, and molybdenum in this context. . . .

Copper is used in a variety of products and industries, including electrical and electronic products, industrial equipment, building construction, automobiles, and appliances. . . . The worldwide copper usage has tripled over the last 50 years and growth in the worldwide demand for copper is projected to continue (ICSG 2019).

Gold is used for the production of jewelry, electronics, and electrical components, official coins, and other uses (USGS 2005). . . . Worldwide consumption of gold grew by almost 8 percent per year between 1980 and 1999, and by an average of 2.8 percent per year between 1992 and 2002 (USGS 2005).

The most common use of molybdenum is the production of alloy steels and superalloys, enhancing hardness, strength, and resistance to corrosion. Examples of uses of these alloys include in food handling equipment, in automobile parts, in construction equipment, and in heavy construction (USGS 2010). [FEIS at 4.1-27.]

The national and global economies require copper now more than ever. Copper is critical to the transition to renewable energy sources, updating electrical grids, electric vehicles, and solar and wind energy production. [See, e.g., IHS Markit Report at 3 (“Copper is integral to micro grids and smart grids; it is vital to energy storage technologies; electric vehicles require more copper than their conventional counterparts; and it helps collect, store, and distribute solar and wind energy.”); id. at 6 (“Copper is needed at every level of the new electrical grid and is hugely important in the clean energy technologies required to respond to the global climate agenda.”); Ex. 10, RFC Ambrian, The Pathway for Copper to 2030: Copper Market Analysis at 20 (May 2022) (“RFC Ambrian Report”) (“[A]n area of significant growth for copper over the next decade will be increased demand for the decarbonisation of energy. Copper plays a central role across every stage of this by enabling renewable energy generation technologies, implementation of EV battery technology, and connection to grid.”); Ex. 11, Goldman Sachs, Green Metals: Copper is the New Oil at 1 (Apr. 13, 2021) (“Goldman Sachs Report”) (“moving the global economy toward net zero emissions remains a core driver of the structural bull market in commodities demand, in which green metals – copper in particular – are critical”); Ex. 12, Citi Research, Copper Book: 2021-2030 Outlook at 4 (Oct. 7, 2021) (“Copper consumption from the power generation, electric vehicle and grid storage sectors is set to rise by around 4.6mt over the coming decade.”).] The International Energy Agency has projected that, to achieve the Paris Climate Agreement goals, demand for copper for power lines alone will double by 2040, and overall copper demand during that time will grow by 40%. [See Int’l Energy Agency, The Role of Critical Minerals in Clean Energy Transitions at 5, 8 (March 2022), <https://iea.blob.core.windows.net/assets/ffd2a83b-8c30-4e9d-980a-52b6d9a86fdc/TheRoleofCriticalMineralsinCleanEnergyTransitions.pdf>.] And to meet that demand, currently operating or under-construction copper mines will only meet 80% of copper demand by 2030. [See id. at 11.] “As the most cost-effective conductive material, copper sits at the heart of capturing, storing and transporting these new sources of energy.” [Goldman Sachs Report at 1.] Thus, even if EPA’s estimates were valid, given the global deficit in copper supply, a 1% impact to global copper supply and 12% to U.S. copper supply, are hardly “negligible.” [See, e.g., RFC Ambrian Report at 24 (predicting a market deficit for copper of about 1.9 Mt in 2030).]

The downstream impacts of EPA's proposed action are vast, and yet are nowhere considered in the Revised Proposed Determination. Recent studies show "that by 2035 the United States will be importing between 57% and 67%—that is up to two thirds—of its copper needs." [IHS Future of Copper at 13.] If the Pebble Project is not developed, the US will have to rely on increased production overseas, including in China. Yet, EPA completely fails to consider the costs of outsourcing future mineral development to places with less robust regulatory protections than the US. EPA has been careful to bolster every possible perceived benefit of its Revised Proposed Determination and its failure to even acknowledge many of the significant costs of the Revised Proposed Determination are telling.

EPA Response

The commenter argues that EPA did not treat the benefits of the PD with the same level of uncertainty as the costs. EPA disagrees because EPA described many sources of uncertainty in the characterization of both benefits and costs. Because the costs and benefits of EPA's action are not identical, the uncertainties associated with the costs and benefits also differ. These uncertainties specific to costs or benefits and shared across both costs and benefits are described in detail in Section 4.1 of the Cost Document.

EPA disagrees that its analysis of costs "focuses only on the costs associated with prohibiting the 2020 Mine Plan." EPA expressly stated that it was considering costs and benefits related to EPA's action to "prohibit *and restrict*" certain discharges evaluated in the FD. Although there is inherently greater uncertainty about future costs and benefits of the restriction (and of the prohibition), EPA considered the ways in which more definite costs and benefits for the 2020 Mine Plan could be representative of, and thus inform, those less definite future costs and benefits. For benefits, EPA considered that, because the restriction only prevents adverse effects of future proposals to develop the Pebble deposit that are "similar or greater in nature and magnitude" to the adverse effects prevented by the recommended prohibition, then inherently the benefits from the restriction would also be expected to be similar or greater in nature and magnitude to the benefits of the prohibition. For costs, EPA considered that the types and scale of costs were similar to the types and scale of costs for previous proposals to mine the Pebble deposit. EPA also considered that, based on its present knowledge of the state of mining operations and technology, the mine site and transportation infrastructure for the 2020 Mine Plan would be expected to be representative of future efforts to mine the Pebble deposit. It is also possible that if mining technology and infrastructure evolves in the future, a future proposal to develop the Pebble deposit may not be subject to the FD. Thus, EPA considered that, based on its present knowledge, it would expect the costs for the 2020 Mine Plan to be the most representative data source for estimating costs for future efforts to mine the Pebble deposit. Commenters did not suggest alternative data sources, other than those considered by EPA, that fully supported a different analysis of the costs of EPA's restriction.

The commenter states that “the FEIS found no impact to the commercial fisheries. [Id. at ES 86-ES 87.]” To the extent the commenter is referring to the following conclusion from the FEIS “There would be no measurable change in the number of returning salmon and the historical relationship between ex-vessel values and wholesale values. In addition, there would be no changes to wholesale values or processor operations expected for Alternative 1a. Under normal operations, the Alternatives would not be expected to have a measurable effect on fish numbers and result in long-term changes to the health of the commercial fisheries in Bristol Bay,” [USACE 2020a: Executive Summary Page 87] Appendix B (Section 1 of Attachment 1) explains why this conclusion does not contradict EPA’s conclusions in the FD.

Also, as discussed in Section 5.1. of the Cost Document, although the FEIS concluded there would be minimal impacts on salmon populations, the ROD acknowledged that the 2020 Mine Plan may reduce the local portfolio effect, which, stabilizes fishery yield and commercial fishing benefits over time. The ROD also acknowledged that project modeling of potential impacts to fish populations has limitations, based on the scenarios analyzed, the assumptions made, and potential risks not considered in the analysis due to the very low probability of occurrence. Additionally, EPA does not fully agree with the description of commercial fishing impacts in the FEIS. EPA notes that the FEIS did not consider many of the limitations of the fish population model used in the analysis of fish habitat and likely underestimated the extent of the 2020 Mine Plan’s impacts (see Appendix B of the FD for additional detail). Additionally, as stated in Section 5.1 of the Cost Document, the 2020 Mine Plan’s impact on headwater streams and wetlands (which play a supporting role in local and downstream fish populations) has the potential to adversely affect salmon and other commercially harvested fish. Additional detail can be found in Section 5.1 of the Cost Document.

The commenter states that EPA’s assumptions about negative impacts on subsistence were unsupported and directly contradicted by the FEIS. EPA disagrees, and EPA’s assumptions about the negative effects on subsistence from the 2020 Mine Plan are substantiated in Section 5.2 of the Cost Document. For example, non-fish resources, such as moose, caribou, and waterfowl, comprise a significant portion of subsistence use. The FEIS, which acknowledges the displacement of these resources under the 2020 Mine Plan, supports EPA’s claim that the FD would prevent an increase in the time and expense required to harvest them. Additionally, EPA notes the possibility of positive effects on subsistence from the 2020 Mine Plan due to improved access from mine-related road construction (see Section 5.2 of the Cost Document). EPA acknowledges the uncertainty regarding the 2020 Mine Plan’s impact on subsistence users in Section 4.1 of the Cost Document.

The commenter questions EPA’s use of polling to show support for the non-use benefits of the PD, including its relevancy to a decision under CWA Section 404(c). EPA disagrees

that consideration of non-use benefits is irrelevant. EPA takes into account all relevant information available to perform a thorough analysis of the costs and benefits of the FD. EPA includes, as a component of the benefits of the FD, non-use benefits from avoided impacts to the Bristol Bay area. *Non-use values* refer to all values people hold that are not associated with the use of an ecosystem good or service (e.g., existence or bequest values). Non-use benefits stem from the public's knowledge that a healthy ecosystem in Bristol Bay (including its streams, wetlands, and other waters) is maintained. Even small non-use benefits held by a large number of individuals could result in substantial aggregate value. Thus, EPA includes opinion poll results on Alaskan's views of the Bristol Bay salmon fishery and Pebble Mine to provide a general indication of the public's interest and knowledge of the potential environmental issues associated with the 2020 Mine Plan and their preference for maintaining Bristol Bay's resources. These polls provide relevant information to EPA's FD. EPA stresses that the polling data support the existence of non-use values, but do not provide the necessary data to statistically estimate the size of these non-use values.

The commenter highlights the importance of environmental justice issues during the permitting process. EPA disagrees that the Agency disregarded its obligation to consider environmental justice in its CWA Section 404(c) review process. In implementing Executive Order 12898, titled *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, EPA evaluated environmental justice concerns and considerations with a focus on communities who practice subsistence within the SFK, NFK, and UTC watersheds (see Section 6 of the FD). As described in Section 2, EPA has conducted extensive community outreach, as well as consultations with tribal governments and ANCSA Corporations, throughout its engagement in the Bristol Bay watershed. EPA incorporated concerns expressed throughout this engagement into its environmental justice analysis, including concerns about the subsistence way of life, jobs, tax revenue, environmental impacts, and cultural impacts. For more information about environmental justice, see Section 6 of the FD. Economic-related issues are discussed in the Cost Document (referenced in Section 4.4 of the FD).

The commenter also describes potential environmental justice costs from EPA's FD because it could prevent the occurrence of economic activity from the 2020 Mine Plan (including job creation for Alaskan Natives, schooling and education benefits through the mine's stimulation of the local economy, and reduced living costs via the mine connecting remote communities to the power grid). EPA acknowledges that the FD will reduce some opportunities for steady income and employment, as well as reduce the likelihood of infrastructure and educational benefits in minority and low-income communities through direct hires and development projects by the PLP. In Sections 6.1 and 6.3 of the Cost Document, EPA discusses the employment and infrastructure estimates provided in the PEA and the FEIS. However, as discussed in Section 4.2 of the Cost Document, there is

uncertainty regarding the magnitude of the employment impacts associated with the 2020 Mine Plan due to detrimental impacts on employment supported by commercial fisheries (see Section 5.5 of the Cost Document for additional details). Because they do not consider potential lost employment to the commercial fishing industry, employment estimates from the 2020 Mine Plan are likely overstated. Therefore, although there are environmental justice costs to EPA's FD, there are also significant environmental justice benefits that weigh against those costs. See Section 5.10 of the Cost Document for additional information about the potential environmental justice impacts of the FD.

The commenter references the lack of consideration for downstream employment benefits of the 2020 Mine Plan to the U.S. economy in the PD. EPA does consider these downstream employment benefits based on statements in the PEA and the IHS Markit report, as well as data from the USGS and other academic sources. An extensive discussion of these potential impacts and associated uncertainties (e.g., some impacts would occur outside the United States due to insufficient copper refining capacity) can be found in Sections 6.2 and 4.2 of the Cost Document.

The commenter states:

Section 4.2 discusses uncertainty around capital estimate and economics, and seems to suggest such uncertainty means the economic benefits of the mine must be discounted. Standard practice in cost benefit evaluations is to assume the base case and then provide sensitivities for equivalent better and worse cases. EPA's approach of discounting project benefits based on uncertainty is not a valid cost benefit analysis method.

EPA disagrees with this assertion. EPA has followed longstanding practice and guidance in its presentation of potential costs of the FD. OMB (2003) states:

The important uncertainties connected with your regulatory decisions need to be analyzed and presented as part of the overall regulatory analysis....You should consider both the statistical variability of key elements underlying the estimates of benefits and costs...and the incomplete knowledge about the relevant relationships...By assessing the sources of uncertainty and the way in which benefit and cost estimates may be affected under plausible assumptions, you can shape your analysis to inform decision makers and the public about the effects and the uncertainties of alternative regulatory actions.

EPA presents the estimate values from the PEA and the IHS Markit report. It also, to the extent possible, characterizes the uncertainty associated with the presented estimates so that decision makers and the public can be aware of how quantified and unquantified uncertainty factors might affect the presented impact values. EPA did not have sufficient data to estimate bounds or confidence intervals or conduct quantified sensitivity analysis for the presented material presented in the PEA and the IHS Markit report, but, based on

the information presented in the reports, the types of models used, other data sources, and economic theory, it could characterize if some of the uncertainty factors would result in over- or under-estimated reported mean estimates (see Sections 4.2 and 6 of the Cost Document for additional details).

The commenter states that “EPA assumes that the ‘costs’ of the Revised Proposed Determination are speculative because the project may not advance due to permitting and financing challenges, while assuming that ‘benefits’ of the Revised Proposed Determination are assured.” EPA disagrees that it has made that assumption. As EPA states in Section 1.1 of the Cost Document, there are different amounts of uncertainty associated with the FD’s estimated costs (i.e., the forgone return from the development of the 2020 Mine Plan) and its benefits (i.e., the avoided damage to the current ecological services provided by the potentially affected watersheds). EPA does not state that the benefits of the FD are “assured.” The cost estimates for the FD carry a high level of uncertainty, in general, due to the long-term uncertainty of the profitability of the mining project. The mine must be operational, metal commodity prices must remain high, and ore quality must meet expectations, over the 25 years analyzed, to potentially result in the positive economic impacts described in Section 6 of the Cost Document, as reported in the PEA and the IHS Markit report. The avoided damage to the ecosystem, or benefits, associated with the FD are not “assured,” but the likelihood of the potential harm being done to the ecosystem is higher (i.e., more certain) than the long-term economic return to the 2020 Mine Plan. Because the ecosystem services are currently accruing, any preparation, in the short term, of the mine site and transportation corridor in association with the 2020 Mine Plan would result in ecological damages. For additional discussion see Section 1.1 of the Cost Document.

The commenter states “Borden is a geologist, not an economist. Despite having no qualification on this topic, EPA gave his input on the PEA (Kalanchey et al., 2022) more weight than the authors of the report who are qualified to opine on such matters.” EPA disagrees. Borden’s ability to assess the estimates of mineral resources used in the PEA is based on his experience as a geologist. Furthermore, EPA does not singularly rely on any one source in its determination and utilizes a diverse set of reports and documents, including information cited by the commenter.

The commenter suggests that EPA made the PD assuming all costs would represent transfers within the economy. EPA disagrees because EPA did not make this assumption in its consideration of the FD. There are economic impacts that represent losses to the local, state, and national economies, but EPA does recognize that some portion of the total impacts described in the PEA and the IHS Markit report can be considered transfers of resources that would be used in other sectors of the economies if not utilized in a mine project. Therefore, not all additional economic activity and jobs described in the PEA and the IHS Markit report would represent net losses to the economies if the 2020 Mine Plan

did not move forward. For additional detail see the discussions in Sections 1.2 and 4.2 of the Cost Document.

The commenter also states that “Region 6 is designated for mineral development, among other uses.” EPA’s CWA Section 404(c) action does not regulate mining or mineral development. EPA’s action limits USACE’s ability to specify certain waters of the United States as disposal site for certain discharges of dredged or fill material (See Section 2 of the FD). However, EPA considered that its action could prevent the mineral development of the Pebble deposit. EPA also considered that by preventing such mining, there could be consequences to the State of Alaska. See Section 6 of the Cost Document.

Note, the commenter cites language from Section 6 of the FD, which has been revised since the PD.

See EPA’s response to comment 6.F.1 regarding impact to local communities and economic activity.

See EPA’s response to comment 6.F.3 regarding impacts to the State of Alaska.

See EPA’s response to comment 6.F.4 regarding jobs.

See EPA’s response to comment 6.F.5 regarding tax revenue.

See EPA’s response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

See EPA’s response to comment 6.F.8 regarding its obligation to consider costs.

See EPA’s response to comment 6.F.10 regarding improper estimation of costs and benefits.

See EPA’s response to comment 6.F.20 regarding copper market impacts, downstream sector impacts, and clean energy infrastructure.

See EPA’s response to comment 6.F.16 regarding uncertainty of mine cost or return on investment.

6.F.26 Cook Inlet Tug & Barge, LLC (Doc. #1987, p. 1)

*** Resource development projects create jobs, economic activity, and revenue for the state of Alaska. This is especially important for communities closest to projects that have few year-round jobs and face extremely high costs of living.**

**** A preemptive veto like EPA is proposing would seriously jeopardize the potential for thousands of jobs created, hundreds of millions of dollars in economic activity generated, and prevent important and needed contributions to the state and local government in Alaska.**

EPA Response

See EPA's response to comment 6.F.1 regarding impact to local communities and economic activity.

See EPA's response to comment 6.F.3 regarding impacts to the State of Alaska.

See EPA's response to comment 6.F.4 regarding jobs.

See EPA's response to comment 6.F.5 regarding tax revenue.

6.F.27 Mass Mailing Campaign (Doc. #2554, p. 1)

The proposed determination intentionally elevates one resource at the expense of another rather than working within Alaska's long-standing environmental framework of co-existence among industries.

EPA Response

See EPA's response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

6.F.28 Mass Mailing Campaign (Doc. #2555, p. 1)

EPA's proposed determination lacks any acknowledgement of the significant economic contribution the Pebble Project could bring Alaska overall and the people of the region, where the cost of living is extremely high and employment options are few.

