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BY EMAIL AND U.S. MAIL

Program Manager
U.S. Army Corps of Engineers
645 G Street, Suite 100-921
Anchorage, AK 99501

Re: **Pebble Project Draft Environmental Impact Statement and Application for Clean Water Act Permit (POA-2017-00271)**

Dear Army Corps of Engineers:

Our firm represents the Bristol Bay Regional Seafood Development Association (“BBRSDA”). These comments are directed to the Pebble Limited Partnership’s application for a Clean Water Act permit to construct an open-pit mine and to Army Corps of Engineers’ Draft Environmental Impact Statement (“DEIS”) for the Pebble project.

Introduction

Bristol Bay is home to the most valuable wild salmon fishery in the world. The fishery is prized not only for its abundance – it produces more wild salmon than any other location on earth – but also for its self-sufficiency. Unlike most other areas worldwide where salmon are either cultivated or planted, Bristol Bay salmon need no farms, hatcheries, or human assistance other than basic management in the form of harvest limits. In a world of shrinking natural resources and dwindling habitat, the abundance of this wild salmon fishery is truly unique and increasingly rare.

The extraordinary success of the Bristol Bay fishery is rooted in Alaska’s wild, pristine interior that provides immaculate habitat ideal for wild salmon reproduction. Every summer, tens of millions of salmon return to Bristol Bay to run up its rivers and spawn in the pristine inland streams, wetlands, and lakes. Natural spawning and reproduction occurs in the untainted, pure waters of the Bristol Bay watershed. This is the heart of the fishery. This primeval, unspoiled

spawning and rearing habitat is unrivaled anywhere on earth. Left as it has been for millennia, it can support a thriving salmon population in perpetuity, providing a healthy and abundant source of food and jobs indefinitely for generations.

But as remote and isolated as the Bristol Bay habitat and fishery have remained, the legacy of a wild, natural 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. The science on this fundamental point is well-established and has been repeatedly proven by the loss or substantial degradation of virtually every naturally reproducing salmon fishery in the United States outside of Alaska. And while degraded habitat will undermine a salmon fishery, a toxic release or spill into an aquatic environment like Bristol Bay would cause irreparable long-term damage.

Beyond its ecological importance, the Bristol Bay salmon fishery generates immense economic value. Each year, the Bristol Bay commercial sockeye fishery generates revenue of \$1.2 billion and employs nearly 15,000 people in Alaska. In a state famous for its salmon, Bristol Bay accounts for almost half of the ex-vessel value of all salmon caught in Alaska. More astounding, Bristol Bay provides the world with 45% of the global supply of sockeye salmon (in recent years it has provided over 50%). Protected and preserved, the Bristol Bay salmon fishery will continue as an economic engine year after year, generation after generation.

The economic value of the fishery is far reaching. Residents of 48 different U.S. states either held commercial Bristol Bay salmon fishing permits or participated in the fishery as crew members in 2018. The fishery provides economic opportunity and a way of life to thousands of fishermen and their families, and it will continue to do so indefinitely if not degraded or destroyed. The fishery sustains local communities and generates extraordinary benefits for the State of Alaska. Grocers and cooks throughout the Lower 48 sell and promote wild sockeye, and wild salmon is valued by businesses and individuals throughout the country for its healthy, sustainable, environmentally friendly attributes. Over the last ten years, the Bristol Bay fishery has made tremendous strides capitalizing on these unique values by building a brand for Bristol Bay sockeye that emphasizes the high quality, abundance, and purity of the salmon. The fact that a wild salmon fishery cannot be outsourced or translocated only compounds its economic value to those who depend on it. Given dwindling resources and ever-increasing demand, the value of the Bristol Bay fishery will dramatically increase in the 21st century.

The Pebble project – a massive copper-gold-molybdenum porphyry mine placed at the headwaters of two critical salmon-spawning watersheds – proposes to put all of this at risk, and for very little comparative gain. The project proposes to trade twenty years of modest mining profits for the *permanent* risk of catastrophic impact to the salmon fishery, degraded habitat, and irreparable damage to the fishery's pristine reputation. Simple statistics – and the long history of mining disasters – prove the foolishness of this endeavor. To a self-sustaining resource, adding a permanent risk is no different than putting a time limit on that resource.

Even worse, the Army Corps appears ready to approve this project based on little more than superficial rhetoric and colorful graphics, not science. The DEIS is woefully inadequate and is an affront to sound biological and economic analysis. If the Army Corps issues this permit based on a finalized version of this DEIS, it will be doing so based on information and analysis that is either erroneous, misleading, or altogether missing. Instead of taking a hard look *at* environmental and economic impacts, the DEIS takes a hard look *away* from the profound and predictable impacts of the proposed project.

In doing so, the Army Corps turns a blind eye to the stark conclusions of a 2014 EPA ecological assessment analyzing potential impacts of large-scale mining in the Bristol Bay watersheds. On its own, the 2014 EPA assessment exposes the massive and numerous shortcomings in the DEIS, yet the Army Corps offers no explanation for how it can dismiss the EPA's assessment in favor of its own conclusion that this large-scale mining proposal essentially constitutes an environmental "free lunch" in terms of impact. The DEIS's disregard of the EPA's analysis renders it inadequate and unlawful.

The DEIS is legally flawed and will not withstand legal challenge for many additional reasons, including its oversight of ecological, biological, cultural, and economic impacts. To that end, BBRSDA adopts and incorporates by reference the following submissions and accompanying research: SalmonState, Pacific Seafood Processors Association, Bristol Bay Reserve, and Cameron Wobus (Lynker).