Each year during operations, the EIS forecasts that the Project will generate \$64 million in state corporate taxes, \$41 million in state mining license taxes, \$20 million in state royalty taxes, and \$27 million in local severance taxes (4.3-11). The EPA action takes none of this into account, especially the positive impact this could have for the communities around Iliamna Lake.

The Deposit is a true asset for the state of Alaska that will increase revenue, create year-round jobs for Alaskans, and offer much-needed stimulus for Alaska's economy.

EPA Response

See EPA's response to comment 6.F.1 regarding impact to local communities and economic activity.

See EPA's response to comment 6.F.3 regarding impacts to the State of Alaska.

See EPA's response to comment 6.F.4 regarding jobs.

See EPA's response to comment 6.F.5 regarding tax revenue.

6.F.29 City of Dillingham (Doc. #2667-1, p. 16)

In 2006, the year that I was elected as Mayor, the city restated our position on the Pebble Mine. We were certain at that time that it would put our wild salmon fishery, then valued at \$100 million annually, at risk. Today, 17 years later, and still sitting in the - as the Office of Mayor, we're expressing that same position. We're, we're strongly opposed to the Pebble Mine. In 2019, the McKinley Research Group produced a report that estimated our salmon fishery at a value of \$2 billion.

(...)

So we're really proud that the value of our fishery has increased, and that the industry continues to grow. The growth is not an accident. The growth reflects the commitment and the effort of the people and organizations involved. And we're even more committed now to protecting that industry from the huge risk presented by largescale mining in the very waters that assure our industry, our economy, and our future.

EPA Response

See EPA's response to comment 6.F.11 regarding the benefits of its action, including benefits related to commercial fisheries.

6.F.30 Pebble Project (Doc. #2664-1, p. 3)

EPA gives basically no support to the very positive social and economic impacts of the project that's discussed in the federal and environmental impact statement. They even find that jobs could actually be a negative for natives because of cultural values and subsistence. This is nonsense.

EPA Response

See EPA's response to comment 6.F.4 regarding jobs.

See EPA's response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

See EPA's response to comment 6.F.25 regarding the effect of its action on employment for Alaskan Natives.

6.F.31 Associated General Contractors of Alaska (Doc. #2664-16, p. 14)

At AGC, we don't represent any specific industry, we advocate instead for a healthy economy, responsible environmental developmental partnerships, and proper legal and well-established permitting and review processes. We advocate for these things because when the economy is healthy, so is the construction industry. This preemptive proposed action by the environmental protection agency would set a precedent for future resource development projects. The determination of any project including Pebble cannot ignore the consideration of complete economic social and environmental

impacts. Furthermore, the EPA was in full participant in the environmental impact statement process for the Pebble project over the course of three years and never raised objections of the scale.

(...)

Our state's economy is dependent on responsible resource development to prosper, it is crucial to have a predictable and efficient federal and state permitting process that is based in concrete science. The appropriate process will not permit one industry or resource to advance at the expense of another. Fishing and fisheries habitats can and do coexist with resource development. This is an opportunity for economic and communal prosperity on multiple fronts, with the mining and fishing industries working together. Alaska has a robust history of balancing environmental protection and resource development. In conclusion, AGC does not have a position on the Pebble project specifically, but rather a position of support for a fair and consistent review process.

EPA Response

To the extent that the commenter asserts that EPA's use of CWA Section 404(c) injects uncertainty into the regulatory process, EPA disagrees. See Section 2 of the FD and EPA's response to comment 2.C.13 for discussion of how the FD promotes regulatory certainty.

See EPA's response to comment 6.F.3 regarding impacts to the State of Alaska.

See EPA's response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

6.F.32 Bryce (Doc. #2664-46, p. 33)

There's a currently existing multibillion dollar fishing industry that has been proven in the most recent environmental impact studies to show that if there was a dam failure of multiple kinds, that it would be detrimental to this existing fishery and that the placement of this proposed mine couldn't be in a worse place for the Bristol Bay watershed, an otherwise pristine watershed that does feed millions of people and supplies thousands of jobs annually. I do hope that you evaluate the proposed plan as well as an economic feasibility study because really the only economic way to do this mine is to be very, very detrimental to the ecosystem within the region as well as the watershed. I really hope you look at the economic feasibility study.

EPA Response

EPA has included a description of the adverse impact that a dam failure would have on Bristol Bay's commercial fisheries (see Section 5.11 of the Cost Document). Also, see EPA's response to comment 6.D.1 about dam failure impacts.

See EPA's response to comment 6.F.4 regarding jobs.

See EPA's response to comment 6.F.11 regarding the benefits of its action, including benefits related to commercial, recreational, and subsistence fisheries.

See EPA's response to comment 6.F.11 regarding the benefits of avoiding the potential for failure of salmon runs.

6.F.33 Chasity Anelon (Doc. #2666-1, pp. 10–11)

I have been working for Pebble since 2009, and I'm very grateful to have a job. And you come to Iliamna, and you see that there's very little opportunities living here, and it's hard to, you know, be able to pay for everything. And so, I have a daughter, as well. And because I've had a job, I've been able to build a house, and be able to sustain my family to live in rural Alaska. And it's - I love Iliamna. I want my daughter to do everything that I'm able to do - fish, hunting, getting - going and doing other subsistence stuff. But you also need a boat, and a motor - that costs money; it's not free. And gas. Gas is \$7.69 a gallon right now. It's very expensive to fuel up. And at - nobody else is coming to give us jobs, so I feel like it's really important to have a job here - unless - if we don't a job, I'd probably be gone, or living somewhere else to try to work, to support my family.

EPA Response

See EPA's response to comment 6.F.1 regarding impact to local communities and economic activity.

See EPA's response to comment 6.F.4 regarding jobs.

6.F.34 David Park (Doc. #2666-4, pp. 15–16)

And with the, the jobs here - you know, there's kids that are coming back to the village, that they can't afford to live in Anchorage no more, 'cause of skyrocketing rent, fuel, and gas, and cars. And they're coming back and moving into their families, with nine, 10, 11, 12 kids to a house, plus their husbands and wives. And the problem here is not here. It's - everybody knows it's out in the ocean. But nobody cares about out there, 'cause they don't have control over the trollers, and what people catch in other countries. All they cry about is Bristol Bay, Newhalen, Iliamna, Pebble, and APC, and down the chain.

Corporations here have things that they wanted developed. And the biggest majority of people that are crying about it are the lodge owners, the canneries, because they control Alaska now. And you guys have to open up you guys' eyes and see that. People need work. You know, we're going to the store, and we're buying less, and less, and less because of skyrocket prices, and it's everywhere. And we have the resources in Alaska. And everybody has done their homework, thousands and thousands of times, just to make sure everything worked. You know, we're always going to have problems with things going forward. But it always can be fixed before it gets worse, and that's what people don't like.

EPA Response

See EPA's response to comment 6.F.1 regarding impact to local communities and economic activity.

See EPA's response to comment 6.F.4 regarding jobs.

See EPA's response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

6.F.35 Nancy LaPorte (Doc. #2666-10, pp. 28–29)

[W]atching the people that have had jobs with Pebble over the years - and we see it; we've been here since 1970 - we feel a part of this community. We love the people in our communities here. We have seen those that have worked, had the pride of buying things, and doing things for their family. I had one lady come to the counter one day that said, 'You know, this is the first time,' and she was working for Pebble, 'I've ever been able to go to town and ask my kids, 'What would you like me to buy for you?' It's always been, 'This is what you need.'" And she said, 'Finally, I have money that I can go in and spend.'

We saw people bringing household goods out that normally would not be bought - freezers, refrigerators, things that they needed in the community. The job market here is very poor for people having money. And as we see it, Everett's is now gone, Northern Air is gone. We're losing a lot of the transportation here, in and out of the village. It's getting more and more expensive to try to support the communities here. Gas is at an all-time high, as we all know. It, it's really hard for them to make a living, and for us to be able to support, and doing it as low as we can on prices and that, to support our locals.

As far as lodges, and guides and that - you can almost count them on your hands, how many hire local. They do not hire local people here. They bring people in for the summer; they're gone. You don't see them in the winter. You don't see them supporting our communities in ways that our people need to be supported. And we really appreciate what Pebble has done in the community whenever they were here and active. They were very, very present, and the people that were working for them were very proud of their jobs.

EPA Response

See EPA's response to comment 6.F.1 regarding impact to local communities and economic activity.

See EPA's response to comment 6.F.4 regarding jobs.

See EPA's response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

6.F.36 Alaska Department of Environmental Conservation (Doc. #0814, pp. 18–20)

Mining projects in Alaska often create new jobs in remote areas where employment opportunities are otherwise limited. These jobs are fillable, in part, by Alaska Natives living in the region. For example, 52% of the year-round jobs at the Red Dog Mine were filled by shareholders of an Alaska Native Corporation, NANA [The name NANA derives from the predecessor organization Northwest Arctic Native Association.]; 47% of the seasonal and full-time employees and contractor hires at Upper Kobuk Minerals Project were filled by NANA shareholders; and 54% of jobs at the Donlin Gold mine were filled

by Alaska Native shareholders or descendants, largely from the Calista Corporation region. [McKinley Research Group, *The Economics Benefits of Alaska's Mining Industry* (May 2022), at 41.] Given the lifespan of mines, jobs like these can support three generations of locals.

Large mining projects in remote areas can ensure the availability of education. Alaska schools have a minimum-enrollment requirement of 10 students. As people move from rural to urban areas— a growing trend, particularly as temperatures rise, permafrost thaws, and riverbanks erode—schools are at increased risk of shutting down for failure to meet the minimum-enrollment requirement.

Economically stimulating an area with an industry that hires locals will keep locals, and families, around—helping to meet minimum-enrollment requirements, and keep schools open.

Additionally, a large mine can connect remote communities to the power grid. As a result of increased connectivity, the cost of living—exorbitantly high for remote Alaska communities [Fuel in the village of Noatak rose to \$16.00/gallon earlier this year. See Z. Hughes, *Fuel in the Alaska Village of Noatak was \$16 a Gallon. The Costs are More Than Just Money.*, retrieved from <https://www.adn.com/alaska-news/rural-alaska/2022/05/18/fuel-in-the-alaska-village-of-noatak-was-16-a-gallon-the-costs-are-more-than-just-money/>.]—could be reduced.

EPA Response

See EPA's response to comment 6.F.1 regarding impact to local communities and economic activity.

See EPA's response to comment 6.F.4 regarding jobs.

See EPA's response to comment 6.F.25 regarding the effect of its action on employment for Alaskan Natives.

6.F.37 Alaska Wildlife Alliance (AWA) (Doc. #0836, pp. 3–4)

Turning to economic importance, Bristol Bay's intact habitat and robust wildlife is a significant source of revenue. Considering the commercial, sport and subsistence fishing industries, sport and subsistence hunting industries, and non-consumptive recreation (e.g. wildlife viewing and tourism), the ecological resources of the Bristol Bay watershed generated nearly \$480 million in direct economic expenditures and sales in 2009, and provided employment for over 14,000 full- and part-time workers (EPA, *About Bristol Bay*). A recent study by the McKinley Research Group entitled *The Economic Benefits of Bristol Bay Salmon* estimates that Bristol Bay's commercial salmon industry alone generated \$2 billion in economic benefit and an average of 15,000 jobs in 2019. Revenues from the commercial fishery include a share of the Fisheries Business Tax to Bristol Bay communities (McKinley Research Group. 2021). A third of the Bristol Bay Borough's total revenue came from that share in 2019.

The Borough also uses a Raw Fish tax to pay for sewer upgrades and repairs. The Lake and Peninsula Borough also collects a Raw Fish tax. Unlike the two boroughs, Dillingham does not have a raw fish tax. But the city has reported a three year average of \$617,000 from the Fisheries Business Tax.

EPA Response

Comment 6.F.37 states that the Bristol Bay watershed's salmon-based ecosystem provides a significant source of employment opportunities and revenue to local communities through the commercial and sport fishing industries, subsistence fishing and hunting, non-consumptive tourism and recreation (i.e., wildlife viewing), and the Fisheries Business Tax. EPA agrees with the importance and high value of the ecosystem services that Bristol Bay's aquatic resources provides to local communities. EPA also agrees that the FD is likely to benefit minority and low-income communities by sustaining income and employment opportunities stemming from salmon fisheries (e.g., via the protection of commercial and recreational harvests). In response to this and other public comments, EPA expanded its discussion of the value and importance of subsistence harvest (Section 5.2 of the Cost Document), the Fisheries Business Tax (Section 5.1 of the Cost Document), and employment and revenue impacts of commercial and recreation fisheries and non-consumptive tourism and recreation (Sections 5.1 and 5.3 of the Cost Document).

6.F.38 Pebble Project (Doc. #0817, p. 1)

Environmental Justice- In the Biden administration there has been a renewed effort to emphasize Environmental Justice issues during the permitting process. The RPD violates the intent of that policy. If EPA achieves its ambition of stopping Pebble, five Alaska Natives will lose full-time positions and many Alaska Natives will lose the opportunity for part time employment during our active summer work season. In addition, hundreds of Alaska Natives will lose the opportunity for jobs averaging over \$100,000 should the mine go into the construction and operations phases. These jobs would be largely located in the Iliamna Lake region, an area of Alaska that is seriously economically depressed.

Much of my 57-year career in Alaska has been working to develop economic opportunities for Alaska Natives living in the rural parts of the state where, for the most part, there are very few economic opportunities. When I took the position of CEO of Pebble in 2008, I did it because of my experience working for NANA Regional Corporation on the development of the Red Dog Mine at which the Alaska Native hire rate has exceeded 50% since the beginning of the mine's operation in 1989. My interest in Pebble was to see if the mine could be developed in an environmentally sound manner so that jobs could be made available in an economically depressed area populated largely by Alaska Natives. The Final Environmental Impact Statement proves that the mine can be developed in an environmentally sound manner.

Thus, EPA needs to explain why the loss of economic opportunities for Alaska Natives who are currently employed by Pebble and those who could be employed in future years does not violate the principles of their Environmental Justice Policy.

EPA Response

See EPA's response to comment 6.F.1 regarding impact to local communities and economic activity.

See EPA's response to comment 6.F.4 regarding jobs.

See EPA's response to comment 6.F.7 regarding its alternative basis that includes consideration of costs.

See EPA's response to comment 6.F.25 regarding the effect of its action on employment for Alaskan Natives.

6.F.39 Bristol Bay Regional Seafood Development Association (BBRSDA) (Doc. #2062, pp. 2–3, 3–6)

Concerns about the severe damage that the Pebble mine could cause to consumer perception are well-founded. Consumer research presented by the Alaska Seafood Marketing Institute shows that health perceptions and low chemical content are the top two benefits consumers identify to support their preference of wild-caught versus farm-raised seafood (see Exhibit 3. [<https://www.alaskaseafood.org/wp-content/uploads/FOR-WEB-Datassential-Alaska-Seafood-Consumer-Research-1.pdf>] (Slide 19).] The reality and perception of healthy fish from a pristine habitat are principal reasons why sockeye salmon, most of which comes from Bristol Bay, fetches a price far above farmed Atlantic salmon. Without that price premium, there is no commercial salmon fishery. The mere existence of a large copper mine with a massive and persistent tailings storage facility in the Bristol Bay headwaters is enough cause for concern. But even worse, if anything were to go wrong with the mine, then beyond the ecological concerns the economic damage caused from changes to consumer perception alone would put the entire commercial fishery at grave risk.

Therefore, the proposed Pebble Mine creates an existential risk for an existing, successful, sustainable, and much larger economic resource. While it is nice to hope that large scale mining can coexist with abundant salmon runs, there is no evidence to support such a notion.

Indeed, the risks associated with negative impacts to consumer perception from this mine have been studied in connection with the Army Corps' Draft Environmental Impact Analyses. [<https://www.dropbox.com/s/d3l4zuhcat1huep/Jardine%20Report%20Final.pdf?dl=0>] Dr. Sunny Jardin listed several examples where environmental impacts did lead to significant adverse effects on consumer behavior and demand (see Attachment B – Jardine Comments on the economic analysis in the Pebble Project DEIS). These impacts on consumer behavior would likely extend to wild sockeye in general due to the immense scale of Bristol Bay's sockeye production.

Further, the proposed Pebble Mine puts many other Alaska seafood species at risk. Most of the seafood produced in Alaska comes from the Bering Sea and adjacent waters, which is all technically downstream of the proposed Pebble Mine. Many consumers who place a premium value on Alaska seafood due to its pristine habitat are likely to apply any negative perceptions of the Pebble Mine development to other

Alaska seafood products, even if they are caught far away from Bristol Bay. As noted in Dr. Jardine's research, there is precedent for spillover effects to adversely impact consumer demand for other sources of wild Alaska seafood, even outside of Bristol Bay. The Alaska seafood industry as a whole is a key economic sector in well over a dozen Alaska communities, and could face hardships due to spillover effects of negative consumer perception. These risks ought to be considered in any analysis of development projects.

EPA Response

See EPA's response to comment 6.F.11 regarding the benefits of its action, including benefits related to commercial fisheries.

TOPIC 7. COMMENTS ON APPENDIX A OF THE PROPOSED DETERMINATION

7.0 Key Changes from the 2014 Proposed Determination

7.0.1 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, pp. 6–7)

4. The 2022 PD omits any comparison of the limits on potentially allowable adverse effects under the 2022 PD to those of the 2014 PD.

The second part of the 2022 PD would restrict future mine plans for the Pebble deposit and would increase, by as much as five fold compared to the 2014 PD, the levels of four types of potentially allowable adverse effects (or limits) that would trigger the restrictions. The following table compares the limits of the 2014 PD to those of the 2022 PD.

[Comparison Table of Proposed Limits of the 2014 PD to the 2022 PD included in submission here]

The limits on future mine plans are a critical aspect, if not the most crucial aspect, of the 2022 PD. Its higher limits allow PLP- or whoever in the future owns or controls mineral interests at the Pebble deposit - to revise the mine plan to be under the proposed limits, apply for and obtain a discharge permit under a future federal administration favorable to Pebble mine, and then proceed toward building it. That is the ultimate consequence of the 2022 PD when it states that it provides such "clarity to the regulated community." 2022 PD at 2-19.