In addition to the issues raised in those submissions, BBRSDA adds the following comments and research focusing on the errors and omissions regarding potential impacts to the economics of the Bristol Bay commercial fishery. These errors and omissions make the lawful issuance of an FEIS or 404 Permit impossible. From an economics perspective, the DEIS is factually illiterate and legally insufficient for the following reasons:

- The DEIS whitewashes the serious immediate and long-term biological impacts of the project. These biological impacts would inflict substantial economic consequences on those who depend on the region's salmon resources.
- The DEIS fails to adequately evaluate the economic impacts of the proposed mine.
- The DEIS ignores the high likelihood of cumulative impacts to the fishery by failing to address the foreseeable expansion of the Pebble mine and the development of industrial access to the Bristol Bay region.
- The DEIS's assessment of alternatives and mitigation measures is legally flawed and insufficient.

Because of these defects, the Army Corps cannot lawfully issue a FEIS based on the current DEIS or any 404 permit for the Pebble project.

Legal Framework

NEPA requires federal agencies to prepare an EIS for all “major Federal actions significantly affecting the quality of the human environment.”¹ The EIS must be a “detailed statement” of: (i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resource which would be involved in the proposed action should it be implemented.² The EIS “shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made.”³ An EIS must foster both informed decision making and informed public participation.⁴ A draft EIS “must fulfill and satisfy to the fullest extent possible” the requirements established for a final EIS.⁵

NEPA and its implementing regulations require agencies to take a “hard look” at the environmental consequences of their actions.⁶ This “hard look” must be “timely, and it must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.”⁷ Pursuant to NEPA’s “hard look” requirement, the agency must ensure that “the adverse environmental effects of the proposed action are adequately identified and evaluated.”⁸

The agency must consider all foreseeable direct, indirect, and cumulative impacts⁹ of the proposed action.¹⁰ This requires a “reasonably thorough discussion of the significant aspects of the probable environmental consequences” of the proposed action and alternatives thereto.¹¹ When “economic or social and natural or physical environmental effects are interrelated,” the

¹ 42 U.S.C. § 4332(2)(C).

² *Id.*

³ 40 C.F.R. § § 1502.1, 1502.2.

⁴ *California v. Block*, 690 F.2d 753, 761 (9th Cir. 1982); *Trout Unlimited v. Morton*, 509 F.2d 1276, 1283 (9th Cir. 1974).

⁵ 40 C.F.R. 1502.9(a).

⁶ *See, e.g., Northern Plains Resources Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1076 (9th Cir. 2011); *Churchill Cnty. v. Norton*, 276 F.3d 1060, 1072 (9th Cir. 2001); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989); *Kleppe v. Sierra Club*, 427 U.S. 390, n.21 (1976).

⁷ *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000).

⁸ *Robertson*, 490 U.S. at 350.

⁹ “Effects” and “impacts” are synonymous as used in the context of NEPA and its implementing regulations. *See* 40 C.F.R. § 1508.8.

¹⁰ 40 C.F.R. § § 1502.16, 1507.7, 1508.8.

¹¹ 40 C.F.R. § 1502.1; *Block*, 690 F. 2d at 761; *Trout Unlimited*, 509 F.2d at 1283.

EIS “will discuss all of these effects on the human environment.”¹² Put succinctly, the socioeconomic effects that result from a project’s environmental impact must be considered.¹³

The Clean Water Act regulates and protects the waters of the United States by prohibiting the discharge of toxic pollutants in toxic amounts.¹⁴ The Act allows the Army Corps to issue a Section 404 dredge and fill permit for a proposed action that causes “only minimal adverse environmental effects” or “only minimal cumulative adverse effects on the environment.”¹⁵ The permitting guidelines specifically prohibit the issuance of a permit “unless it can be demonstrated that [the discharge of dredged or fill material into the aquatic ecosystem] 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.”¹⁶

A project shall not be permitted if it contributes to “significant degradation of the waters of the United States.”¹⁷ Effects contributing to significant degradation include: 1) significantly adverse effects of the discharge of pollutants on human welfare, including but not limited to effects fish, wildlife, and special aquatic sites; 2) significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems; 3) significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability; and 4) significantly adverse effects of the discharge of pollutants on recreational, aesthetic and economic values.¹⁸

Analysis

1) The DEIS whitewashes the serious biological impacts of the Pebble mine that will degrade the Bristol Bay fishery.

With minimal analysis, the DEIS disregards the mine’s biological impacts to the Bristol Bay fishery by repeatedly asserting that such impacts will be negligible, minimal, or not measurable.¹⁹ These assertions are conclusory, rely on inadequate science, and fail to consider critically important scientific evidence, rendering the DEIS legally deficient.²⁰

¹² 40 C.F.R. § 1508.14.

¹³ See *Hammond v. Norton*, 370 F. Supp. 2d 226, 242 (D.D.C. 2005).

¹⁴ 33 U.S.C. § 1251.

¹⁵ 33 U.S.C. § 1344(e)(1).

¹⁶ 40 C.F.R. § 230.1(c).

¹⁷ 40 C.F.R. § 230.10(c).

¹⁸ *Id.*

¹⁹ See DEIS § 4.6-5 – 4.6-18

²⁰ See *Cumington Preservation Committee v. Federal Aviation Administration*, 524 F.2d 241, 244 (1st Cir. 1975) (an EIS must not only point to potential environmental problems but must also evaluate them); *Miss. River Basin Alliance v. Westphal*, 230 F.3d 170, 174-75 (5th Cir. 2000) (an EIS must be sufficiently detailed).

Biological impacts from the Pebble mine can be sorted into two general categories. First, the mine is highly likely to cause a number of immediate biological impacts to salmon by degrading or destroying habitat, interfering with natural reproduction, and undermining the pristine conditions necessary for successful salmon spawning and rearing. Second, the mine introduces the risk of environmental catastrophe into the fishery by generating toxic mining waste that would indefinitely threaten the Bristol Bay watershed.