Appendix A in the 2022 PD is styled as a "Summary of Key Changes from the 2014 Proposed Determination." One would expect Appendix A to make the above comparison and explain why EPA has increased the limits on potentially allowable effects over those of the 2014 PD. However, Appendix A omits that comparison and offers no such explanation. In fact, the entire 2022 PD omits that comparison and explanation. Hardly the transparency EPA claims.

Moreover, the 2022 PD omits any express statements of the limits in either the 2022 PD or the 2014 PD used to restrict future mine plans for the Pebble deposit. Instead, Section 5 of the 2022 PD states that EPA would restrict "any future plan to mine the Pebble deposit that would either individually or collectively result in adverse effects similar or greater in nature and magnitude to those [of the 2020 Mine Plan] described in Sections 4.2.1 through 4.2.4 of the 2022 Proposed Determination." 2022 PD at ES-13 and 5-2. So, the reader must review Sections 4.2.1 through 4.2.4 on the 2020 Mine Plan to determine the limits that would trigger some unspecified restriction of future mine plans. That is an unnecessarily oblique, opaque, complicated, and counterproductive way of stating proposed limits so

that the public can comment. EPA should have simply stated the proposed limits in Section 5 of the 2022 PD, as EPA did in Section 5 of the 2014 PD.

When the 2022 PD omits a comparison of the limits of the 2022 PD to the 2014 PD, and omits express statements of the limits in the 2022 PD and the 2014 PD, EPA frustrates the ability of the press and the public to (1) make that comparison, (2) make informed comments on the 2022 PD, and (3) understand that the 2022 PD is likely to result in a revised mine plan within the increased limits and a permit for Pebble mine under a future federal administration.

The failure of the 2022 PD to state, compare, and explain the increase in the limits in the 2022 PD compared to the 2014 PD taints EPA Administrator Regan. EPA's press release of May 25, 2022 says he declared that "EPA is committed to ... a transparent public process." The 2022 PD is not transparent. It fails to inform the public, including the press, that the 2022 PD increases the limits on potentially allowable adverse effects over those of the 2014 PD and does so to levels that appear to allow a revised plan to be permitted under a future federal administration. Those increased levels are so tainted by error, omission, and posturing that EPA must abandon them in favor of stricter limits based on the science, facts, precautionary approach in fisheries management, good judgment, and case law. Moreover, the combination of (a) EPA's increased limits on potentially allowable adverse effects in the 2022 PD applicable to future plans to mine the Pebble deposit, and (b) the legislative ideas which circulated in 2021 and 2022, compels EPA to abandon its increased limits in favor of stricter ones. Otherwise, "those who never change their minds, never change anything" - George Bernard Shaw per Winston Churchill. [The quote is widely interpreted as meaning that leaders must learn new things they didn't know before.]

EPA Response

EPA does not regulate mining and its intent is not to preclude development of the Pebble deposit. Rather, CWA Section 404(c) authorizes EPA to prohibit the specification of or restrict the use for specification of any defined area as a disposal site for discharges of dredged or fill material into waters of the United States if the discharges would have an unacceptable adverse effect on enumerated water resources. Section 4 of the FD provides the basis for EPA's determination that certain discharges of dredged or fill material from developing the Pebble deposit will have unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds. Section 5 of the FD describes the defined area for prohibition and the defined area for restriction, within which EPA's action limits USACE's ability to specify certain waters of the United States as disposal sites for certain discharges of dredged or fill material associated with developing the Pebble deposit. Section 5 of the FD also identifies the discharges that would be subject to the prohibition and restriction and further clarifies how EPA will evaluate the applicability of the FD.

EPA did not draw a dividing line under which impacts to water resources are considered acceptable and Section 5 of the FD also makes clear that "[p]roposals to discharge

dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to [the FD] remain subject to all statutory and regulatory authorities and requirements under CWA Section 404.” See also EPA’s response to comment 7.0.2.

Although EPA relies on a well-supported scientific and technical record that spans decades, including information that supported the 2014 Proposed Determination, the scientific and technical record has substantially evolved since 2014 and includes, among other things, a proposed mine plan (e.g., the 2020 Mine Plan) and information developed during the NEPA and CWA Section 404 permit review processes. As explained in Appendix A of the 2022 PD, the 2020 Mine Plan is based on new assumptions, higher resolution aquatic resource mapping, additional environmental baseline data (PLP 2018a) and water resource impact information (i.e., analyses included in the FEIS), and more sophisticated water resource modeling than were considered in the 2014 Proposed Determination. EPA determined that it was appropriate to develop the 2022 PD using the most current information available to EPA, including the 2020 Mine Plan and the FEIS.

EPA engaged in a new, open, and transparent CWA 404(c) review process, consistent with EPA’s CWA Section 404(c) regulations. EPA’s 2022 PD, on which the Agency sought public comment, was issued after a new 15-day letter and was a new document based on an extensive and carefully considered record. The administrative record supports EPA’s FD.

Appendix A of the 2022 PD was not designed to provide an exhaustive comparison between the 2014 and 2022 PDs. The purpose of Appendix A of the 2022 PD was to provide the public with sufficient information about the nature of the prohibition and restriction proposed in the 2022 PD.

EPA is exercising its authority under Section 404(c) of the CWA and its implementation regulations at 40 CFR Part 231. Whether or how “legislative ideas” would interact with EPA’s action are beyond the scope of this action.

7.0.2 Ekwok Village Council (EVC) and Bristol Bay Fishermen’s Association (Doc. #0194, pp. 7–8)

5. The 2022 PD omits any explanation for increasing the limits over those of the 2014 PD.

The Ninth Circuit’s decision in *Trout Unlimited v. Pirzadeh*, 1 F.4th 738 (9th Cir. 2021) concluded that under EPA’s regulations at 40 CFR 231.5(a), EPA is authorized to withdraw a proposed determination “only if the discharge of materials would be unlikely to have an unacceptable adverse effect.” 1 F.4th at 757 (*italics original*). The Court explained:

Whether “unacceptable” adverse effects are “likely” is a flexible standard that draws considerably on the agency’s expertise and judgment. Cf. 44 Fed. Reg. at 58078 (“[W]hat is required is a reasonable

likelihood that unacceptable adverse effects will occur-not absolute certainty but more than mere guesswork.").

1 F.4th at 759 (emphasis added).

With respect to the limits on allowable harms that trigger restriction on future mine plans under the 2022 PD, it omits any explanation of --

(1) why EPA is increasing the limits over those in the 2014 PD, and

(2) why the limits in the 2022 PD are based on the 2020 Mine Plan, instead of the levels of harm likely to cause unacceptable adverse effects based science, facts, the precautionary approach in fisheries management, good judgment, and the case law.

For three reasons, EPA should explain why it is proposing to increase the limits and base them on the 2020 Mine Plan. First, BBFA and EVC show in their initial comments of June 10, 2022 that the 2022 PD could have relied on the professional literature to support limits stricter than those proposed in either the 2014 PD or the 2022 PD. EVC and BBFA's initial comments show that the 2022 PD --

(1) cites to numerous professional articles which collectively catalog the progress science has made related to how fine-scale habitat diversity creates fine-scale genetic diversity and fine-scale population structure which results in the portfolio effect that stabilizes salmon returns; and
(2) indicates that the progress in the science, such as the finding that sockeye populations are likely distinct when spawning sites are as little as 0.6 miles apart, and the expected continued progress along those lines, support stricter limits on adverse effects rather than more liberal limits on adverse effects.

Second, EVC and BBFA showed in their petition in 2021 that EPA could have relied on carefully tailored prohibitions similar to those in the state's 2013 Bristol Bay Area Plan.

Third, my letter of June 23, 2022 explains that --

(1) the record provides no scientific support for using the levels of harms of the 2020 Mine Plan as a dividing line that separates unacceptable adverse effects (those which meet or exceed the adverse effects of the 2020 Mine Plan) from potentially acceptable adverse effects (those which do not meet or exceed the adverse effects of the 2020 Mine Plan); and

(2) such a dividing line lacks a rational connection to the factual findings about the portfolio effect and is contrary to those findings because they stress the importance of maintaining habitat diversity, genetic diversity, and population structure at far finer scales than the levels of harm caused by the 2020 Mine Plan.

EPA Response

See EPA's response to comment 7.0.1. EPA has reviewed the information that the commenter provided and finds that it supports EPA's finding of unacceptable adverse effects from the 2020 Mine Plan. However, EPA's FD does not use "the levels of harms of

the 2020 Mine Plan as a dividing line that separates unacceptable adverse effects... from potentially acceptable adverse effects.” Section 5 of the FD makes it clear that “[p]roposals to discharge dredged or fill material into waters of the United States associated with mining the Pebble deposit that are not subject to this determination remain subject to all statutory and regulatory authorities and requirements under CWA Section 404.”

7.0.3 Molly Dishner (Doc. #2664-40, p. 30)

As far as the substantive protections themselves, I do support 404C protections for Bristol Bay like pretty much everyone I have heard from, but I would encourage you to make them stronger than the current proposed determination. I think you could look back to the 2014 proposed determination and incorporate a little more of that and that would be beneficial. I think no one in the region wants to see a determination that what Pebble ever find a loophole. I think people just want this done. They want the headwaters off limits for mining so the full Upper Talarik Creek and north and south [inaudible 02:31:58] watersheds should be protected.

EPA Response

See EPA’s response to comment 7.0.1. Although EPA did not draw a dividing line under which impacts to water resources are considered acceptable, the discharges that are subject to the FD are limited to those that EPA evaluated. See EPA’s response to comment 4.B.27.

7.0.4 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0194, pp. 8–9)

6. Unlike the 2014 PD, the 2022 PD omits informing the public that proposals to mine the Pebble deposit which have impacts below the limits in the 2022 PD would proceed in the normal permitting process.

The 2014 PD stated that proposals to mine the Pebble deposit which have impacts below the limits in the 2014 PD "would proceed to the Section 404 permitting process" of the U.S. Army Corps of Engineers. 2014 PD at ES-7 and 5-1.

The 2022 PD omits any effort to inform the public that a revised mine plan having impacts below the increased limits in the 2022 PD would proceed in the normal permitting process. The omission is critical because PLP - or whoever in the future owns or controls mineral interests at the Pebble deposit - is likely to revise the mine plan to be under the proposed limits, and then apply for and obtain a permit under a future federal administration favorable to Pebble. EPA should tell the public that is how the 2022 PD could result in a Pebble mine.

EPA Response

See EPA’s response to comment 7.0.2.

7.0.5 Ekwok Village Council (EVC) and Bristol Bay Fishermen's Association (Doc. #0830, p. 1)

EPA's 2022 proposed determination (2022 PD) is much weaker than its 2014 proposed determination (2014 PD). Both would apply limits to discharges of dredged for fill material into waters of the United States that would cause four types of harm to anadromous streams within essentially the same defined area surrounding the Pebble deposit. However, the limits in the 2022 PD are much more permissive (i.e., numerically higher) than those in the 2014 PD. Therefore, the Pebble Limited Partnership (PLP) can more easily revise its mine plan to comply with the higher, more permissive limits of the 2022 PD than the 2014 PD. PLP can submit a revised plan during a future sympathetic federal administration, and will probably obtain a discharge permit necessary to build Pebble mine. That is the ultimate consequence of the 2022 PD when it states that it provides such "clarity to the regulated community." 2022 PD at 2-19.

EPA Response

See EPA's responses to comments 7.0.1, 7.0.2, and 7.0.3.

7.0.6 National Wildlife Federation (Doc. #2067, p. 1)

The revised Proposed Determination and its vast record unquestionably support both the proposed restrictions and more stringent safeguards to protect Bristol Bay—including at a minimum the restrictions proposed in 2014 and the additional restrictions recommended in these comments.

The National Wildlife Federation appreciates the important work that has gone in to developing the revised Proposed Determination (revised PD) that would protect Bristol Bay from the 2020 Pebble Mine and similar plans for the Pebble Deposit Area in Southwest Alaska. This important revised PD and its vast record unquestionably support the proposed restrictions, which are essential for protecting the ecological integrity of the pristine Bristol Bay watershed from devastating and unacceptable harm. The revised PD and its vast record also clearly support more stringent safeguards to protect Bristol Bay—including at a minimum the restrictions proposed in 2014.

EPA Response

See EPA's response to comment 7.0.1.

TOPIC 8. COMMENTS ON APPENDIX B

8.0 Additional Information Related to the Assessment of Aquatic Habitats and Fish

8.0.1 Trout Unlimited and Katmai Service Providers (Doc. #0825, p. 11)

While impacts of stream removal, downstream discharge, and to a limited extent suspended solids are considered, the PD excludes most water chemistry impacts and particularly impacts of toxic metals associated with operation of metals mines. Given that mining activity would unearth primarily copper, and that copper is one of the most toxic elements to all aquatic life, the consideration of its direct and indirect effects is essential to thoroughly characterizing impacts. The lack of consideration for impacts of copper, other metals, and other pollutants further compounds the underestimation of adverse effects in the PD.

EPA Response

Although EPA recognizes the risk of impacts to water quality and the likelihood that water chemistry would be altered from natural, baseline conditions from the discharge of dredged or fill material to construct and operate the 2020 Mine Plan, impacts to water quality are not a basis for EPA's FD. See Section 4 of the FD for the basis for EPA's findings of unacceptable adverse effects on anadromous fishery areas. See also Appendix B (Section B.5.1) of the FD for discussion of water quality effects.

8.0.2 Trout Unlimited and Katmai Service Providers (Doc. #0825, p. 11)

Given the vast body of literature describing impacts of roads—much of which has been summarized in previous public comments regarding Pebble Project development and in Appendix G of EPA's 2014 Bristol Bay Watershed Assessment—failing to consider adverse effects of the 82-mile long road corridor in a currently nearly pristine, roadless area is negligent and results in the underestimation of adverse effects to fish in the PD.

EPA Response

The FD focuses on the adverse effects on fishery areas that would result from the discharge of dredged or fill material at the mine site associated with developing the Pebble deposit because these adverse effects on the aquatic ecosystem would be the most severe. EPA recognizes that development of a mine at the Pebble deposit would require

additional discharges of dredged or fill material for other necessary components (e.g., the transportation corridor), resulting in additional impacts to fishes and fishery areas.

8.0.3 Trout Unlimited and Katmai Service Providers (Doc. #0825, p. 10)

*Appendix B provides thorough and well-supported explanations of the shortcomings of the US Army Corps of Engineers (USACE) Final Environmental Impacts Statement (FEIS). These explanations clearly demonstrate that many USACE conclusions suggesting mine impacts would not, or would only minimally, adversely affect fisheries or other aquatic resources are erroneous.

* In Appendix B in particular, EPA's analysis of the shortcomings of PLP's habitat modeling (i.e., HABSYN and PHABSIM) used by USACE to conclude that impacts of the mine to fish would "not be measureable" is thorough and well-supported. It is a clear improvement upon the previous 2014 PD, and underscores just some of the significant problems and unreasonable assumptions in PLP-generated data.

EPA Response

Additional information addressing FEIS conclusions that appear to be inconsistent with the FD has been added to Appendix B (Attachment 1) of the FD.

8.0.4 Trout Unlimited and Katmai Service Providers (Doc. #0825, p. 23)

Pg. B-21: "As a result, these models may fail to adequately characterize mine impacts in ecosystems experiencing an altered climate (Sergeant et al. in press)."

Comment: The manuscript is now in print.

EPA Response

The citation has been updated in the FD.

8.0.5 Trout Unlimited and Katmai Service Providers (Doc. #0825, pp. 10–11)

Trophic levels lower than fishes are largely neglected from consideration in the PD. While mentioned, consideration of their vulnerability to mine impacts and the reverberating adverse effects that would have to fisheries is largely overlooked. Due to their sessile nature (in the case of primary producers, for example) and/or extremely limited ranges (in the case of most macroinvertebrates), lower trophic levels are frequently more susceptible to impacts of changes in water quality and quantity, temperatures, and other habitat characteristics. Given that lower trophic levels form the biological backbone of foodwebs, adverse effects to them would certainly compound adverse effects to fish.

EPA Response

EPA recognizes the importance of lower trophic levels in determining adverse effects to fish, as discussed in Appendix B of the FD.

8.0.6 Trout Unlimited and Katmai Service Providers (Doc. #0825, p. 23)

Pg. B-5: “Given these considerations and the spatial and temporal limitations of the available data, it is impossible to conclude with any certainty that the aquatic habitats lost to the 2020 Mine Plan are not and would not be important to salmon over the life of the mine and beyond.”

Comment: This serves as another important indication that adverse effects of mining to fishery areas is underestimated in the PD.

EPA Response

The administrative record supports EPA’s FD. The prohibition and restriction in the FD provide the most effective, transparent, and predictable protection of valuable anadromous fishery areas in the SFK, NFK, and UTC watersheds against unacceptable adverse effects resulting from the discharges evaluated in the FD.

8.0.7 Trout Unlimited and Katmai Service Providers (Doc. #0825, p. 23)

Pg. B-15: “As a result, the magnitude of fish habitat changes identified in the FEIS likely is an underestimate of actual effects of the project. It should be noted, however, that even this underestimate represents unacceptable adverse effect on fishery areas in the SFK and NFK watersheds (Section 4.2).”

Comment: This explicitly describes the underestimation of adverse effects of mining to fishery areas in the PD.

EPA Response

See EPA’s response to comment 8.0.6.

8.0.8 Trout Unlimited and Katmai Service Providers (Doc. #0825, p. 10)

The document relies heavily on PLP-collected data which many critiques and concerns consider problematic for their reliability, repeatability, interpretation, and application (e.g., O’Neal 2012 [O’Neal, S.L. 2012. A Review of PLP Environmental Baseline Documents: Resident fish and juvenile salmon habitat, distribution and assemblage. Fisheries Research and Consulting. Anchorage, AK. 21 pp.], Zamzow 2012 [Zamzow, K. 2012. A Review of PLP Environmental Baseline Documents: Water Quality. Center for Science in Public Participation. Chickaloon, AK. 18 pp.], Woody 2012 [Woody, C.A. 2012. Assessing reliability of Pebble Limited Partnership’s salmon escapement studies. Fisheries Research and Consulting. Anchorage, AK. 25 pp.]).