Both the high likelihood of immediate biological impacts and the long-term risks of calamity would irreversibly alter the Bristol Bay fishery that has until now remained untouched by large-scale development, pollution, or degradation of upriver habitat. The DEIS makes no serious attempt to quantify or otherwise evaluate the economic consequences of this dramatic alteration of the fishery. And it fails to acknowledge that the Pebble mine will change the fishery forever by introducing environmental and economic impacts that have never existed and cannot be eliminated.

a) The DEIS improperly dismisses or ignores destruction of spawning habitat and depletion of salmon likely to be caused by the mine.

The DEIS recognizes that the proposed Pebble mine will result in destruction and degradation of salmon habitat.²¹ The EPA had concluded that, even “the smallest” of the several proposed mine sizes “could result in significant and unacceptable adverse effects” on salmon and fishery areas they support.²² In fact, in 2014, EPA Region 10 Administrator Dennis McLerran stated in no uncertain terms:

The science is clear that mining the Pebble deposit would cause irreversible damage to one of the world’s last intact salmon ecosystems.²³

The EPA declared that the impacts to salmon habitat from even the smallest mine scenario would be “unprecedented for the Clean Water Act Section 404 regulatory program in the Bristol Bay region, as well as the rest of Alaska and perhaps the nation.”²⁴ These acknowledgements cannot be squared with the DEIS’s pronouncement that there will be no “long-term, measurable effects” on Bristol Bay salmon. This disconnect is caused by the DEIS’s failure to adequately and fairly account for impacts to salmon populations from the mine’s activities and changes to watershed.

²¹ DEIS § § ES, 4.24, 4.6, 4.27, App. I.

²² Proposed Determination of the US Environmental Protection Agency Region 10 Pursuant to Section 404(c) of the Clean Water Act, Pebble Deposit Area, Southwest Alaska (July 2014), ES-5, 2-17, 4-13 [hereinafter “2014 EPA Proposed Determination”]; *see generally* An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska, U.S. Environmental Protection Agency, EPA-910-R-14-0001A (Jan. 2014) [hereinafter “2014 EPA Assessment”].

²³ EPA News Release, “EPA releases proposal to protect Bristol Bay, Alaska fisheries from potential impacts posed by Pebble Mine,” dated July 18, 2014 [hereinafter “2014 EPA News Release”].

²⁴ *Id.*

First, in Sections 4.6, 4.24, 4.27, and Appendix I, the DEIS acknowledges that the mine will directly and permanently destroy salmon spawning habitat – at least 8.2 miles of the NFK and .75 miles of the SFK. The 2014 EPA Assessment concluded that streamflow reductions and habitat loss resulting from the mine would pose “substantial risks to spawning and rearing habitat” for salmon.²⁵ The DEIS’s contrary attempt to cast this lost habitat as inconsequential is erroneous for multiple reasons. The DEIS fails to translate lost habitat into population impacts, including the risk posed to spawning and rearing areas upstream and downstream from the areas of destroyed habitat. For example, the DEIS fails to account for the vital fact that water from the mining operations will drain into the Nushagak River, Lake Iliamna, and the Kvichak River. Streams and smaller lakes that feed into these larger waterbodies contain many miles of salmon habitat. Any potential polluting of these larger waterbodies could effectively foreclose access to a large percentage of the region’s productive salmon habitat even though the mine’s footprint does not directly destroy a large amount of salmon habitat. Tens of millions of salmon migrate through these waterbodies to reach spawning habitat both downstream and upstream from the proposed Pebble mine site. Given this simple fact, the study area considered by the DEIS is far too small and, therefore, fails to consider foreseeable impacts across a larger area.

The DEIS also misses the fundamental point that the location of the most productive spawning areas in the watershed changes from year to year, so lost habitat in one area can have a highly material impact to the fishery in any given year. And maintaining diverse habitat is critical to the health of the fishery:

Importantly, however, not all habitat supports substantial production in any given year. Rather, Nushagak River sockeye salmon are produced by a spatial mosaic of habitats whose profitability shifts from year to year.... These results emphasize the importance of habitat complexity for stabilizing production of sockeye salmon through time from this, and other, river ecosystems. Environmental impact assessments of potential development activities must take into account the fact that habitat conditions are continuously varying and that the important of any component of habitat can be disproportionately important for sustaining fisheries in some years, even if their average contribution are small over the long-term.²⁶

Rather than accounting for this science, the DEIS ignored it.

Second, with minimal scientific analysis, the DEIS largely dismisses or disregards impacts from degraded spawning habitat. Abundant scientific literature – and the history of salmon everywhere in the United States outside of Alaska – shows that changes to

²⁵ 2014 EPA Assessment at 7-57.

²⁶ Sean Brennan and Daniel Shindler, Using Strontium in Otoliths to Determine the Natal Origin and Habitat use of Sockeye Salmon in the Nushagak River, *prepared for* Bristol Bay Regional Seafood Development Assn., p. 2 (Oct. 1, 2017), https://static1.squarespace.com/static/56b0dfb660b5e98b87fc3d52/t/59de8b3a59cc6888e98697d6/1507756916739/BBRSDA_finalReport_Schindler+2017_compressed.pdf).

sedimentation, water temperature, and water levels cause major impacts to the spawning and reproduction of wild salmon.²⁷ The DEIS fails to quantify the impact to salmon populations likely to be caused by diminished spawning success that result from changes to the sedimentation, temperature, and water levels in the watershed.