EPA Response

EPA recognizes the limitations of the available environmental baseline data, but these data are sufficient to determine that unacceptable adverse effects would result from development of the proposed mine. See Section 4 of the FD for more information about EPA’s finding and Appendix B for more information about data quality and assumptions regarding data applicability.

8.0.9 Bristol Bay Heritage Land Trust (Doc. #0826, pp. 2–3)

Toxicity of Copper to Fish and other Aquatic Biota. The results of several studies, some underwritten by BBHLT, indicate that surface water streams near the Pebble deposit can be characterized as having low hardness, alkalinity, Ca, Cu, and DOC concentrations. The low measured concentrations of parameters that potentially ameliorate metal toxicity suggest that Copper and other metals are likely to be highly toxic to aquatic biota in this region. To reduce the uncertainty associated with estimating adverse effects levels of copper to salmonids and other important aquatic species in the low-hardness waters, we recommended to the Army Corps of Engineers that site-specific testing using water sources and species relevant to the area be conducted to derive copper criteria and (or) calibrate existing models, such as the Biotic Ligand Model, that may be utilized in the future. I would refer you to Daniel Bogan et. al. Macroinvertebrate and Diatom Communities in Headwater Streams of the Nushagak and Kvichak River Watersheds, Bristol Bay, Alaska, in *Bristol Bay Alaska: Natural Resources of the Aquatic and Terrestrial Ecosystems*, C. Woody ed., J.Ross Publishing, 2018, p. 435. for a discussion of the aquatic biota characteristic of the region around the Pebble deposit. Research on the possible effects of copper on the salmon of Bristol Bay continues. Recent studies indicate the models currently used by the EPA are not sufficient to accurately predict the impact of copper on the salmon of Bristol Bay:

<https://alaskaseagrant.org/2022/08/31/research-reveals-water-conditions-increase-copper-toxicity-for-three-alaska-salmon-species/>

EPA Response

See EPA’s response to comment 8.0.1.

8.0.10 The Pebble Limited Partnership (Doc. #1912, Exhibit. 3, pp. 2–5)**1.0 GENERAL**

The potential effects of mine development on flow patterns in streams and rivers downstream and adjacent to the mine footprint were assessed by Knight Piésold Ltd. for the EIS at a level of precision that is appropriate for understanding effects of flow changes on aquatic resources. The approach taken is consistent with the type of analysis that has been successfully used at other mine sites to assess downstream effects and the level of precision in the modelling is commensurate with the realistic level of accuracy that can be achieved in modelling the Pebble Mine area drainages. Additional precision would not guarantee additional accuracy. The baseline watershed model was calibrated to an extensive

dataset of continuous records of surface flows at multiple nodes, and variations in flow conditions were modelled using a long-term (76-year) climate record and consideration of a very wide range of potential surficial conditions.

EPA Response

It is not clear what the commenter considers a “realistic level of accuracy,” and EPA recognizes the uncertainties inherent in modeling streamflow changes. Explicit statement and consideration of FEIS modeling assumptions and the uncertainties inherent in the FEIS modeling results would have been helpful to include in the FEIS (see EPA 2019a). Also see EPA’s response to comment 8.0.11.

8.0.11 The Pebble Limited Partnership (Doc. #1912, Exhibit 3, pp. 2–5)

2.0 SPECIFIC COMMENTS

Specific comments in the EPA Proposed Determination and associated responses are as follows:

2.1 WATERSHED MODEL NOT UPDATED WITH THE RESULTS OF THE GROUNDWATER MODEL

“The baseline watershed model was configured and calibrated prior to development of the groundwater model (MODFLOW) and was not updated to include any additional geologic or water table elevation data collected and used in the groundwater model.”

This statement is incorrect. The baseline watershed model was updated in 2019 in parallel with the numerical groundwater model update, and the two modelling groups worked collaboratively. The baseline watershed model updates consider the same hydrogeologic and hydrologic data that were incorporated into the groundwater model.

The objective of the watershed modelling was to develop a tool to assess potential impacts to streamflow in the Project area. The watershed model simulates baseflow contributions to streams (i.e., groundwater discharge) and changes in groundwater storage rather than representing water table elevations at any specific location. The groundwater flow model is a grid-based finite difference model and is well suited to using measured groundwater elevations to simulate potential impacts to the hydrogeologic system attributed to development of the Project.

The results from both models were combined to take advantage of the strengths of each model and thereby provide a good representation of the hydrology and hydrogeology of the Project area that is appropriate for understanding the potential impacts of mine development on the hydrologic system

2.2 WELL PUMPING AND GROUNDWATER TABLE DEPRESSION ARE NOT CONSIDERED

“Within the mine site boundary, streamflow changes due to well pumping and groundwater table depression are not considered.”

This statement is incorrect. All surface water and groundwater flows in the mine footprint that are not diverted by non-contact water diversions are modeled as captured by the mine and unavailable for downstream release until treated. Non-contact surface water diversions included in the End of Mine and Closure Watershed Models were assumed to be up to 80% efficient at directing water from within the mine site area to the downstream receiving environment. Infiltration from a diversion was assumed to be lost to the downstream facility in the mine site area, such as the Open Pit, and did not contribute to receiving environment flows. All water collected at mine facilities is treated and available for discharge to maintain streamflows.

Potential impacts of groundwater table depression extending outside the mine site boundary were incorporated into the watershed model by reducing streamflows in adjacent tributaries. The total groundwater extraction rate predicted using the groundwater flow model was apportioned as losses to sub-catchments within South Fork Koktuli River (SFK), Upper Talarik Creek (UTC), and North Fork Koktuli River (NFK) watersheds based on particle tracking results in the groundwater model (BGC, 2019b).

2.3 THE CAPTURE AND RELEASE OF FLOWS RESULTS IN UNIFORM FLOWS DOWNSTREAM

“The proposed operations transform the naturally varying and unregulated surface water and groundwater flows in the headwaters into uniform, regulated process-water discharges to surface waters. The altered variability in streamflows within and between the SFK, NFK, and UTC watersheds is not described or characterized.”

“The method used estimated streamflow change at multiple nodes and extended changes in streamflow from the downstream node to the upstream node. This method underestimates impacts, because streamflow changes would generally be greater at upstream nodes, closer to the mine site.”

These statements are incorrect. The capture of mine affected water and the release of associated treated water from the mine would result in some reduction in the natural variation of flows, particularly on a monthly average basis, but this reduction will diminish with increasing distance downstream from the release points because the released flows would mix with naturally varying flows from the undisturbed tributary areas. The rates of treated water discharge were selected to diminish this effect when it has the greatest impact and to enhance flows for aquatic resources. An examination of the effects of releasing treated water flows is illustrated by the flow values in Table K4.16-29, which presents North Fork Koktuli River baseline flows as well as end of mine flows with the addition of treated water. The North Fork Koktuli receives the bulk of the available treated flows at the mine, as indicated in Table K4.16-38, and therefore the natural variability of its flows is most affected by the moderating effect of the treated water.

The water treatment plant discharge would enter the NKF in Reach D, and therefore the moderating effect would be most pronounced in this reach and would be least pronounced in the farthest downstream reach (Reach A). The table below summarizes 50th percentile monthly flows in Reaches D

and A, for both the Baseline condition with no mine effects and for the End of Mine condition with mine effects and treated water releases.

[Table 1. Monthly Flows for Baseline and End of Mine with Treated Water Conditions included in submission here]

Note(s):

1. Flow values from Table K4.16-29.
2. Yellow shading indicates the maximum and minimum flows for the baseline condition.
3. Green shading indicates the maximum and minimum flows for the mine affected condition with treated water releases.

At NFK-D, where the treated water is released, the range of monthly flows as a percentage of the mean annual discharge is less for the End of Mine condition than for the Baseline condition, but the End of Mine flows are far from uniform, and the difference between the ranges of flows for the two scenarios is not particularly pronounced. It is also worth noting that the mean annual and winter flows are substantially higher for the End of Mine condition.

At NFK-A, which is substantially downstream from where the treated water is released, the range of monthly flows as a percentage of the mean annual discharge for the End of Mine condition is very similar to that of the Baseline condition. In this case, the mean annual discharge for the End of Mine condition is slightly lower than for the Baseline condition, but the winter flows are higher.

2.4 THE GROUNDWATER MODEL UNDERESTIMATES DEWATERING REQUIREMENTS

“The volume of groundwater pumping and the extent of groundwater table drawdown are likely underestimated for several reasons.”

This statement is incorrect. Based on specific requests contained within RFI 109e, the end-of-mining groundwater flow model was updated to simulate active dewatering of the open pit using both perimeter wells and in-pit wells (BGC, 2019a). The highest open pit dewatering rate were predicted with the sensitivity scenario (S7) that included perimeter and in-pit wells and a bedrock hydraulic conductivity 10 times higher than assigned in the base case groundwater model. Open pit dewatering rates associated with sensitivity scenario S7 at end of mining were incorporated into the End of Mine Watershed Model. The groundwater dewatering rates predicted for sensitivity scenario S7 were almost three times higher than the base case dewatering rates and were associated with a larger predicted extent of open pit drawdown than the base case (BGC, 2019c). The total groundwater extraction rate predicted using the groundwater model was apportioned as losses to sub-catchments within South Fork Koktuli River (SFK), Upper Talarik Creek (UTC), and North Fork Koktuli River (NFK) watersheds based on particle tracking results (KP, 2019a,b; BGC, 2019b).

2.5 VARIABLE GROUNDWATER PUMPING DEMAND NOT CONSIDERED

“A fixed groundwater pumping rate was selected for each of the hydraulic conductivity scenarios, despite the fact that groundwater pumping demand, and thus effects on baseflows, would vary with rainfall and temperature.”

It is true that the open pit dewatering rates are likely to vary seasonally, and a simplification was made in the End of Mine and Closure Watershed Models to assign the rate as a constant value equivalent to the predicted average annual rate. The implication of using the average rate is that the open pit dewatering rate assigned to the model during drier periods is higher than would be expected, which would consequently lead to higher predicted streamflow losses during those periods. The watershed model will therefore tend to conservatively overestimate streamflow reductions in drier periods when considering the implications of using average annual open pit groundwater dewatering rates.

2.6 CLIMATE VARIABILITY WAS NOT PROPERLY CONSIDERED

“Wet, dry, and average climate conditions were selected based on total precipitation in the final year of a 20-year series selected across the 76-year synthetic climate record. There was no verification that the 20-year period leading up to the final year was wetter or drier than average, although antecedent conditions are important in determining streamflows. The 20-year average annual precipitation across these three realizations only ranged from 54 to 55 inches (USACE 2020: Section 4.16). These wet, dry, and average climate conditions were used to design the water management plan but were not used to analyze streamflow changes.”

This interpretation of the modeling approach is incorrect. Both the water balance model and the watershed model considered climate variability, with the results from both models presented in Section 4.16 as percentiles derived from 76 different years of climate conditions and corresponding flows. The full range of temperature and precipitation values contained within that 76-year period were input to the models and sets of 76 possible flows for each month were generated. The resulting flows were presented as 1st, 10th, 50th, 90th and 99th percentile values for the water balance model and 10th, 50th, and 90th percentile flows for the watershed model. Accordingly, wet, dry, and average climate conditions were used to both design the water management plan and to analyze streamflow changes.

Note that USACE 2020 is not listed in the Reference section of the Proposed Determination

EPA Response

Statements regarding EPA’s concerns with the consideration of these topics in the FEIS have been revised in the FD. See Appendix B (Section B.6) of the FD for discussion of climate variability, Appendix B (Section B.3.3) of the FD for discussion of the estimated extent of groundwater impacts, Appendix B (Section B.3) of the FD for discussion of the FEIS assessment of streamflow changes, and Appendix B (Section B.4) of the FD for discussion of how streamflow changes were used in the fish habitat analysis; also see EPA’s response to comment 4.F.5.

EPA concluded that, despite these shortcomings, the streamflow change estimates documented in the FEIS provide a reasonable minimum approximation of the streamflow impacts expected to result from the 2020 Mine Plan. Even these minimum estimates of changes in average monthly flows, over the stream lengths documented in the FEIS, would affect the physical, chemical, and biological characteristics of these streams and constitute an unacceptable adverse effect on fishery areas (see Section 4.2.4 of the FD).

USACE 2020a was listed in Section 8 of the PD and is listed in Section 8 of the FD.

TOPIC 9. COMMENTS ON APPENDIX C

9.0 Technical Evaluation of Potential Compensatory Mitigation Measures

9.0.1 Alaska Department of Environmental Conservation (Doc. #0814, pp. 40–42)

e. The compensatory mitigation requirements are impossible to satisfy.

Region 10, relying on the Corps' evaluation, rejects PLP's compensatory mitigation plan without articulating what degree or type of mitigation would be sufficient. Region 10 goes so far as to proclaim that "known compensation measures are unlikely to adequately mitigate effects . . . to an acceptable level." In so doing, Region 10 not only hides the goalposts in the fog; it dismantles them entirely. Rejecting a permittee's proposed mitigation measures without specifying what might suffice is precisely the kind of arbitrary action that the APA prohibits.

The Corps and EPA have repeatedly acknowledged that compensatory mitigation requirements must be applied flexibly in Alaska because, as a state dominated by pristine wetlands, opportunities for compensatory mitigation in and adjacent to a project area are frequently limited or nonexistent. Region 10's proposed veto, however, turns this policy on its head. This raises significant concerns for future development of any kind in our wetlands-rich State.

For almost 30 years, the Corps and the EPA have recognized that wetlands mitigation in Alaska presents unique complexities. Based on this recognition, EPA and the Corps have developed Alaska-specific guidance for mitigation sequencing under Section 404. Region 10, however, makes no mention of this guidance in the proposed veto. Nor does Region 10 mention the 1994 Alaska Wetlands Initiative, [To further understand how to best apply the Guidelines in Alaska, the agencies convened a detailed study—the Alaska Wetlands Initiative—with a broad range of stakeholders, including the State. The Alaska Wetlands Initiative resulted in several policy refinements and goals, the most relevant of which was the intent to issue a "written statement that recognizes the flexibility to consider circumstances in Alaska in implementing alternatives analyses and compensatory mitigation requirements under the Section 404 regulatory program," which was intended to provide "greater predictability to the Section 404 program." The statement was attached to the Summary Report, and "recognize[d] that . . . restoring, enhancing, or creating wetlands through compensatory mitigation may not be practicable due to limited availability of sites or technical or logistical issues."] a report prepared by EPA and the Corps which "emphasize[d] that compensatory mitigation is only required when appropriate and practicable" [Alaska Wetlands Initiative, at 12.] and concluded that "due to climatological and physiographic conditions in Alaska, compensatory mitigation is often not practicable." [Id. at 15.] This silence on the Alaska-specific

guidance raises serious questions about the EPA's continued commitment to applying mitigation requirements in Alaska in an appropriate and reasonable manner.

Wetlands mitigation in Alaska is fundamentally different than in the lower 48 states because of the sheer quantity of pristine wetlands in Alaska. Alaska holds more wetlands (approximately 175,000,000 acres of wetlands, comprising about 43% of the surface area of the State) than the rest of the Nation combined (103,000,000 acres, comprising about 5% of the surface area). EPA and the Corps have long recognized that the goal of achieving "no net loss" of wetlands acreage may not be met on an individual permit basis, and "may not be practicable in areas where wetlands are abundant." [Alaska Wetlands Initiative, at 1; see Memorandum of Agreement Between the EPA and the DOA Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines (Feb. 6, 1990), at 5 n.7 (recognizing that "there are certain areas where, due to hydrological conditions, the technology for restoration or creation of wetlands may not be available at present, or may otherwise be impracticable. In addition, avoidance, minimization, and compensatory mitigation may not be practicable where there is a high proportion of land which is wetlands").] EPA and the Corps expressly noted that Alaska posed specific mitigation complexities in their January 1992 joint guidance emphasizing that compensatory mitigation may not be required in areas where "it may not be practicable to restore or create wetlands." [Alaska Wetlands Initiative, at 1-2.]

Recently, the agencies reiterated their understanding that mitigation in Alaska is unique with an updated Memorandum of Agreement ("2018 MOA") on mitigation sequencing. [Memorandum of Agreement Between the DPE and EPA Concerning Mitigation Sequence for Wetlands in Alaska under Section 404 of the Clean Water Act (June 15, 2018) (2018 MOU).] The 2018 MOA repeats the agencies' continuing acknowledgement that "[r]estoring, enhancing, or establishing wetlands for compensatory mitigation may not be practicable due to limited availability of sites and/or technical logistical limitations." [Id. at 2.] It also reiterated four important points regarding compensatory mitigation that are relevant here:

- * "Compensatory mitigation options over a larger watershed scale may be appropriate given that compensation options are frequently limited at a smaller watershed scale."
- * "Where a large proportion of the land is under public ownership, compensatory mitigation opportunities may be available on public land."
- * "Out-of-kind compensatory mitigation may be appropriate when it better serves the aquatic resource needs of the watershed."
- * "[C]ompensatory mitigation provided through preservation should be, to the extent appropriate and practicable, conducted in conjunction with aquatic resource restoration, establishment, and/or enhancement activities," but "[t]his requirement may be waived by the Corps in cases where preservation has been identified as a high priority using a watershed approach." [2018 MOU at 4-8.]

In sum, the 2018 MOA requires a thoughtful balance between environmental conservation and the practical considerations associated with resource development in Alaska in recognition of the reality

that the pristine nature of much of the state significantly limits the opportunities for compensatory mitigation.

Despite the patent relevance of the 1992 MOA, the 1994 Alaska Wetlands Initiative, and the 2018 MOA to the fundamental structure of PLP's mitigation plan, the Corps appeared to ignore the guidance. Indeed, the Corps' Permit Denial, its supporting Attachment B2 (Evaluation of the Discharge of Dredge and Fill Material In Accordance with 404(B)(1) Guidelines (40 C.F.R. Section 230, Subparts B through H)), and its November 9, 2020 Memorandum for the Record: Compliance Review of Final Report, Pebble Project Compensatory Mitigation Plan in accordance with 33 C.F.R. 332, POA-2017-00271 ("Compliance Review"), all fail to identify the 2018 MOA as relevant guidance. It appears that the Corps made its decision as if the 2018 MOA, and its recognition of the unique mitigation challenges raised by Alaska's abundant and largely pristine wetlands, simply did not exist.