Third, the DEIS fails to provide an adequate analysis of the impact of road construction and a transportation corridor in the midst of critical salmon spawning habitat. The DEIS largely dismisses potential impacts based on supposed mitigation measures, without noting that habitat preservation measures such as culverts require maintenance and repair – something that must occur in perpetuity and long after the mine operator has left the scene. Even with maintenance, culvert failure or blockage can eliminate streams as spawning grounds.²⁸ And development of a transportation corridor threatens the fishery with numerous impacts that the DEIS fails to study or quantify.

Fourth, the DEIS ignores impacts to salmon from copper dust. The DEIS fails to examine the serious risk that introduction of copper dust into the watershed will interfere with salmon runs, the volume of salmon returning to spawn, and the aquatic food sources salmon require.²⁹ The DEIS made no effort to examine or quantify these impacts.

Finally, the DEIS fails to account for releases of selenium into the watershed. The DEIS grossly understates releases of waste products from the mine through leaching, releases from ponds, and the imperfect water treatment.³⁰ Among other things, the DEIS's failure to account for the risk of selenium contamination stems from the agency's willingness to blindly accept the mine's assumptions rather than data from previous treatment systems. And the DEIS fails to quantify the extent of leakage.

Uncritically accepting a mine operator's assurance that nothing will go wrong does not substitute for sound analysis. The DEIS fails to provide examples of other mines that otherwise might buttress PLP's claims that its mining approach contains adequate environmental safeguards to avoid harming aquatic resources.

²⁷ See, e.g., Clifford Riebe, et al., Optimal Reproduction in Salmon Spawning Substrates Linked to Grain Size and Fish Length, 50 *Water Resources Research* 898 (2014), <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2013WR014231>; S.M. Greig, et al., The Impact of Fine Sediment Accumulation on the Survival of Incubating Salmon Progeny: Implication for Sediment Management, 344 *Science of The Total Environment* 241 (2005), <https://doi.org/10.1016/j.scitotenv.2005.02.010>.

²⁸ 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, *Environmental Management*, p. 11 (2019), <https://doi.org/10.1007/s00267-019-01171-w>.

²⁹ See Carol Ann Woody, Copper, Salmon and the Proposed Pebble Mine, Fisheries Research and Consulting, http://pebblescience.org/pdfs/Pebble_copper_salmon.pdf.

³⁰ See Kendra Zamzow, et al., Selenium Issues in the Pebble Project Draft EIS, *prepared for the U.S. Army Corps of Engineers* (Apr. 2019).

b) The DEIS fails to account for the catastrophic risks to the fishery posed by a spill or discharge event.

The DEIS chooses to disregard the risk of a tailings dam failure based on its claim that such a catastrophe is low probability during the life of the mine. This failure to sufficiently analyze the risk of a tailings dam failure is a direct violation of NEPA.³¹ Moreover, the DEIS's limited analysis of the impacts from a dam failure is fundamentally flawed for multiple reasons.

First, by limiting its risk assessment to the supposed 20-year period of active mine operations, the DEIS is misleading. Because, mine waste will remain toxic indefinitely, any honest analysis of the risk must extend the time horizon to the foreseeable future. Stating the obvious point that the DEIS refused to acknowledge, the risk of failure increases over time and even a small risk of failure in any given year makes an event more likely as the relevant time period expands. And even as the structural integrity of the dam may degrade over time, the risk of earthquakes or other natural disasters increases given a longer time horizon.³²

The DEIS's flawed analysis on this point highlights the agency's unlawful approach to environmental review. The mine's threat to the environment will not end with cessation of mining activities, and the Army Corps has a duty to assess the full scope and duration of potential impacts to the environment. Instead, by limiting its analysis to the mine's active operation, the DEIS exposes that its frame of reference for evaluating the project is the mine and its operators, not the environment and the permanent risks it will pose. This flawed approach is made even worse by the DEIS's willingness to accept that mining operations will cease after 20 years, notwithstanding the agency's recognition that expanded operations are foreseeable. In so doing, the agency abandoned objective assessment of risk by uncritically limiting its analysis to the most favorable time period and then pretending that no risk of spillage would occur after operation of the mine. This is agency malfeasance that violates the letter and spirit of NEPA.

Second, the DEIS underestimates risk by blindly adopting the mine's sanguine assumptions and failing to account for the geological and seismological features of the mine's

³¹ See *Gov't of the Province of Manitoba v. Salazar*, 691 F. Supp. 2d 37, 50 (D.D.C. 2010) ("It may be that the risk of a breach is low given the pipeline's construction, but that is not an excuse for Reclamation to refuse entirely to analyze the *consequences*. When the *degree* of potential harm could be great, i.e. catastrophic, the *degree* of analysis and mitigation should also be great.") (emphasis in original); *Sierra Club v. Watkins*, 808 F. Supp. 852, 868 (D.D.C. 1991) (holding that, given disputed evidence concerning the possibility of severe accidents, an agency may not simply "refus[e] to include certain low probability risks" — it must at least "admit that such accidents are possible," determine the probability of occurrence, and "discuss[] their potential effects.").

³² See, e.g., Lynker Technologies, LLC, A Model Analysis of Flow and Deposition from a Tailings Dam Failure at the Proposed Pebble Mine, prepared for the Nature Conservancy and Bristol Bay Regional Seafood Development Assn. (2019), https://static1.squarespace.com/static/56b0dfb660b5e98b87fc3d52/t/5c9a42bba4222fa3768a60ad/1553613518877/Lynker_TSF_Pebble_Model+-+Final+Report.pdf [hereinafter "2019 Lynker Report"], which is hereby incorporated by reference in its entirety.

location. Sound scientific analysis shows that, even during the short 20-year assumed operation of the mine, there is at least a 1% chance of a catastrophic spill.³³ Due to the large scale of the mine, extent of precipitation, and the area's geology, that risk is likely conservative.³⁴ The DEIS ignores the consequence of this risk: a death sentence for the fishery.

Third, it is improper for the agency to use the relatively low probability of a catastrophe as an excuse to avoid assessing the environmental consequences should it occur. Due to the extreme consequences of a tailings dam failure, even a low-probability event introduces a material risk of environmental disaster that the agency is obligated to understand and assess. Even accepting as factual the fiction that the mine's footprint will be limited to the version assessed in the DEIS, the scale of the project and the amount of mining waste it will generate create the risk of an environmental disaster on par with the mining industry's worst catastrophes.

The spill and tailings storage facility (TSF) failure scenarios contained in the DEIS are superficial and lack the rigorous, objective analysis required by NEPA. The DEIS performed no modeling, failed to look at actual TSF failures, discussed a few arbitrary scenarios, and cited no supporting evidence for its ultimate conclusion that no adverse impacts are likely to occur. In contrast, the BBRSDA commissioned an expert who rigorously and objectively evaluated a potential TSF failure by conducting key modeling and thorough analysis, and who also made his findings public.³⁵ The results were staggering. Utilizing information about the size of actual TSFs, the amount of tailings material disbursed from actual failures, and the topographic profile of Pebble mine's downstream environment, the Lynker Report concluded that based on the size of the proposed "small" Pebble mine plan, a TSF failure would be roughly 10 times larger than the Mount Polley TSF failure or the failures in Brazil at the Brumadinho and Samarco mines.³⁶ The Lynker Report proves that a tailings dam failure could destroy hundreds of miles of pristine salmon habitat in the country's largest remaining wild salmon fishery.³⁷

One possible, yet ultimately invalid, explanation for the Army Corps' oversight in performing a more rigorous analysis of potential TSF failures (such as performed in the Lynker Report) is the possibility that the Army Corps believes that the bulk TSF will be a "dry" TSF and that material from the PAG TSF will be returned to the mine pit after closure, potentially reducing the risk of a failure. But it is not clear if or how PLP would carry this out. The DEIS states that the mine will use a Thickened Tailings Storage method during the operational period.³⁸ So, the tailings will not really be dry, but rather a slurry with a target of 55% solids

³³ *Id.*, p. 1.

³⁴ See Stuart Levit & David Chambers, Comparison of the Pebble Mine with Other Alaska Hard Rock Mines, Center for Science in Public Participation (2012), https://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=513582.

³⁵ See 2019 Lynker Report.

³⁶ *Id.*, p. 6.

³⁷ 2019 Lynker Report, p. 46.

³⁸ DEIS § App. B-62.

having a “molasses” consistency at best. The DEIS does not contain information about how the region’s relatively wet environment will not make the tailings material even more fluid. Also, a technical memorandum from AECOM (which was submitted to the Army Corps) shows there is no precedent for large thickened tailings storage facilities in environments like the proposed Pebble site:

In response to RFI-010 Item 6 regarding examples of successful thickened TSFs in cold regions, PLP provided case history summaries and references on five mines (see Attachment A: RFI-010, Part 2, response). AECOM conducted an independent review of these mine sites, and found that they cannot readily be compared to Pebble, both individually and collectively.

Based on AECOM’s review, it is concluded that there is a limited history of successful thickened tailings operations at large mines in cold regions, coupled with many site and operation differences between the Pebble plan and the other project operations.

Historically, this is the least common facility type in Canada. Based on our research, consistency of tailings product over time and lack of ability to achieve steep tailings slopes are a main concern with high density thickened / paste tailings.³⁹

The DEIS provides scant evidence about how the mine operator would keep the bulk TSF “dry” in perpetuity and fails to provide real-life examples demonstrating that it can even be done in a place like the proposed mine site with such unique weather patterns and hydrological conditions. Nor does the DEIS contain requirements or consequences for the mine operator in the event that water levels in either TSF rise to unacceptable levels. At a minimum, the DEIS should have extensively investigated the precedent for such a scenario and should have created a set of stringent project requirements to ensure that such critical elements of the mine plan are preserved and prioritized in perpetuity. Bristol Bay is not the place to experiment with untested mining activities. Even if the DEIS addresses this in the FEIS, it would be too late. The public has not been given all the information on this point and would be stripped of its right to review and comment on this critical feature of the mine plan.

Fourth, the DEIS fails to include any serious analysis of the long-term risk to the watershed posed by toxic mine tailings even in the absence of a dam failure. The DEIS uncritically accepts the proposition that the mine’s toxic sludge can be stored indefinitely without any serious environmental impact from leaching in a geologically porous area.

³⁹ Technical Memorandum to Bill Craig, AECOM (Re: Review of Tailings Thickening Experience in Cold Regions) (June 28, 2018), <https://pebbleprojecteis.com/files/5c5dc4fe-317d-4f6c-b3ea-1c7d3138aec3>.

Finally, the DEIS's decision to ignore the long-term risks posed by mine waste allows the agency to also ignore the full extent and duration of mitigation measures, funding, and disaster response necessary to redress a spill. Nor does the agency provide any assessment of the difficulty in stopping or remediating a spill in a remote area like Bristol Bay. It would constitute a fundamental abdication of the agency's mission and duties to expose the Bristol Bay fishery to an indefinite risk of environmental calamity without conducting a serious assessment of whether and how such a disaster could be contained and remediated.

c) The DEIS fails to assess the economic consequences of these biological impacts.

While the DEIS fails to adequately assess impacts of the proposed mine on Bristol Bay's biological resources, its failures are even worse when evaluating the commercial and economic consequences of those biological impacts. The DEIS makes no attempt to assess the impact of the mine on commercial fishing jobs, margins of the various participants in the fishery, level of participation in the fishery, or risks to the viability of commercial fishing operations.