Region 10 now compounds the problem. Because in-kind, in-watershed compensatory mitigation is simply not available, and because that appears to be the only mitigation that Region 10 would accept, Region 10 is not only rejecting PLP's specific mitigation plan for the same improper reasons that the Corps did, but rejecting any mitigation plan.

The Corps' and Region 10's refusal to apply the flexibility provided under the 2018 MOA, and instead to impose impossible compensatory mitigation on the Pebble project, sets a dangerous precedent whose reach extends beyond this veto action. Region 10 signals that development will not be approved because mitigation requirements are simply unachievable—even on state lands that were specifically designated for mineral development. This new, more stringent standard reverses decades of work by the State, the Corps, and EPA to ensure a reasonable path forward for future development projects in Alaska.

EPA Response

EPA disagrees that “rejecting a permittee’s proposed mitigation measures without specifying what might suffice is precisely the kind of arbitrary action that the APA prohibits.” Neither the APA nor any other law imposes a duty on EPA to specify acceptable mitigation for a project proponent. Federal regulations establish the requirements for providing CWA Section 404 compensatory mitigation (40 CFR Part 230, Subpart J); these regulations also make it clear that CWA Section 404 “permit applicants are responsible for proposing an appropriate compensatory mitigation option to offset unavoidable impacts” (40 CFR 230.93(a)(1)). Appendix C of the FD specifically references Alaska-specific CWA Section 404 mitigation guidance that EPA and the U.S. Department of Army (DA) published in 2018 (see Section 1.2). As noted in Section 1.2 of Appendix C, this 2018 guidance “updates and replaces the EPA and DA Memoranda entitled *Clarification of the Clean Water Act Section 404 Memorandum of Agreement on Mitigation*, dated January 24, 1992, and *Statements on the Mitigation Sequence and No Net Loss of Wetlands in Alaska*, dated May 13, 1994.” The FD describes why the compensatory mitigation plans that PLP proposed in January 2020 and November 2020 would not adequately mitigate the effects described in the FD to an acceptable level. Appendix C describes why available

information demonstrates that known compensation measures are unlikely to adequately mitigate effects described in the FD to an acceptable level. The 2018 mitigation guidance was fully considered in EPA’s evaluation, and the findings on mitigation in Appendix C are consistent with that guidance.

9.0.2 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 10)

Appendix C is an impressive update to the 2014 BBWA Appendix J, clearly demonstrating that sufficient mitigation of adverse effects of mine development cannot be attained.

EPA Response

This comment represents further support for EPA’s conclusion and its findings described in and supported by Appendix C of the FD.

9.0.3 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 25)

Pg. C-16: “Quigley and Harper (2006b), in a review of stream rehabilitation projects, concluded ‘the ability to replicate ecosystem function is clearly limited.’”

Comment: I would emphasize this point regarding nearly all mitigation measures addressed in this chapter. Nature is a far better habitat ‘engineer’ than any human effort.

EPA Response

Appendix C of the FD makes this point in a number of places (e.g., pp. C-16, C-18, and C-31).

9.0.4 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 26)

Pg. C-27 regarding hatcheries and stocking fish

The literature regarding negative impacts of hatchery fish ranging from individual fish to entire salmon species has expanded multi-fold in recent years (e.g., [Amoroso, R.O., M.D. Tillotson, and R. Hilborn. 2017. Measuring the net biological impact of fisheries enhancement: Pink salmon hatcheries can increase yield, but with apparent costs to wild populations. *Canadian Journal of Fisheries and Aquatic Sciences*, 74:1233-1242.], [Cline, T.J., J. Ohlberger, J. and D.E. Schindler. 2019. Effects of warming climate and competition in the ocean for life-histories of Pacific salmon. *Nature Ecology and Evolution* 3: 935–942. <https://doi.org/10.1038/s41559-019-0901-7>.], Ohlberger, J., E.J. Ward, R.E. Brenner, M.E. Hunsicker, S.B. Haught, D. Finnoff, M. Litzow, T. Schwoerer, G.T. Ruggione, and C. Hauri. 2022) Non-stationary and interactive effects of climate and competition on pink salmon productivity. *Global Change Biology* 28:2026– 2040. <https://doi.org/10.1111/gcb.16049>, and many others). While a comprehensive literature review is not provided here, a recent ProPublica journalistic investigation by Schick et al.

(2022) [Schick, T., I. Hwang, and K. Wentz-Graff. 2022. The U.S. has spent more than \$2 Billion on a plan to save salmon. The fish are vanishing anyway. ProPublica in partnership with Oregon Public Broadcasting. May 24th, 2022. <https://www.opb.org/article/2022/05/24/pacific-northwest-federal-salmon-hatcheries-declining-returns/>.] summarizes some of the recent research, ultimately concluding “The hatcheries were supposed to stop the decline of salmon. They haven’t.”

EPA Response

The additional information provided by the commenter provides further support for EPA’s conclusion in the hatcheries discussion in Appendix C of the FD.

9.0.5 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 26)

Pg. C-25: “Another potential type of restoration within the Nushagak and Kvichak River watersheds is the removal of existing or abandoned roads. As described in detail in EPA 2014, Appendix G, roads have persistent, multifaceted impacts on ecosystems and can strongly affect water quality and fish habitat.”

Comment: This serves as another reminder that impacts from construction and operation of the 82-mile road required to access the Pebble Mine should be considered in the 404(c) Final Determination. Moreover, any attempt to remove roads—no matter how unlikely—would be vastly overshadowed by construction of the access road which would be orders of magnitude more impactful than any existing roads in the region.

EPA Response

See EPA’s response to comment 4.B.50.

9.0.6 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, pp. 26–27)

Pg. C-33: “Available information demonstrates that known compensation measures are unlikely to adequately mitigate effects described in this proposed determination to an acceptable level.”

Examples of failures and shortcomings of restoration and mitigation strategies abound throughout this Appendix and elsewhere in peer-reviewed literature, government reports, and other gray literature. Though an entirely different case study than the proposed Pebble Mine, the Columbia River offers perhaps the clearest example of the failures of mitigation, restoration, and other recovery efforts. Despite untold billions of dollars invested in recovery, less than 20% of historic spawner abundances now return to the basin, 80% of which are hatchery salmon that cause unanticipated negative impacts to wild populations within the basin and extending throughout the entire North Pacific Ocean (Schick et al. 2022 [Schick, T., I. Hwang, and K. Wentz-Graff. 2022. The U.S. has spent more than \$2 Billion on a plan to save salmon. The fish are vanishing anyway. ProPublica in partnership with Oregon Public Broadcasting. May 24th, 2022. <https://www.opb.org/article/2022/05/24/pacific-northwest-federal-salmon-hatcheries-declining-returns/>.] and many others).

EPA Response

The additional information provided by the commenter provides further support for EPA's conclusions in Appendix C of the FD regarding the challenges of adequately mitigating impacts of the nature and magnitude described in the FD.

9.0.7 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, pp. 23–24)

Pg. C-11: "Their [Frazer Lake, Alaska] study documents how differing donor populations, each with different life-history characteristics, contributed differently toward the establishment of populations in the newly accessible habitats (Burger et al. 2000). This study highlights the importance of genetics and life history adaptations of source populations to colonization success."

Comment: Moreover, sockeye that colonized Frazer Lake are largely too small in body size for commercial value and have failed to achieve genetic equilibrium or "frequency dependent selection" as is found in naturally colonized populations ([DeFilippo, L.B., D.E. Schindler, J. Ohlberger, K.L. Schaberg, M.B. Foster, D. Ruhl, and A.E. Punt. 2019. Recruitment variation disrupts the stability of alternative life histories in an exploited salmon population. *Evolutionary Applications* 12:214-229. <https://doi.org/10.1111/eva.12709>]). This describes just two of a myriad of issues documented throughout the literature resulting from fish introductions to novel habitat.

EPA Response

The additional information provided by the commenter provides further support for EPA's conclusions in Appendix C of the FD regarding the challenges of introducing fish to novel habitats.

9.0.8 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 24)

Pg. C-13: "Given the examples of the challenges of connectivity management, use of fishways at waterfalls, and engineered connections to off-channel habitats there is a great deal of uncertainty regarding the efficacy and sustainability of such techniques as compensatory mitigation in the affected watersheds. Further, there also appears to be a lack of opportunities to implement such techniques."

Comment: Indeed, according to Woody and O'Neal (2010) [Woody, C.A. and S.L. O'Neal. 2010. Fish surveys in headwater streams of the Nushagak and Kvichak River drainages, Bristol Bay, Alaska, 2008-2010. Prepared for the Nature Conservancy. Fisheries Research and Consulting. Anchorage, AK. 48 pp.] and Woody et al. 2016 [Woody, C.A., S. O'Neal, D. Rinella, D. Bogan, D. Merrigan, and M. Geist. 2016. Environmental baseline and mining in remote Alaska. *Alaska Park Science* 13: 48-53. <https://www.arlis.org/docs/vol1/Pebble/1097571437.pdf>], "[C]ombined stream survey data [on and around the Pebble deposit] for 2008 - 2010 indicated salmon presence in 3 of every 4 headwater streams of less than 10% gradient draining to an anadromous river, including streams on top of the Pebble Prospect. Rearing salmon were documented above dry stream reaches and in waters

disconnected from rivers suggesting salmon access such sites during annual floods or via subsurface groundwater channels. Non- salmon species important to subsistence, such as Dolly Varden char, were found in 96% of streams surveyed.” In other words, streams in the area with suitable gradients for fish are virtually ALL already inhabited. Their presence in headwater streams necessitates their presence and use of all connected downstream habitat. Moreover, there are no major fish passage barriers limiting upstream. The closest major potential barrier is likely the Newhalen River falls, which tens to hundreds of thousands are able to ascend (including ALL Lake Clark spawning sockeye).

EPA Response

The additional information provided by the commenter provides further support for EPA’s conclusions in Appendix C of the FD regarding the challenges in finding opportunities to implement projects to improve connectivity.

9.0.9 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 26)

Pg. C-26: “Removing and replacing crossings that serve as barriers to fishes could improve fish passage and re- open currently inaccessible habitat. However, as noted in Section 3.1.2.2, the Nushagak and Kvichak River watersheds are almost entirely roadless areas and, thus, likely offer few, if any, viable opportunities to provide the extent of environmental benefits necessary to reduce the adverse effects of the 2020 Mine Plan to an acceptable level.”

Comment: Again, construction and use of the access road to Pebble Mine would introduce tens if not hundreds more road crossing to the region than currently exist for potential removal or replacement.

EPA Response

See EPA’s response to comment 4.B.50.

9.0.10 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, pp. 24–25)

Pg. C-13: “...improperly sited or engineered structural additions can fail to achieve desired effects or have adverse, unanticipated consequences (e.g., via structural failure or scour and fill of sensitive non-target habitats (Frissell and Nawa 1992), highlighting the need for appropriate design (Kondolf et al. 2007).”

Comment: In particular, around the Pebble deposit, wood plays a minor role in natural habitat structure given the nature of tundra that surrounds most area streams but simply doesn’t support substantial tree growth for recruitment to streams. Large woody debris (LWD) is documented in the region as low (0.3-7.8 pieces per 100-m of stream on average) compared to Pacific Northwest streams where wood placement is regularly used for salmon habitat restoration ([Bogan, D., R. Shaftel, and D. Rinella. 2012. Baseline biological surveys in wadeable streams of the Kvichak and Nushagak watersheds, Bristol Bay, Alaska. Prepared for the Alaska Department of Environmental Conservation. Anchorage, AK. 31 pp.]).

Moreover, while perhaps more common than LWD, boulders also play a minor role in structuring natural habitat in the area given that all streams are dominated by gravels followed by cobbles (Bogan et al. 2012). In other words, while LWD and boulder additions in Lower 48 streams sometimes increase local abundance of salmonids and other fishes, they simply are not a natural part of fish habitat in the region surrounding the Pebble deposit. Consequently, their introduction to natural systems which already support abundant fishes may be akin to adding entirely artificial, manmade structure such as docks or pilings. While the success of such work cannot be predicted, it is clear that fishes in the region successfully spawn, incubate, and rear without significant influence of LWD or boulders.

Pg. C-15: "It is not clear from current data that adding complexity would address any limiting factor within existing off-channel habitats, or that additions of boulders and wood would enhance salmonid abundance or survival."

Comment: See comments above regarding boulders and wood. Regarding "adding complexity" using off-channel habitat construction, it is clear from Pebble Limited Partnership's environmental baseline data, Woody and O'Neal 2010, Woody et al. 2016 and other sources that headwater and off-channel habitats already support abundant fishes. Any manmade, engineered modifications may be just as likely degrade existing, high-quality habitat as enhance it.

EPA Response

The additional information provided by the commenter provides further support for EPA's conclusions in Appendix C of the FD regarding the challenges associated with using engineering techniques to improve the quality of existing habitats in the potentially affected watersheds.

9.0.11 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, pp. 25–26)

Pg. C-19: "They [two commenters] suggested increasing two groups of water chemistry parameters: basic parameters such as alkalinity, hardness, and total dissolved solids, and nutrients such as nitrogen (N) and phosphorous (P)."

Comment: As EPA states in this section, there is no evidence that streams are currently N or P limited. Moreover, adding nutrients could have severe negative consequences particularly in light of climate change and water treatment plant (WTP) discharges. Even with treatment, WTP discharge is likely to be higher in N and P concentrations relative to baseline conditions, given that background concentrations are well below water quality standards. Regardless, elevating N and P runs the risk of overstimulating algal or other primary production which, combined with warmer water temperatures could result in oxygen depletion, lower macroinvertebrate production, and other unintended consequences that could reverberate throughout the foodweb with ultimately negative consequences for fish production (as described thoroughly later in Appendix C summarizing Slavik et al. 2004, Davis et al. 2010, etc.). Lastly, as stated throughout the Proposed Determination, fish are adapted to unique local conditions which, if changed, could deter fish from using altered habitat.

EPA Response

The additional information provided by the commenter provides further support for EPA’s conclusions in Appendix C of the FD regarding the challenges associated with proposals to manipulate water chemistry as a means to generate compensatory mitigation credit.

9.0.12 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, p. 25)

Pg. C-19: “PLP suggested in its 2014 comments that current levels of alkalinity, hardness, and total dissolved solids (TDS) in the SFK, NFK, and UTC are suboptimal for fish production and could be manipulated to improve fish production.”

Comment: In addition to other assumptions made by PLP in their suggestion that water chemistry is limiting fish production, there simply is no evidence that fish production is limited at all. Fish occur in nearly all streams less than 10% gradient near the Pebble deposit ([Woody, C.A. and S.L. O’Neal. 2010. Fish surveys in headwater streams of the Nushagak and Kvichak River drainages, Bristol Bay, Alaska, 2008-2010. Prepared for the Nature Conservancy. Fisheries Research and Consulting. Anchorage, AK. 48 pp.], [Woody, C.A., S. O’Neal, D. Rinella, D. Bogan, D. Merrigan, and M. Geist. 2016. Environmental baseline and mining in remote Alaska. Alaska Park Science 13: 48-53. <https://www.arlis.org/docs/vol1/Pebble/1097571437.pdf>]), ranging from low to high densities based on area surveys. If production is indeed limited in some streams, it could very well result from myriad other factors including natural density dependence, physical habitat limitations, suboptimal temperatures, water chemistry, etc. Attempting to optimize all physical, chemical, and biological habitat parameters is simply not possible.

EPA Response

See EPA’s response to comment 9.0.11.

TOPIC 10. COMMENTS ON REFERENCES

10.0 References and Additional Information

10.0.1 Trout Unlimited (TU) and Katmai Service Providers (KSP) (Doc. #0825, pp. 14, 27–30)

Comments on EPA Region 10's consideration of the USACE administrative record, which contains documents pertaining to the USACE Pebble Mine permit decision. EPA Region 10 included in the docket for this proposed determination all portions of the voluminous administrative record for the USACE Pebble Mine permit decision that are relevant to EPA's decision-making and that EPA considered in its decision to issue this proposed determination. EPA Region 10 is soliciting comments that identify any other documents from the USACE administrative record that EPA should consider in its decision-making for this CWA Section 404(c) review process.

The PD in combination with the existing administrative record provide an impressive amount of relevant literature, leaving little to add. The few citations I refer to herein that may not be in the record are highlighted in bold below in the list of references.

(...)

References

(note that references listed in boldtype may not be included in the Administrative Record and/or the PD)

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EPA Response

EPA considered the references that the commenter suggested and incorporated relevant references into the FD (see Sections 3 and 4 and Appendix B of the FD).

10.0.2 Trustees for Alaska et al. (Doc. #0831, pp. 2–14)

3. Comments on the likely adverse effects on fishery areas and other ecological resources that would be directly or indirectly affected by discharges of dredged or fill material associated with mining the Pebble deposit (including the SFK, NFK, and UTC and downstream reaches of the Nushagak and Kvichak Rivers).

Numerous highly-qualified scientific and technical experts submitted reports throughout the U.S. Army Corps of Engineers’ NEPA and CWA section 404(b) processes for the 2020 Mine Plan. These scientists closely reviewed PLP’s application materials, and reached the same conclusion as the revised PD: impacts such as those posed by the 2020 Mine Plan would cause significant and dramatic impacts to the aquatic ecosystem. The reports most relevant to the revised PD’s proposed prohibition and restrictions are summarized below. These scientists relied on many of the same published scientific papers that EPA cites in the revised PD. In some instances, they cited to additional published articles to support their conclusions. The full citations to these additional publications are included below and the publications themselves are attached as exhibits. These additional citations to published scientific articles further demonstrate the well-founded scientific basis for the EPA acting pursuant to 404(c) to prevent the unacceptable adverse effects the 2020 Mine Plan—and similar large-scale mining—would have on the headwaters of Bristol Bay.

A. Siobhan Fennessy, Ph.D., Comments on the Final Environmental Impact Statement on the Impacts to Wetlands and Other Waters (Aug. 21, 2020).