The DEIS fails to acknowledge that Bristol Bay salmon produce significant economic benefits at a regional, statewide, and national level. The commercial salmon fishery in Bristol Bay is the most valuable wild salmon fishery in the world and is the economic foundation of the region.⁴⁰ Each year, the Bristol Bay commercial sockeye fishery generates revenue of \$1.2 billion and supports over 15,000 jobs.⁴¹ Fishermen and processors own \$1.2 billion of regional assets that are dependent on the fishery.⁴² In 2018, Bristol Bay salmon accounted for 47 percent of the preliminary ex-vessel value of all salmon caught in Alaska.⁴³ Once post-season price adjustments are factored in, Bristol Bay will likely account for more than 50 percent of the entire Alaskan salmon fishery value in 2018.⁴⁴ Additionally, Bristol Bay commercial salmon fisheries produce large quantities for export markets, resulting in a large impact on the national economy. From 2013 to 2017, the commercial Bristol Bay salmon fishery yielded an average of \$235 million worth of exports, which help offset the U.S. trade deficit and brought new money into the U.S. economy.⁴⁵ Bristol Bay is a key player in the Alaskan seafood industry, which is the State's

⁴⁰ Wink Research & Consulting, *Economic Benefits of the Bristol Bay Salmon Industry*, prepared for the Bristol Bay Regional Seafood Development Assn., p. 1 (July 2018), <https://static1.squarespace.com/static/56b0dfb660b5e98b87fc3d52/t/5b7b38e6aa4a99fdf3b45215/1534802160748/Economic+Benefits+of+Bristol+Bay+Salmon+Full+Report+-+July+2018+-+updated+082018.pdf> [hereinafter "2018 Wink Research & Consulting Report"].

⁴¹ *Id.*

⁴² *Id.*, p. 2.

⁴³ See Pebble Mine DEIS Comment filed by Andy Wink (June 2019) [hereinafter "2019 A. Wink Comment"]; see also 2018 Alaska Commercial Salmon Harvest – Ex-Vessel Values, Alaska Dept. of Fish & Game, https://www.adfg.alaska.gov/static/fishing/pdfs/commercial/2018_preliminary_salmon_summary_table.pdf.

⁴⁴ 2019 A. Wink Comment.

⁴⁵ 2018 Wink Research & Consulting Report, p. 38.

largest private-sector employer.⁴⁶ Nowhere does the DEIS address the very real, large, adverse economic consequences that the proposed action would have on the regional economy that depends on Bristol Bay and the national economy that greatly benefits from Bristol Bay.

The DEIS should have accounted for the economic reality of commercial fishing operations in Bristol Bay. Had it done so, it could not have dismissed the large economic impact caused by even marginal declines in the quantity or price of sockeye salmon. Given the economics of participating in the fishery, even small changes in revenue can alter the viability of fishing operations.

As fisheries accountant and Bristol Bay commercial fisherman Jerry Liboff details in his comment on the DEIS, participation in the Bristol Bay salmon fishery requires significant investments. A Bristol Bay fisherman typically makes initial investments anywhere from \$500,000 to \$700,000 in vessel, permits, and gear to enter the industry.⁴⁷ Additional expenses are required each season to remain viable. And it is not uncommon for fishermen to have invested over \$1 million in their venture, as detailed by multiple comments on the DEIS.⁴⁸ In addition to these investments, approximately 50% of the fleet is financed with high-interest loans.⁴⁹ Because many Bristol Bay fishermen are paying down their capital investments, even years after entering the industry, much of the fishery is subject to high fixed costs and thin margins. And virtually all costs are essentially fixed if fishermen commit to participate in the fishery, since fishermen have a very limited ability to scale investments in nets, gear, and crew based on harvest.

In addition to high fixed costs, fishermen face natural variability in harvest. Even under normal, natural conditions, fishermen may break even or lose money in any given year. It is therefore critical for fishermen to capitalize on good years and avoid any reductions in revenue from external or artificial sources. As Mr. Liboff explains, given the high fixed costs associated with the Bristol Bay fishing industry, something as small as a 10-20% decline in revenue – whether from fewer fish or lower prices – can eliminate a profitable year.⁵⁰ And just one or two depressed seasons can be enough to put Bristol Bay fishermen out of business, induce default on loans, or force sale of their fishing assets. Numerous comments on the record by commercial fishermen support this conclusion.⁵¹

⁴⁶ *Id.*, p. 39.

⁴⁷ Pebble Mine DEIS Comment filed by Jerry Liboff (June 2019) [hereinafter “2019 J. Liboff Comment”].

⁴⁸ *See, e.g.*, Pebble Mine DEIS Comment filed by Nick Lee of Alaska Select Seafood (June 2019) [hereinafter “2019 N. Lee Comment”]; Pebble Mine DEIS Comment filed by Fran Kaul of Misty Fjord Seafood Producers (June 2019) [hereinafter “2019 F. Kaul Comment”]; Pebble Mine DEIS Comment filed by the Niver Family of Surrender Salmon (June 2019) [hereinafter “2019 Niver Family Comment”]; Pebble Mine DEIS Comment filed by Steve and Jenn Kurian of Bride of Bristol Bay and Wild for Salmon (June 2019) [hereinafter “2019 S&J Kurian Comment”].

⁴⁹ 2019 J. Liboff Comment.

⁵⁰ *Id.*

⁵¹ *See, e.g.*, 2019 J. Liboff Comment; 2019 N. Lee Comment; 2019 F. Kaul Comment; 2019 Niver Family Comment; 2019 S&J Kurian Comment.

Moreover, Bristol Bay fishermen have never before had to contend with the significant added risks that would accompany the Pebble mine and manmade development in Bristol Bay's headwaters. The DEIS is silent on the economic impacts of accounting for the changed risk profile caused by the mine. While the immediate, short-term biological risks may not eliminate salmon, reduced salmon runs in any given year can materially change the economic dynamics of the fishery, the value of permits, the calculus of fishermen, and the level of participation in the fishery. Yet the DEIS does nothing to address these issues that are central to evaluating the real economic impacts of the proposed mine.