Siobhan Fennessy, Ph.D., an expert in wetland ecosystems who was on the Science Advisory Board for the EPA Water Body Connectivity Report,[U.S. Environmental Protection Agency, Science Advisory Board Panel for the Review of the EPA Water Body Connectivity Report, [https://yosemite.epa.gov/SAB/SABPRODUCT.NSF/OE9300686C0E79C185257D09005F2338/\\$File/Panel+Roster.pdf](https://yosemite.epa.gov/SAB/SABPRODUCT.NSF/OE9300686C0E79C185257D09005F2338/$File/Panel+Roster.pdf); see also E&E News, Trump’s WOTUS: Clear as mud, scientists say, <https://www.ee news net/stories/1060121251> (“ Brooks, Rains, Fennessy and Tank all sat on the EPA Science Advisory Board panel that reviewed a 300-page ‘connectivity report’ published by the Obama administration describing how different wetlands and waterways affect larger waters downstream.”).] emphasized that the proposed mine would “lead to irreparable and significant degradation of wetlands and other waters in the Bristol Bay watershed.”[Siobhan Fennessy, Ph.D., Comments on the Final Environmental Impact Statement on the Impacts to Wetlands and Other Waters at 4 (Aug. 21, 2020) (Ex. 4).] Her report concluded that “[t]he damage to the wildlife dependent on these waters, the overall biological diversity of the aquatic habitats, and the loss of critical functions from these headwater wetlands will lead to significant adverse effects.”[Id. (“The proposed Pebble Mine will significantly degrade critical functions, ecosystem services, and biodiversity of the wetlands and waters in the Bristol Bay Watershed and in the Nushagak and Kvichak River watersheds.”).] These impacts would flow from “the direct, indirect, and temporary impacts to 4,614 wetland acres and 191 stream miles.”[Id. at 2.] Dr. Fennessy concluded that “the loss of thousands of acres of wetlands and hundreds of stream miles represents significant degradation to the aquatic environment and will result in the disastrous, permanent loss of diverse, high quality habitat, with substantial negative effects on salmon and other biota.”[Id; see also id. at 5 (same, and adding that “[a]ny conclusion to the contrary is not rooted in science and cannot be supported.”).]

Dr. Fennessy also made the following observations, relying on references that the revised PD does not cite:[This list—and the similar lists in the sections below—are not exhaustive but rather aim to provide EPA with additional citations to published literature that support the findings in the revised PD. U.S. Environmental Protection Agency, 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 (2022) (hereinafter “revised PD”).]

* “In 2015, USEPA published a 408-page report entitled “Connectivity of Streams and Wetlands to Downstream Waters: a Review and Synthesis of the Scientific Evidence,” with the stated purpose of summarizing the ‘current scientific understanding about the connectivity and mechanisms by which streams and wetlands, singly or in the aggregate, affect the physical, chemical, and biological integrity of downstream waters’ (page ES-1). The report concludes that: ‘the incremental effects of individual streams and wetlands are cumulative across entire watersheds and therefore must be evaluated in context with other streams and wetlands (page ES-5).’”[Ex. 4 at 4–5, citing U.S. EPA. 2015. Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of The Scientific Evidence

(Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-14/475F, 2015 (Ex.79).]

* “The Bristol Bay watershed is one of the few watersheds in the U.S. considered pristine, i.e., it is essentially free of any anthropogenic degradation. Its rivers are free- flowing from headwaters to ocean, a claim that can be made about very few river networks globally (Grill et al. 2019).” [Id. at 22, citing Grill, G. et al. 2019. Mapping the world’s free flowing rivers. *Nature* 569: 215-221 (Ex. 80).]

B. Gordon H. Reeves, Ph.D., Review of Effects of the Proposed Pebble Mine on Fish Values in the FEIS: The Portfolio Effect (Aug. 20, 2020).

Dr. Reeves is a Research Fish Biologist at the Pacific Northwest Research Station in Corvallis, Oregon. Dr. Reeves’ expertise is in the freshwater ecology of anadromous salmon and trout, conservation biology of those fish and the impacts of climate change on aquatic ecosystems and associated biota, and aquatic aspects of landscape ecology.[See U.S. Forest Service, Research and Development, Gordon Reeves,

<https://www.fs.usda.gov/research/about/people/greeves#:~:text=Gordon%20Reeves'%20expertise%20is%20in,aquatic%20aspects%20of%20landscape%20ecology>.]

His research focuses on aquatic ecosystems and how they are considered at the landscape scale, and the development of management and conservation plans for and understanding the potential impacts of climate changes on aquatic and riparian ecosystems and associated Pacific salmon in the Pacific Northwest and Alaska.[Id.] His work is primarily in the Pacific Northwest and Alaska and he has faculty appointments at Oregon State University, the University of Washington, and Humboldt State University.[See U.S. Forest Service, Aquatic Ecology Management Team, Gordon Reeves, <https://www.fs.fed.us/pnw/lwm/aem/people/reeves.html>.]

Dr. Reeves reviewed the Final Environmental Impact Statement (FEIS) and made the following observations regarding the proposed mine and the portfolio effect,[Gordon H. Reeves, Ph.D., Review of Effects of the Proposed Pebble Mine on Fish Values in the FEIS: The Portfolio Effect (Aug. 20, 2020) (Ex. 5). Also of note is the supporting document to the Army Corps’ Record of Decision regarding the 2020 Mine Plan titled “EPA Bristol Bay Sockeye Salmon Portfolio,” available at: <https://pebblewatch.com/wp-content/uploads/2020/12/3-Supporting-Doc-to-ROD-B10-EPA-BB-SOCKEYE-SALMON-PORTFOLIO-V2.pdf>. This analysis from EPA contains additional references to scientific publications that support EPA’s findings in the revised PD, including a number of figures that may be useful to include in a Recommended Determination.] relying on references that the revised PD does not cite:

* “Longer-term data on Bristol Bay rivers shows that local abundances can vary 100 fold over decade-long time scales (the range of natural variability) (Davis and Schindler in review), a feature of fish populations in a pristine ecosystem (Schindler, et al. 2010, Moore et al. 2010, Davis and Schindler in review).” [Id. at 2, citing Moore, J.W., M. McClure, L.A. Rogers, and D.E. Schindler. 2010. Synchronization and portfolio performance of threatened salmon. *Conservation Letters* 3:340-348 (Ex. 81) (the Revised PD cites the other documents relied on in this quote).]

* “Properly functioning watersheds should be viewed as portfolios, where the sustainability of the regional resource depends in part on the fact that in productive ecosystems all populations do not boom and bust at the same time (ie., low abundance or production in one area of the watershed are offset by high abundance or production in other areas – the portfolio effect) (Schindler et al. 2010, Moore et al. 2010, Brennan et al. 2019).”[Id. at 2, citing Ex. 81 (the Revised PD cites the other documents relied on in this quote).]

* “Dann et al. (2012) identified these fish as a sea/river ecotype, an anadromous form of Sockeye salmon that does not spend any part of its life in a nursery lake before migrating seaward (Wood et al. 2008), in western Alaska. This ecotype may be more genetically diverse than lake ecotypes (Beacham et al. 2004, McPhee et al. 2009) and are more similar to each other than they are to local lake ecotype populations (Wood et al. 1989; 1994). They also differ in body shapes from their lake counterparts (Pavey et al. 2010). This ecotype is limited to the Nushagak and Togiak Rivers in Bristol Bay (Dann et al. 2012). And, the populations in the South and North Fork of the Koftuli River are genetically unique (Dann et al. 2012; Shedd et al. 2016).”[Id. at 2–3, citing Wood, C.C., Bickham, J.W., Nelson, J., Foote, C.J. and Patton, J.C. 2008. Recurrent evolution of life history ecotypes in sockeye salmon: implications for conservation and future evolution.

Evolutionary Applications 1: 207-221 (Ex. 82); Beacham, T.D., Lapointe, M., Candy, J.R., McIntosh, B., MacConnachie, C., Tabata, A., Kaukinen, K., Deng, L., Miller, K.M. and Withler, R.E. 2004. Stock identification of Fraser River sockeye salmon using microsatellites and major histocompatibility complex variation. *Transactions of the American Fisheries Society* 133: 1117-1137 (Ex. 83); McPhee, M.V., Tappenbeck, T.H., Whited, D.C. and Stanford, J.A. 2009. Genetic diversity and population structure in the Kuskokwim River drainage support the recurrent evolution hypothesis for sockeye salmon life histories. *Transactions of the American Fisheries Society* 138: 1481-1489 (Ex. 84); Wood, C. C., B. E. Riddell, D. T. Rutherford, and R. E. Withler. 1994. Biochemical genetic survey of sockeye salmon (*Oncorhynchus nerka*) in Canada. *Canadian Journal of Fisheries and Aquatic Sciences* 51(Suppl.1): 114–131 (Ex. 85); Wood, C.C., Rutherford, D.T. and McKinnell, S. 1989. Identification of Sockeye Salmon (*Oncorhynchus nerka*) Stocks in Mixed-stock Fisheries in British Columbia and Southeast Alaska using Biological Markers. *Canadian Journal of Fisheries and Aquatic Sciences* 46: 2108-2120 (Ex. 86); Pavey, S.A., Nielsen, J.L., MacKas, R.H., Hamon, T.R. and Breden, F. 2010. Contrasting ecology shapes juvenile lake-type and riverine sockeye salmon. *Transactions of the American Fisheries Society* 139: 1584-1594 (Ex. 87) (the Revised PD cites the other documents relied on in this quote).]

* “Life-history diversity can also increase production and buffers population fluctuations, particularly over long time periods (Greene et al. 2010). The aggregate behavior of the salmon populations in Bristol Bay increased the stability of the overall return by 41%–77% compared to individual populations (Schindler et al. 2010), in part, because of the diverse life histories within this complex (Greene et al. 2010). The loss or decrease in genetic and life-history diversity could result in the overall decline of the performance of the portfolio (Moore et al. 2010, Greene et al. 2010, Carlson and Satterwaitte 2011) and compromise its ability to respond to challenges posed by climate change and natural events such as earthquakes or tsunamis.”[Id. at 3, citing Greene, C.M., Hall, J.E., Guilbault, K.R. and Quinn, T.P. 2010.

Improved viability of populations with diverse life-history portfolios. *Biology Letters* 6: 382-386 (Ex. 88); Ex. 81; Carlson, S.M. and Satterthwaite, W.H. 2011. Weakened portfolio effect in a collapsed salmon population complex. *Canadian Journal of Fisheries and Aquatic Sciences* 68:1579- 1589 (Ex. 89) (the Revised PD cites the other document relied on in this quote).]

* “[E]ven though some of the miles that will be lost do not support fish, they are important ecologically. They are important sources of water, food, sediment, and nutrients to downstream areas (Wipfli et al. 2007). They could also be important overwintering habitats (Hance et al. 2016).”[Id. at 3, citing Hance, D.J., Ganio, L.M., Burnett, K.M. and Ebersole, J.L. 2016. Basin-scale variation in the spatial pattern of fall movement of juvenile Coho salmon in the West Fork Smith River, Oregon. *Transactions of the American Fisheries Society* 145: 1018-1034 (Ex. 90) (the revised PD cites the other publication relied on in this quote).]

C. Gordon H. Reeves, Ph.D., Review of the Assessment of Water Temperatures (Aug. 20, 2020)

Dr. Reeves also reviewed the FEIS with a focus on the effects of the proposed mine on downstream water temperatures. [Gordon H. Reeves, Ph.D., Review of the Assessment of Water Temperatures (Aug. 20, 2020) (Ex. 6).] He made the following observations, relying on references that the revised PD does not cite:

* “For species with large geographic distributions, such as Pacific Salmon, considerable differences in temperature may be experienced that can result in differences in thermal tolerances and preferences (Fangue et al. 2006).”[Id. at 2, citing Fangue, N.A., Hofmeister, M. and Schulte, P.M. 2006. Intraspecific variation in thermal tolerance and heat shock protein gene expression in common killifish, *Fundulus heteroclitus*. *Journal of Experimental Biology* 209: 2859-2872 (Ex. 91).]

* “Pacific salmon are well known for their natal homing and low dispersal across diverse habitats (Groot and Margolis 1991), resulting in populations that are adapted to their particular environment, even at a local level of a few kilometers (Taylor 1991; Fraser et al. 2011).”[Id., citing Groot, C. and Margolis, L. 1991. *Pacific salmon life histories*. University of British Columbia, Vancouver; Taylor, E.B., 1991. A review of local adaptation in Salmonidae, with particular reference to Pacific and Atlantic salmon. *Aquaculture* 98: 185-207 (Ex. 92); Fraser, D.J., Weir, L.K., Bernatchez, L., Hansen, M.M. and Taylor, E.B. 2011. Extent and scale of local adaptation in salmonid fishes: review and meta-analysis. *Heredity* 106: 404-420 (Ex. 93).]

* “Larson et al. (2017) found genetic differences among local populations of adult sockeye salmon in the Wood River system in Bristol Bay relative to water temperatures at which spawning occurs. Physiology (Crossin et al. 2004; Eliason et al. 2017) and morphology . . . also have been correlated with local environmental conditions in adults relative to water temperature.”[Id., citing Larson, W.A., Limborg, M.T., McKinney, G.J., Schindler, D.E., Seeb, J.E. and Seeb, L.W., 2017. Genomic islands of divergence linked to ecotypic variation in sockeye salmon. *Molecular Ecology* 26: 554- 570 (Ex. 94); Crossin, G.T., Hinch, S.G., Farrell, A.P., Higgs, D.A., Lotto, A.G., Oakes, J.D. and Healey, M.C. 2004. Energetics and morphology of sockeye salmon: effects of upriver migratory distance and elevation. *Journal of Fish Biology* 65: 788-810 (Ex. 95); Eliason, E.J., Gale, M.K., Whitney, C.K., Lotto, A. and Hinch, S.G. 2017. Intraspecific differences in

endurance swim performance and cardiac size in sockeye salmon (*Oncorhynchus nerka*) parr tested at three temperatures. *Canadian Journal of Zoology* 95: 425-432 (Ex. 96).]

* “Egg development (Beacham and Murray 1987; Murray and Beacham 1987; Whitney et al. 2013, 2014) and temperature tolerance (Chen et al. 2013), growth rates (Beer and Anderson 2001), and swimming performance of fry (Sopinka et al. 2013, Eliason et al. 2017) and adults (Eliason et al. 2011) may be population specific.”[Id., citing Beacham, T.D. and Murray, C.B., 1987. Adaptive variation in body size, age, morphology, egg size, and developmental biology of chum salmon (*Oncorhynchus keta*) in British Columbia. *Canadian Journal of Fisheries and Aquatic Sciences* 44: 244-261 (Ex. 97); Murray, C.B. and Beacham, T.D. 1987. The development of Chinook *Oncorhynchus tshawytscha*) and chum salmon (*Oncorhynchus keta*) embryos and alevins under varying temperature regimes. *Canadian Journal of Zoology* 65: 2672-2681 (Ex. 98); Whitney, C.K., Hinch, S.G. and Patterson, D.A. 2013. Provenance matters: thermal reaction norms for embryo survival among sockeye salmon *Oncorhynchus nerka* populations. *Journal of Fish Biology* 82: 1159-1176 (Ex. 99); Whitney, C.K., Hinch, S.G. and Patterson, D.A., 2014. Population origin and water temperature affect development timing in embryonic sockeye salmon. *Transactions of the American Fisheries Society* 143: 1316-1329 (Ex. 100); Chen, Z., Anttila, K., Wu, J., Whitney, C.K., Hinch, S.G. and Farrell, A.P. 2013. Optimum and maximum temperatures of sockeye salmon (*Oncorhynchus nerka*) populations hatched at different temperatures. *Canadian Journal of Zoology* 91: 265-274 (Ex. 101); Beer, W.N. and Anderson, J.J., 2001. Effect of spawning day and temperature on salmon emergence: interpretations of a growth model for Methow River Chinook. *Canadian Journal of Fisheries and Aquatic Sciences* 58: 943-949 (Ex. 102); Sopinka, N.M., Hinch, S.G., Lotto, A.G., Whitney, C.K. and Patterson, D.A. 2013. Does among population variation in burst swimming performance of sockeye salmon *Oncorhynchus nerka* fry reflect early life migrations? *Journal of Fish Biology* 83: 1416-1424 (Ex. 103); (Ex. 96) (the revised PD cites the other publication included in this quote).]

* “[A]cknowledg[ing] and consider[ing] intraspecific variability in performance traits (e.g., growth, survival, etc.) and environmental tolerance limits to understand how species and populations will respond to a changing environment is critical when assessing the impacts of environmental alterations (Peterson et al. 2019), especially with regards to water temperature (Eliason et al. 2017, Bennett et al. 2019).”[Id., citing Peterson, M.L., Doak, D.F. and Morris, W.F. 2019. Incorporating local adaptation into forecasts of species’ distribution and abundance under climate change. *Global Change Biology* 25: 775-793 (Ex. 104); (Ex. 96); Bennett, S., Duarte, C.M., Marba, N. and Wernberg, T. 2019. Integrating within-species variation in thermal physiology into climate change ecology. *Philosophical Transactions of the Royal Society B* 374(1778) p.20180550 (Ex. 105).]

* “Adelfio et al. (2018) showed the minor increases in spring temperatures would accelerate the emergence timing of Coho salmon fry on the Copper River Delta, AK. by up to 30 days, which could have effects on the survival of the fry and later life-history stages.”[Id. at 4, citing Adelfio, L.A., Wondzell, S.M., Mantua, N.J. and Reeves, G.H., 2018. Warm winters reduce landscape-scale variability in the duration of egg incubation for Coho Salmon (Ex. 106).]

D. Gordon H. Reeves, Ph.D., & Susan Lubetkin, Ph.D., *Uncertainties of the Analyses of Altered Flows as discussed in FEIS* (Aug. 20, 2020)

Dr. Reeves also worked with Dr. Lubetkin, an environmental statistician, to write a joint report analyzing the FEIS and altered flows from the proposed Pebble mine. [Gordon H. Reeves, Ph.D., & Susan Lubetkin, Ph.D., *Uncertainties of the Analyses of Altered Flows as discussed in FEIS* (Aug. 20, 2020) (Ex. 12).] They found that “approving a permit for the proposed mine based on the results and conclusions in the FEIS is likely to result in large and irreparable harm to the fish populations in the affected streams and have potential ecological, economic, and social consequences to the affected streams and throughout the Bristol Bay area.” [Id. at 1.]

Dr. Reeves and Dr. Lubetkin also made the following observations, relying on references that the revised PD does not cite:

* “Adults require habitat for holding prior to spawning and to escape predators while spawning to spawn successfully (Quinn 2018). These are generally pools and deeper parts of the channel that are in close proximity to the spawning location. Reduction of flows would likely decrease the availability of these critical habitats and, thus, reduce spawning success, even if the availability of the actual spawning habitat remains unchanged.” [Id. at 4, citing Quinn, T.P. 2018. *The behavior and ecology of Pacific salmon and trout*. University of Washington press.]

* “Additionally, lower flows during spawning results in fish selecting and using areas closer to thalweg, the transect along the deepest part of the channel (May et al. 2009). Because during high flows the thalweg tends to have higher velocities than areas outside of it, redds located near it have a higher probability of being scoured (modified or destroyed from the movement of gravel by the flow) than those closer to the stream margins.” [Id., citing May, C.L., Pryor, B., Lisle, T.E. and Lang, M. 2009. *Coupling hydrodynamic modeling and empirical measures of bed mobility to predict the risk of scour and fill of salmon redds in a large regulated river*. *Water Resources Research* 45 doi:10.1029/2007WR006498 (Ex. 107).]

* “Fish use completely different habitat at night – generally in areas of slow velocity on the margins of streams (Reeves et al. 2010). Lower flows would likely reduce the availability of these essential habitats.” [Id. at 4–5, citing Reeves, G.H., Grunbaum, J.B. and Lang, D.W. 2010. *Seasonal variation in diel behavior and habitat use by age 1+ Steelhead (Oncorhynchus mykiss) in Coast and Cascade Range streams in Oregon, USA*. *Environmental Biology of Fishes* 87: 101-111 (Ex. 108).]

* “These areas [off-channel habitats] are habitats critical to the growth and survival of salmonids fry (Moore and Gregory 1988); a reduction in their availability could affect the productivity of affected fish populations.” [Id. at 6, citing Moore, K.M. and Gregory, S.V., 1988. *Summer habitat utilization and ecology of cutthroat trout fry (Salmo clarki) in Cascade Mountain streams*. *Canadian Journal of Fisheries and Aquatic Sciences* 45: 1921-1930 (Ex. 109).]

* “Off-channel habitats are generally much more productive for juvenile salmonids than those in the main channel (Bellmore et al. 2013).” [Id., citing Bellmore, J.R., Baxter, C.V., Martens, K. and Connolly, P.J.]

2013. The floodplain food web mosaic: a study of its importance to salmon and steelhead with implications for their recovery. *Ecological Applications* 23: 189-207 (Ex. 110).]

* “The condition of juvenile Coho salmon in the Kwethluk River, Alaska (Malison et al. 2016) . . . was higher in off-channel habitats than in the main channel.”[Id., citing Malison, R.L., Kuzishchin, K.V. and Stanford, J.A. 2016. Do beaver dams reduce habitat connectivity and salmon productivity in expansive river floodplains? *PeerJ*, 4, p.e2403 (Ex. 111).]

E. Matthew Schweisberg, Pebble Mine Final Environmental Impact Statement (FEIS): Anticipated Adverse Impacts to Wetlands (Aug. 22, 2020)

Matthew Schweisberg, a wetlands ecologist and wildlife biologist who worked for EPA for nearly 33 years before retiring,[Wetland Strategies & Solutions, LLC, About Matt Schweisberg, <https://wetlandsns.com/about-matt-schweisberg/>.] found that the 2020 Mine Plan “would clearly cause or contribute to significant degradation of the affected aquatic resources, in violation of Section 230.10(c) of the [404(b)(1)] Guidelines.”[Matthew Schweisberg, Pebble Mine Final Environmental Impact Statement (FEIS): Anticipated Adverse Impacts to Wetlands at 3 (Aug. 22, 2020) (Ex. 13); see also Michael Gracz, Ph.D., Is a Finding of Significant Degradation in a 404(b)(1) Analysis of the Pebble Project Scientifically Supportable? at 7 (May 24, 2019) (“Given the high level of unavoidable impacts to this important fishery area that were found using a conservative analysis [a decision that the Pebble Project would not cause] significant degradation appears to be unsupported.”) (Ex. 34).] Like many of the experts reviewing the FEIS, he thought it severely underestimated impacts but found that even “the underestimated numbers of impacted wetlands and streams provided in the FEIS” demonstrated that the proposed mine “would have an immense, unprecedented, and uncomensable [sic] impact on the Bristol Bay watershed.”[Id. at 2.] He found this despite changes made to the project during the NEPA process.[Id. (“Despite revisions and additional information included in the FEIS — which now includes the preferred alternative of the Northern Transportation Corridor — the project still would cause devastating adverse impacts to wetlands and other water resources within the Bristol Bay watershed.”).]

Schweisberg also made the following observations, relying on references that the revised PD does not cite:

* “The more habitat complexity, the higher the productivity of Chinook salmon populations.”[Id. at 3, citing Northwest Fisheries Science Center, NOAA, January 6, 2020; <https://www.fisheries.noaa.gov/feature-story/restoring-side-channels-can-boost-salmon-recovery-puget-sound-rivers-new-research>” (Ex. 112).]

* “Side channels that incorporate a diversity of flowing- and standing-water areas are most likely to provide the variety of habitats (i.e., spawning, summer rearing, and overwintering) required by salmonids to complete their life cycle.”[Id., citing Rosenfeld, J.S., Raeburn, E., Carrier, P.C. and Johnson, R. *North American Journal of Fisheries Management* 28:1108–1119, 2008.]

F. Michael Gracz, Ph.D., Is a Finding of Significant Degradation in a 404(b)(1) Analysis of the Pebble Project Scientifically Supportable? (May 24, 2019).

Dr. Michael Gracz, who has over 25 years' experience in field ecology and research specializing in wetlands and peatlands in Alaska, [LinkedIn, Dr. Michael Gracz, <https://www.linkedin.com/in/alaskamikegracz/>.] analyzed the proposed Pebble Mine and concluded that "the high level of unavoidable impacts to this important fishery area that were found using a conservative analysis" indicated that the project would cause significant degradation. [Michael Gracz, Ph.D., Is a Finding of Significant Degradation in a 404(b)(1) Analysis of the Pebble Project Scientifically Supportable? (May 24, 2019) (Ex. 34).] He also made the following observation, relying on references that the revised PD does not cite:

* "Local adaptation is responsible for much of the variation observed among Pacific Salmon populations in morphological and meristic characteristics, behavior, development and growth rates, physiological and biochemical features, and life history traits (Taylor 1991). It is seen on a 'broad geographic scale (between populations separated by hundreds of kilometers) and micro-geographically (between populations separated by a few kilometers or less) and even between "seasonal races" inhabiting the same habitats' (Taylor 1991)." [Id. at 3, citing Taylor, E.B. 1991 (Ex. 92).]

G. Rachel A. Hovel, Ph.D., Assessment of Pebble Mine Draft EIS: Salmonid life history diversity and impacts to Iliamna Lake (May 2019)

Dr. Rachel Hovel is an aquatic ecologist who studies fishes and invertebrates across a range of freshwater habitats, including Alaska and the Canadian Arctic. [Dr. Rachel Hovel bio, Univ. of Maine, Farmington, <https://www.umfmaine.edu/about/faculty-staff/rachel-hovel/>.] Dr. Hovel analyzed the proposed Pebble Mine, as presented in the draft EIS. [Rachel A. Hovel, Ph.D., Assessment of Pebble Mine Draft EIS: Salmonid life history diversity and impacts to Iliamna Lake (May 2019) (Ex. 36).] She faulted the draft EIS for not adequately addressing how the proposed mine would impact fish populations and habitat. [Id.] She also made the following observations, relying on references that the revised PD does not cite:

* "The literature on fisheries management strongly argues for management at the level of fine-scale population structure (Hilborn et al. 2003, Olsen et al. 2003, Schindler et al. 2010, Dann et al. 2013). Within these sub-stocks and differentiated populations exists a wide diversity in spawn timing, annual population abundance, and ecotypes (Ramstad et al. 2004, Gomez-Uchida et al. 2011, Quinn et al. 2012, Larson et al. 2019)." [Id. at 3, citing Ramstad, K. M., C. A. Woody, G. K. Sage, and F. W. Allendorf. 2004. Founding events influence genetic population structure of sockeye salmon (*Oncorhynchus nerka*) in Lake Clark, Alaska. *Molecular Ecology* 13:277–290 (Ex. 113); Gomez-Uchida, D., J. E. Seeb, M. J. Smith, C. Habicht, T. P. Quinn, and L. W. Seeb. 2011. Single nucleotide polymorphisms unravel hierarchical divergence and signatures of selection among Alaskan sockeye salmon (*Oncorhynchus nerka*) populations. *BMC evolutionary biology* 11:48 (Ex. 114) (the Revised PD cites the other publications relied on in this quote).]

* “The ‘beach spawning’ ecotype is genetically and phenotypically distinct from stream or river-spawning fish, and occurs elsewhere across the range of sockeye salmon; however, the ‘island beach’ spawners of Iliamna Lake represent a unique ecotype that is distinct from other lake-spawning populations (Blair and Quinn 1991, Blair et al. 1993, Stewart et al. 2003, Larson et al. 2019).”[Id., citing Blair, G. R., and T. P. Quinn. 1991. Homing and spawning site selection by sockeye salmon (*Oncorhynchus nerka*) in Iliamna Lake, Alaska. *Canadian Journal of Zoology* 69:176–181 (Ex. 115); Blair, G. R., D. E. Rogers, and T. P. Quinn. 1993. Variation in Life History Characteristics and Morphology of Sockeye Salmon in the Kvichak River System, Bristol Bay, Alaska. *Transactions of the American Fisheries Society* 122:550–559 (Ex. 116) (the revised PD cites the other publication relied on in this quote).]

* “During freshwater residence, the diet of juvenile sockeye salmon is comprised of cladoceran and copepod zooplankton, reflecting both prey availability and feeding selectivity (Burgner 1964, Rogers 1968, Quinn 2005).”[Id. at 15, citing Burgner, R. L. 1964. Factors influencing production of sockeye salmon (*Oncorhynchus nerka*) in lakes of southwestern Alaska. *SIL Proceedings, 1922-2010* 15:504–513 (Ex. 117) (the revised PD cites the other publications relied on in this quote).]

* “[F]ish incur the possibility of cumulative impacts of the ferry terminal across life stages, and the [Draft Environmental Impact Statement (DEIS)] fails to acknowledge cumulative exposure or assess associated risks. Additionally, the DEIS fails to account for any interactions among stressors that juveniles and adults may experience, such as disturbances to shoreline habitat, noise or turbulence, or encounters with contaminants (e.g. copper and other heavy metals, fine sediments). To thoroughly evaluate population-level impacts, the USACE must include an analysis of impacts across life stages and the ways in which stressors can interact (Power 1997, Hodgson and Halpern 2019).”[Id. at 14, citing Power, M. 1997. Assessing the effects of environmental stressors on fish populations. *Aquatic Toxicology* 39:151–169 (Ex. 118); Hodgson, E. E., and B. S. Halpern. 2019. Investigating cumulative effects across ecological scales. *Conservation Biology* 33:22–32 (Ex. 119).]

* “Additionally, important habitat characteristics can vary greatly on small spatial scales in both streams and lakes (e.g. Torgersen et al. 1999, Armstrong et al. 2013, Hovel et al. 2017), and identifying percentage of habitat lost can ignore this biologically relevant variation.”[Id. at 4, citing Torgersen, C. E., D. M. Price, H. W. Li, and B. A. McIntosh. 1999. MULTISCALE THERMAL REFUGIA AND STREAM HABITAT ASSOCIATIONS OF CHINOOK SALMON IN NORTHEASTERN OREGON. *Ecological Applications* 9:301–319 (Ex. 120); Hovel, R. A., J. T. Thorson, J. L. Carter, and T. P. Quinn. 2017. Within-lake habitat heterogeneity mediates community response to warming trends. *Ecology* (Ex. 121) (the revised PD cites the other publication relied on in this quote).]

* “[C]urrent 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 (Crozier et al. 2008, Schindler et al. 2008, Bisson et al. 2009).”[Id., citing Crozier, L. G., A. P. Hendry, P. W. Lawson, T. P. Quinn, N. J. Mantua, J. Battin, R. G. Shaw, and R. B. Huey. 2008. Potential responses to climate change in organisms with complex life histories: evolution and plasticity in Pacific

salmon. *Evolutionary Applications* 1:252 (Ex. 122); Bisson, P. A., J. B. Dunham, and G. H. Reeves. 2009. Freshwater Ecosystems and Resilience of Pacific Salmon: Habitat Management Based on Natural Variability. *Ecology and Society* 14:article 45 (Ex. 123) (the revised PD cites the other publication relied on in this quote).]

* “Juvenile sockeye salmon undergo daily vertical migrations; individuals occupy deeper waters during the day to avoid predation, and at night move within ~3 meters of the surface to feed (Rogers et al. 2002, Scheuerell and Schindler 2003, Hansen et al. 2014).” [Id. at 7, citing Scheuerell, M. D., and D. E. Schindler. 2003. Diel vertical migration by juvenile sockeye salmon: Empirical evidence for the antipredation window. *Ecology* 84:1713–1720 (Ex. 124); Hansen, A. G., D. A. Beauchamp, and E. Lowery. 2014. Growth, distribution and abundance of pelagic fishes in Lake Washington. Seattle (Ex. 125) (the revised PD cites the other publication relied on in this quote).]

* “Iliamna Lake is obligate habitat for one or more years of life for the vast majority of sockeye salmon produced in the Kvichak watershed (excluding Lake Clark; however, fish rearing in Lake Clark use Iliamna Lake as a migration corridor) (Rich et al. 2009), and an intact food web is essential to support juvenile fish.” [Id., citing Rich, H. B., T. P. Quinn, M. D. Scheuerell, and D. E. Schindler. 2009. Climate and intraspecific competition control the growth and life history of juvenile sockeye salmon (*Oncorhynchus nerka*) in Iliamna Lake, Alaska. *Canadian Journal of Fisheries and Aquatic Sciences* 66:238–246 (Ex. 127).]

* “Juvenile sockeye salmon occupy open-water habitats in Lake Iliamna for one or two years of their life (i.e. smolts migrate to the ocean at age-1 or age-2); thus, these areas of the lake are essential to salmon production in the Kvichak watershed (Rich et al. 2009, Tillotson and Quinn 2016). Distribution of juvenile sockeye is heterogeneous within the lake, largely reflecting spawning densities, and pre-smolt juvenile sockeye are primarily located in open water habitats at the eastern regions of the lake (Rich 2006).” [Id. at 7, (Ex. 127); Rich, H. B. 2006. Effects of climate and density on the distribution, growth, and life history of juvenile sockeye salmon (*Oncorhynchus nerka*) in Iliamna Lake, Alaska. University of Washington (Ex. 128); Tillotson, M. D., and T. P. Quinn. 2016. Beyond Correlation in the Detection of Climate Change Impacts: Testing a Mechanistic Hypothesis for Climatic Influence on Sockeye Salmon (*Oncorhynchus nerka*) Productivity. *PLOS ONE* 11:e0154356 (Ex. 129).]

* “Oceanward migrations of juvenile sockeye salmon depend on a combination of factors, including temperature and ice condition (Hartman et al. 1967). Additionally, smolt outmigration has been observed to occur primarily in surface waters and as early as April, with a preference for “littoral shallow areas” (Hartman et al 1967).” [Id. at 14, citing Hartman, W. L., W. R. Heard, and B. Drucker. 1967. Migratory behavior of sockeye salmon fry and smolts. *Journal of the Fisheries Research Board of Canada* 24:2069–2099 (Ex. 130).]

H. Sarah O’Neal, Technical comments regarding fish and aquatic habitat in the Pebble Project Draft Environmental Impact Statement (July 1, 2019).

Sarah O'Neal, a Ph.D. candidate with over 20 years of experience in freshwater ecology in salmon ecosystems (including over 10 years of experience in Bristol Bay), [LinkedIn, Sarah O'Neal, <https://www.linkedin.com/in/sarahlouiseoneal/>.] concluded that “water quality will nearly inevitably suffer significant degradation during the course of mine construction and operation, which will ultimately impact fish and other aquatic life.” [Sarah O'Neal, Toxicological shortcomings of the Pebble Project Final Environmental Impact Statement (FEIS) at 3 (Aug. 22, 2020) (Ex. 10).] She found that the draft EIS “grossly underestimate[d] impacts to fish and their habitats.” [Sarah O'Neal, Technical comments regarding fish and aquatic habitat in the Pebble Project Draft Environmental Impact Statement at 89 (July 1, 2019) (Ex. 55).] She also made the following observations, relying on references that the revised PD does not cite:

* “Countless evidence exists in the peer-reviewed literature that temperature, off-channel habitat, groundwater influence, instream structure and cover, seasonal variability, and many other factors all combine in unique combinations to produce the diversity of habitats that support Bristol Bay salmon (Conder and Annear 1987, Nickelson et al. 1992, Quinn 2005, Lancaster and Downes 2010, Reeves et al. 2011, Hamann et al. 2014).” [Id. at 8, citing Lancaster J, and B. J. Downes. 2010. Linking the hydraulic world of individual organisms to ecological processes: putting ecology into ecohydraulics. *River Research and Applications* 26:385–403 (Ex. 131); Reeves, G.H., J.D. Sleeper, and D.W. Lang. 2011. Seasonal changes in habitat availability and the distribution and abundance of salmonids along a stream gradient from headwaters to mouth in coastal Oregon. *Transactions of the American Fisheries Society*. 140:537–548 (Ex. 132); Hamann, E.J., B.P. Kennedy, D.C. Whited, and J.A. Stanford. 2014. Spatial variability in spawning habitat selection by Chinook Salmon (*Oncorhynchus tshawytscha*) in a wilderness river. *River research and applications* 30:1099–1109 (Ex. 133) (the revised PD cites the other publications relied on in this quote).]