The threat from the Pebble mine lasts as long as its mining waste – essentially in perpetuity.⁵² The DEIS does not account for the permanent change to the risk profile of the fishery facing not only current fishermen but also their children and future fishing generations. All Bristol Bay commercial fishermen have to decide whether to enter the fishery and stay in it. As several comments on the record explain, mere consideration of the proposed action discourages the younger generation from entering.⁵³

Simply put, the DEIS offers no serious analysis of the impact that the mine would have on the Bristol Bay fishing industry.

2) The DEIS includes factual errors and fails to adequately address the economic impacts from the Pebble mine on the brand and price of Bristol Bay salmon.

The DEIS's assessment of the potential impacts of the Pebble mine on the brand and price of Bristol Bay salmon is a factual and legal disaster. On this subject, the DEIS is so riddled with fundamental factual errors, so divorced from the real-world marketplace, and so devoid of adequate analysis that it sacrifices the agency's credibility and calls into question whether the agency possesses the basic competencies needed to evaluate this project. Absent a complete do-over of the DEIS's assessment of economic impacts, the environmental review of the Pebble mine cannot survive legal scrutiny.

The DEIS acknowledges that a "potential impact" of the proposed project on commercial fishing includes the "reduction in consumer willingness to buy Bristol Bay salmon due to a perceived loss of quality, resulting in lower prices to be paid to commercial harvesters."⁵⁴ The DEIS even points out that scoping comments specifically addressed concerns that the Bristol Bay commercial fishery would be impacted and that the Bristol Bay wild salmon brand would be damaged by the presence of an open-pit copper mine in the heretofore pristine watershed.⁵⁵ After acknowledging this serious issue, the DEIS failed to undertake any economic analysis regarding

⁵² 2019 A. Wink Comment.

⁵³ See, e.g., 2019 F. Kaul Comment; Pebble Mine DEIS Comment filed by Nels Ure (June 2019) [hereinafter "2019 N. Ure Comment"].

⁵⁴ DEIS § 4.6-1.

⁵⁵ *Id.*

the foreseeable impacts that the mine would have on consumer willingness to buy Bristol Bay salmon. Instead, the DEIS simply asserts, without analysis, that a decline in market perception is “not expected.”⁵⁶

Potential impacts of the mine on the commercial standing of the Bristol Bay fishery is of extreme importance. Any reasonable assessment of the mine and its impacts must start with a clear-eyed, fact-driven, detailed, and reasoned examination of the market position of Bristol Bay salmon, the relationship between public perception and price, the branding and marketing of the fishery, and the economic drivers of the fishery’s success. This should require an exercise in economic analysis. Instead, the DEIS attempts to justify its assertions with this short paragraph containing no analysis of economic substance:

As noted in Section 3.6 [a reference to two paragraphs containing price data from 1997-2017], Bristol Bay salmon is a “price-taker,” it does not have a cohesive brand identification as the Copper River fishery does to help drive prices higher. Therefore, Bristol Bay prices reflect both the market for wild Alaskan salmon products and the broader market for all salmon products. In addition, prices paid in Bristol Bay are nearly always lower than those paid in other Alaska salmon fisheries producing similar products, which reflects the higher transportation expense associated with Bristol Bay’s geographic location.⁵⁷

The DEIS makes no attempt to substantiate any of this. It cites virtually no facts, relies on no economic expertise, and makes no attempt to measure impacts of branding. The DEIS’s lack of any reasonable discussion and detailed analysis on this topic renders its conclusion legally deficient.⁵⁸

The DEIS’s failures on these points is made all the worse by the fact that an economic framework and abundant economic literature exist to provide a basis for the agency to conduct a competent analysis.⁵⁹ In particular, abundant scholarship exists around preferences for wild salmon, the value of seafood branding, and threats to the marketability of seafood posed by both

⁵⁶ *Id.* § 4.6-2.

⁵⁷ *Id.*

⁵⁸ *See* 40 C.F.R. § § 1502.16, 1507.7 (the agency must consider all foreseeable direct and indirect impacts of the proposed action); *Block*, 690 F. 2d at 761; *Trout Unlimited*, 509 F.2d at 1283 (the NEPA process requires a “reasonably thorough discussion of the significant aspects of the probable environmental consequences” of the proposed action and alternatives thereto); *Westphal*, 230 F.3d at 174-75; *Cumington Preservation Committee*, 524 F.2d at 244 (an EIS must not only point to potential environmental problems, but it must also evaluate them in a sufficiently detailed manner).

⁵⁹ Sunny Jardine, Comments on the Economic Analysis in the Pebble Project Draft Environmental Impact Statement, *prepared for* Bristol Bay Regional Seafood Development Assn. (June 2019), § § 1-2, [hereinafter “2019 S. Jardine Comment & Economic Analysis”], which is hereby incorporated by reference in its entirety.

actual or perceived contamination. Yet the agency turned a blind eye to the rudiments of assessing brand, threats to brand damage, and marketplace impacts.

Moreover, the Pebble mine poses threats to the vibrant recreational fishery in Bristol Bay that are at least as dire as threats to the market standing of the Bristol Bay fishery.⁶⁰ The recreational fishery depends not only on abundant salmon runs, but also the wild, pristine habitat that supports them. Just like the commercial fishery, the success of the recreational fishery is linked to the public's perception of Bristol Bay as a wild, untainted environment. Yet the DEIS offers no analysis of any substance regarding impacts to recreational fishing interests.