* “Failure to incorporate groundwater influence into habitat selection alone ignores a vast literature clearly highlighting the importance of groundwater to Pacific salmon throughout their range, and particularly in Alaska where ice is a prominent habitat feature (Lorenz and Eiler 1989, Reynolds 1997, Hall and Wissmar 2004, Quinn 2005).” [Id., citing Lorenz, J.M., and J.H. Eiler. 1989. Spawning habitat and red characteristics of sockeye salmon in the glacial Taku River, British Columbia and Alaska. *Transactions of the American Fisheries Society* 118:495– 502 (Ex. 134); Reynolds, J.B. 1997. Ecology of overwintering fishes in Alaskan freshwaters. Pages 281–302. *Freshwaters of Alaska*. Springer; Hall, J.L., and R.C. Wissmar. 2004. Habitat factors affecting sockeye salmon red site selection in off-channel ponds of a river floodplain. *Transactions of the American Fisheries Society* 133: 1480– 1496 (the revised PD cites the other publication relied on in this quote).]

* “The DEIS also fails to consider the global importance of Nushagak River Chinook salmon (*Oncorhynchus tshawytscha*) given dwindling populations of Chinook even in relatively undeveloped and historically productive watersheds like the Yukon and the Kuskokwin (Figure 5, Ohlberger 2016). The Nushagak River supports one of the world’s largest remaining populations of Chinook salmon (ADFG 2013, Schoen et al. 2017, Ohlberger et al. 2018). Chinook escapement to the Nushagak River averaged 146,074 fish per year from 1976–2005 (ADFG 2013, Ohlberger et al. 2016). The only other river

exceeding that level of escapement was the Kuskokwim River, also in Western Alaska, for which the average for the same time period was 160,585 (Ohlberger et al. 2016).”[Id. at 13, citing Ohlberger, J., Scheuerell, M.D. and Schindler, D.E., 2016. Population coherence and environmental impacts across spatial scales: a case study of Chinook salmon. *Ecosphere*, 7(4), p.e01333 (Ex. 136); Ohlberger, J., E.J. Ward, D.E. Schindler, and B. Lewis. 2018. Demographic changes in Chinook salmon across the Northeast Pacific Ocean. *Fish and Fisheries* 19:533–546 (Ex. 137); Schoen, E.R., M.S. Wipfli, E.J. Trammell, D.J. Rinella, A.L. Floyd, J. Grunblatt, M.D. McCarthy, B.E. Meyer, J.M. Morton, J.E. Powell, A. Prakash, M.N. Reimer, S.L. Stuefer, H. Toniolo, B.M. Wells, and F.D.W. Witmer. 2017. Future of Pacific Salmon in the Face of Environmental Change: Lessons From One of the World's Remaining Productive Salmon Regions. *Fisheries* 42:538--553 (Ex. 138).]

* “The importance of intermittent streams for rearing, spawning, and influencing downstream habitat are well documented, as described in the Introduction herein (Wigington et al. 2006 and many others).”[Id. at 33, citing Wigington, P. J., J.L. Ebersole, M.E. Colvin, S.G. Leibowitz, B. Miller, B. Hansen, H.R. Lavigne, D. White, J.P. Baker, M.R. Church, J.R. Brooks, M.A. Cairns, and J.E. Compton. 2006. Coho salmon dependence on intermittent streams. *Frontiers in Ecology and the Environment* 4:513–518 (Ex. 139).]

I. Susan Lubetkin, Ph.D., Alaska Mining Spills (April 2022)

Dr. Susan Lubetkin has over 20 years of experience in environmental statistics and mathematical modeling. In this report, released in April 2022, Dr. Lubetkin reviewed government records for the five major hardrock mining operations in Alaska and concluded that the risk of spills was consistently underestimated during the permitting process.[Susan Lubetkin, Ph.D., Alaska Mining Spills (April 2022) (Ex. 78).] This report found that the NEPA analysis leading up to approval of these five mines inaccurately and insufficiently described the risks of spills and related impacts, such that decisionmakers and the public have not been able to understand the full consequences of permitting hardrock mining.[Id. at 384.] While not directly related to EPA’s proposed restrictions here, this report is important context and its findings relevant to section 6.2 of the revised PD.

J. Christopher Sergeant, et al., Risks of mining to salmonid-bearing watersheds (July 2022)

Since the release of the revised PD, a number of researchers published a new paper synthesizing the impact mining poses to salmon-bear watersheds in the journal *Science Advances*. [Sergeant, C.J. et al., Risks of mining to salmonid-bearing watersheds, *Sci. Adv.* 8, eabn0929 (2022) (Ex. 161)] The paper is the result of an interdisciplinary effort to integrate information on hydrology, river ecology, aquatic toxicology, biology, and mining policy, and concludes that mining harms salmonid-bearing watersheds due to pollution, destroying streams, and altering streamflows. The paper notes that “[w]hile water treatment and storage facilities provide options for managing water quality and quantity in the short term, treating wastewater to match the natural flow regime ‘in perpetuity’ creates an expensive post-mining legacy that can be challenging to maintain.”[Id. at 7.] These challenges are exacerbated by a changing climate with shifting “seasonal and spatial patterns of precipitation, air temperature, streamflow, and water temperature.”[Id.] The paper also describes how mines and their related

infrastructure can modify or eliminate salmon habitat through the filling and burial of streams and wetlands, as well as the risks posed to that habitat by tailings storage facilities.[Id.] It also describes the impacts from pollution, which “can continue long after mine closure, especially where acid-generating rock is present and tailings impoundment facilities exist.”[Id. at 8.] The paper concludes that these cumulative stressors from mining can harm salmon-bearing watersheds “via multiple pathways of impact.”[Id.]

EPA Response

EPA considered the references that the commenter suggested and incorporated relevant references into the FD (see Sections 3 and 4 and Appendix B of the FD).

10.0.3 Trustees for Alaska et al. (Doc. #0831, pp. 28–29)

Comments on EPA Region 10’s consideration of the USACE administrative record, which contains documents pertaining to the USACE Pebble Mine permit decision. EPA Region 10 included in the docket for this proposed determination all portions of the voluminous administrative record for the USACE Pebble Mine permit decision that are relevant to EPA’s decision-making and that EPA considered in its decision to issue this proposed determination. EPA Region 10 is soliciting comments that identify any other documents from the USACE administrative record that EPA should consider in its decision-making for this CWA Section 404(c) review process.

EPA appropriately relied on analysis by the Corps, where relevant and scientifically supported. However, many of the issues identified by the EPA and other cooperating agencies throughout the NEPA process were inadequately resolved, if at all, in the FEIS.[See Trustees for Alaska, Examples of Comments from Cooperating Agencies on the Preliminary Final Environmental Impact Statement for the Proposed Pebble Mine that the Final Environmental Impact Statement Disregarded or Failed to Adequately Assess (July 2021) (Ex. 1).] For example, EPA commented that the PFEIS inappropriately downplayed the 2020 Mine Plan’s impacts on the Portfolio Effect and genetic diversity; however, the FEIS reached the same conclusion as that criticized by the EPA without offering additional support or discussion.[Id. at 61.] Similarly, EPA requested that the FEIS include a quantification of the degradation of downstream habitats, which was also not adopted.[Id. at 4.]

Similarly, numerous scientific reports have faulted the DEIS and FEIS for underestimating impacts, failing to consider applicable science, and presenting a flawed analysis unsupported by data.[See Exs. 2–77.] EPA should include all critical analyses of the DEIS, PFEIS, and FEIS in this record. For example, Daniel E. Schindler, Ph.D., a professor in the School of Aquatic and Fishery Sciences at the University of Washington in Seattle and scientist who has done extensive field work in Bristol Bay for decades, faulted the DEIS for concluding that the proposed Pebble Mine would have “no long-term substantial risks . . . to Bristol Bay ecosystems” as unsupported by science. Rather, Dr. Schindler found it “undeniable, based on the data and information available, that the long-term risks of the Pebble project to the Nushagak and Kvichak watersheds” would be “substantially higher.”[Dr. Daniel E. Schindler, Scientific Concerns about the Draft EIS for the Proposed Pebble Mine at 1 (June 17, 2019) (Ex. 46).] While the Corps ultimately

reached the only defensible decision when denying the permit, the sweeping conclusions of the FEIS that there would be no detectable impact to fisheries are simply unsupportable.[See, e.g., Ex. 2 at 17–20 (discussing different conclusions of BBWA and FEIS, and collecting expert agency critiques of the FEIS with regard to fish); see also Ex. 5; Gordon H. Reeves, Ph.D., Review of the Assessment of Water Temperatures (Aug. 20, 2020) (Ex. 6); Susan C. Lubetkin, Ph.D., & Gordon H. Reeves, Ph.D., A review of Pebble Project Final EIS Section 4.24, Fish Values: PHABSIM/HABSYN model estimates of salmonid usable habitat areas in the presence of Pebble Mine are baseless (Aug. 19, 2020) (Ex. 8).] As a result, in the revised PD, EPA reasonably distinguished the Corps' findings in the FEIS that the 2020 Mine Plan would not result in significant adverse effects on fish and explained its scientifically-grounded view that the FEIS underestimated impacts of the 2020 Mine Plan to aquatic resources.

EPA Response

EPA considered the references that the commenter suggested and incorporated relevant references into the FD. Appendix B of the FD addresses issues related to two key points: (1) in many cases, the FEIS states that impacts would not result in significant adverse effects on aquatic resources, conclusions that often are not supported by the evidence provided in the FEIS; and (2) the impacts reported in the FEIS likely underestimate or underpredict the actual impacts that the 2020 Mine Plan would have on aquatic resources in the SFK, NFK, and UTC watersheds.

10.0.4 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 77–78)

Response to Question #11 – Numerous USACE administrative record documents support EPA's proposed 404(c) action

In its solicitation of comments, EPA Region 10 requests comments on EPA Region 10's consideration of the USACE administrative record, which contains documents pertaining to the USACE Pebble Mine permit decision. EPA Region 10 included in the docket for this proposed determination all portions of the voluminous administrative record for the USACE Pebble Mine permit decision that are relevant to EPA's decision-making and that EPA considered in its decision to issue this proposed determination. EPA Region 10 is soliciting comments that identify any other documents from the USACE administrative record that EPA should consider in its decision-making for this CWA Section 404(c) review process.

BBNC has reviewed the entire USACE administrative record and was intimately involved in the NEPA/404 permitting process. In Appendices C and D to this comment, we are submitting additional USACE administrative record documents that EPA should consider. These documents include:

- * Expert and technical reports reviewing the draft and final EIS documents
- * BBNC letters to the Army Corps and other permitting agencies on the EIS process, 404 permit public notice, 401 certification, transportation corridor property issues, National Historic Preservation Act issues, Coast Guard permitting;
- * BBNC letters to EPA regarding the Section 404(c) process;

- * Cooperating agency meeting notes from the EIS process;
- * Cooperating agency correspondence to USACE (specifically letters from U.S. Fish and Wildlife Service, State of Alaska, National Marine Fisheries Service, National Parks Service, Lake & Peninsula Borough, U.S. Coast Guard, Curyung Tribal Council, and Nondalton Tribal Council);
- * PLP responses to USACE Requests for Information (specifically PLP responses to RFI numbers 54, 59, 59a, 62, 69, 94, 98, and 150);
- * Internal USACE and other agency memoranda regarding the project's impacts.

EPA Response

EPA agrees with the commenter that the record clearly demonstrates that the proposed mine would have unacceptable adverse effects on anadromous fishery areas. Section 4 of the FD provides the basis for EPA's determination that discharges of dredged or fill material associated with developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds.

10.0.5 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 2–5)

Appendix C—Relevant Record Documents from Army Corps Administrative Record (file no. POA-2017-00271) and Associated Environmental Impact Statement for the Proposed Pebble Mine Project

In the 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 ("2022 PD") EPA asks the public to submit comments that identify documents from the U.S. Army Corps of Engineers ("USACE") administrative record that EPA Region 10 should consider in its decision-making process for this Clean Water Act ("CWA") Section 404(c) action.

Bristol Bay Native Corporation ("BBNC") closely followed the 2014 Watershed Assessment, NEPA, and CWA processes for the proposed Pebble Mine and thus has extensive knowledge of the administrative records available to support EPA's 2022 PD. In this Appendix, BBNC has attached relevant documents from these administrative records, including the following:

- * BBNC letters to the Army Corps and other permitting agencies on the EIS process, 404 permit public notice, 401 certification, transportation corridor property issues, National Historic Preservation Act issues, Coast Guard permitting;
- * BBNC letters to EPA regarding the Section 404(c) process;
- * Cooperating agency meeting notes from the EIS process;
- * Cooperating agency correspondence to USACE (specifically letters from U.S. Fish and Wildlife Service, State of Alaska, National Marine Fisheries Service, National Parks Service, Lake & Peninsula Borough, U.S. Coast Guard, Curyung Tribal Council, and Nondalton Tribal Council);

* PLP responses to USACE Requests for Information (specifically PLP responses to RFI numbers 54, 59, 59a, 62, 69, 94, 98, and 150);

* Internal USACE and other agency memoranda regarding the project's impacts.

These documents demonstrate the conservative nature of USACE's Final Environmental Impact Statement findings and the concrete scientific basis for the EPA's action to protect the headwaters of Bristol Bay from the unacceptable adverse effects from mining the Pebble deposit. Additionally, BBNC's correspondence to EPA, USACE, and PLP over more than a decade demonstrates BBNC's resolved opposition to the proposed Pebble Mine Project and support for EPA 404(c) action to protect Bristol Bay.

[Table of BBNC Letters and Comments on 404(c), Watershed Assessment, EIS, and 404 Permit Application included in submission here]

[Table of Cooperating Agency Letters, Meeting Notes, and Comments Regarding the EIS and 404 Permit Application included in submission here]

[Table of PLP Responses to Army Corps Request for Information and Additional Section 404 Permitting Documents, Army Corps, NEPA Contractor (AECOM), and EPA Internal Memos and Documents included in submission here]

EPA Response

See EPA's response to comment 10.0.4.

10.0.6 Bristol Bay Native Corporation (BBNC) (Doc. #0832, pp. 2–9)

Appendix D—Scientific and Technical Reports Related to Army Corps Administrative Record (file no. POA-2017-00271) and Associated Environmental Impact Statement for the Proposed Pebble Mine Project

The 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 ("2022 PD") asks the public to submit comments that identify documents from the U.S. Army Corps of Engineers ("USACE") administrative record that EPA Region 10 should consider in its decision-making process for this Clean Water Act ("CWA") Section 404(c) action. Numerous highly-qualified scientific and technical experts submitted reports throughout the USACE CWA permitting process for the 2020 Mine Plan and associated National Environmental Policy Act ("NEPA") process as well as during EPA's peer-reviewed scientific process culminating in the 2014 Bristol Bay Watershed Assessment ("2014 Watershed Assessment"). These scientists closely reviewed baseline data and application materials from the Pebble Limited Partnership ("PLP") and concluded that impacts such as those posed by PLP's 2020 Mine Plan would cause significant adverse effects to the aquatic ecosystem.

Bristol Bay Native Corporation ("BBNC") closely followed the 2014 Watershed Assessment, NEPA, and CWA processes for the proposed Pebble Mine and thus has extensive knowledge of the administrative

records available to support EPA's 2022 PD. In this Appendix, BBNC has attached the most relevant scientific and technical reports from these administrative records, the vast majority of which were also submitted to the USACE record during the permitting process.

These reports demonstrate the conservative nature of USACE's Final Environmental Impact Statement findings and the concrete scientific basis for the EPA's action to protect the headwaters of Bristol Bay from the unacceptable adverse effects from mining the Pebble deposit.

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EPA Response

EPA considered the suggested references and incorporated relevant references into the FD (see Sections 3 and 4 and Appendix B of the FD).

10.0.7 Hazel Nelson (Doc. #2667-15, p. 44)

I'm - this, this little booklet is a summary. It's called Before Bristol Bay. It complements an app called 'Bristol Bay Online' that BBNC staff have put together. And I brought this today because, you know, not everything we're sharing may be remembered. But you can download our app, Bristol Bay Online, and it works without Wi-Fi, right? Is that right, Jason? Once you download it, it still works. So, you don't need Wi-Fi for it to work. And what it does is it shows the meanings of our place names, because our place names are, are something that it, it's tied to our lives, and it's the very meaning - it explains the meaning of why we live where we are.

So I, I won't read this little book with you, but we'll have a stack for you as part of our record today.

EPA Response

EPA recognizes the ecological value and importance of the Bristol Bay region's wild salmon populations, particularly for Alaska Native subsistence, culture, and traditions (see Sections 3 and 6 of the FD).

10.0.8 Anne Kahn (Doc. #2664-28, p. 22)

My maiden name is Anne Coray. C-O-R-A-Y, which I use for my writing. And I've written a number of articles for ADN, and other outlets in opposition to the Pebble Mine. I encourage anyone out there who has any questions regarding the tremendous risk that this mine presents to please read some of the things I've printed because there are really no open pit mines in in North America that have not turned toxic.

EPA Response

EPA agrees with the commenter that the discharges of dredged or fill material associated with developing the Pebble deposit would result in unacceptable adverse effects on anadromous fishery areas in the SFK, NFK, and UTC watersheds (see Section 4 of the FD).

10.0.9 Ivan Weber (Doc. #1029, pp. 3, 5)

Literature review reveals that little relevant work has been done on animal reproduction, particularly on those topics critical to projecting an understanding of the proposed Pebble Mine site geography, and of Bristol Bay.

Primary reference materials are listed at the end of the text of these comments. Suffice it to say that far too little research has been done, particularly on selenium, arsenic, lead, mercury, cadmium, cobalt, uranium and other heavy metals in aquatic, reducing and transitional environments --- and comparatively nothing has been done to synthesize the findings of prior work to make greatest sense of research reports.

(...)

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EPA Response

EPA agrees that development of the 2020 Mine Plan would result in water quality changes (see Section B.5.1 in Appendix B of the FD). Section 4.2 of the FD is not designed to be a full accounting of all the impacts associated with the 2020 Mine Plan. Rather, it is focused on a subset of the project's impacts from the discharge of dredged or fill material that the record demonstrates would result in unacceptable adverse effects on anadromous fishery areas.

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