Had Army Corps fulfilled its legal duties to analyze the foreseeable environmental and socioeconomic consequences of the proposed action, it would have come to the same conclusion the EPA reached in 2014: that the proposed action poses unacceptable adverse impacts to the Bristol Bay commercial fishery, including negative direct and indirect impacts on the market perception of Bristol Bay salmon.

a) Without evidence or factual support, the DEIS falsely denies the unique economic value and market position of the Bristol Bay fishery.

Without analysis, the DEIS asserts that the Bristol Bay fishery is a “price taker” such that participants in the fishery cannot influence the price of Bristol Bay salmon. According to the superficial analysis in the DEIS, Bristol Bay salmon is essentially indistinguishable in the marketplace from farmed salmon and receives no price premium. These assertions are just plain wrong, and these factual errors render the DEIS's assessment of commercial fishing impacts deeply flawed.

The DEIS acknowledges in a fleeting statement that “individual and collective efforts around marketing, improved quality product, and developing new markets and products can also have long-term effects on the value of salmon at the harvester level.”⁶¹ But the DEIS failed to analyze any of these important factors in the context of the market for Bristol Bay salmon. As a result, the DEIS incorrectly determined that Bristol Bay is a “price taker” and has “no cohesive brand,” yielding an unsubstantiated assessment that adverse impacts to the Bristol Bay brand are “not expected.”⁶² The DEIS made no effort to quantify the impact of branding and sourcing on the price of Bristol Bay salmon. Without actual economic analysis, the DEIS has no basis for these assertions.

Had the DEIS analyzed these critical factors, it would have reached a drastically different conclusion. A basic analysis of these factors reveals: 1) Bristol Bay is known for being the most abundant sockeye salmon source in the world due to proper management of the fishery, including protection of its pristine headwaters; 2) the Bristol Bay fleet has instituted key quality-

⁶⁰ *Id.*, § 3.

⁶¹ DEIS § 3.6-5.

⁶² *Id.* § 4.6-2.

control mechanisms to improve the quality of their catch, which has made Bristol Bay sockeye one of the highest-quality products available on today's market; and 3) the Bristol Bay fishing community has undertaken significant efforts to develop a robust branding and marketing campaign, which has helped boost Bristol Bay sockeye salmon to the top of consumer desirability. As such, Bristol Bay is a leader in today's market for wild, sustainable, pure sockeye salmon. The DEIS did not undertake any analysis providing a basis to deny these facts.

Numerous comments submitted on the record elaborate on these three factors, providing overwhelming evidence that Bristol Bay has a strong brand, that Bristol Bay is not a price-taker, and that the proposed action poses unacceptable, foreseeable adverse impacts to the brand and marketability of Bristol Bay sockeye salmon.⁶³ Because the comments speak for themselves in addressing these issues, we refer the Army Corps to those comments, incorporate them by reference, and highlight only some of the main points here.

First, proper management of the fishery, including not allowing any development in the headwaters, is critical to the brand of Bristol Bay sockeye and the sustainability of the most abundant wild sockeye resource in the world. The Bristol Bay watershed has been regulated and managed for over a hundred years, securing the viability of the headwaters and streams, resulting in a sustainable, renewable resource. The fact that Bristol Bay sockeye has no contamination, and no possibility of contamination, is critical to the Bristol Bay brand, which is premised on coming from an abundant, pristine environment.

Second, starting in the early 2000s, the Bristol Bay fleet began investing in and prioritizing quality-control mechanisms, moving away from producing canned salmon to premium fillets. This revolutionized the industry. Bristol Bay fishermen have made substantial investments in hydraulically driven chilling units to immediately chill and preserve the fish on board the vessel. In 2008, only 16 percent of salmon caught in Bristol Bay were chilled, but by 2018 this figure increased to 86 percent.⁶⁴ Fishermen have begun using mats and salmon slides to ensure the fish are not bruised, they hand-bleed the fish immediately after being caught, and they tender their catch to a processor for immediate gutting, filleting, flash-freezing, and vacuum-packing to preserve the quality. These are known practices of Bristol Bay, which produce premium-quality sockeye fillets at the top of the market. These practices distinguish Bristol Bay's product from other salmon products such as farmed salmon, which contain

⁶³ 2019 N. Lee Comment; 2019 F. Kaul Comment; 2019 Niver Family Comment; 2019 S&J Kurian Comment; 2019 N. Ure Comment; 2019 A. Wink Comment; Pebble Mine DEIS Comment filed by Michael Jackson of BBRSDA (June 2019) [hereinafter "2019 M. Jackson Comment"]; Pebble Mine DEIS Comment filed by Fritz Johnson of BBRSDA (June 2019) [hereinafter "2019 F. Johnson Comment"]; Pebble Mine DEIS Comment filed by Elizabeth Herendeen (June 2019) [hereinafter "2019 E. Herendeen Comment"]; comments submitted by over 30 professional chefs; comments submitted by over 100 commercial fishermen; and comments submitted by retailers who purchase Bristol Bay sockeye.

⁶⁴ Northern Economics, 2018 BBRSDA Processor Survey, *prepared for* Bristol Bay Regional Seafood Development Assn., p. 1 (May 2019), <https://static1.squarespace.com/static/56b0dfb660b5e98b87fc3d52/t/5cd5e3c6eb39313ec9967cb1/1557521372047/2018+BBRSDA+Processor+Survey+Report+Final.pdf>.

antibiotics, growth hormones, and dyes; from other wild salmon not preserved at the point of harvest; and from and foreign imports of salmon, which are often twice-frozen and contain unhealthy preservatives.⁶⁵

Third, approximately 15 years ago, Bristol Bay initiated efforts to develop the Bristol Bay brand and instituted a concerted marketing campaign to promote its wild salmon. Through the WhyWildProgram and the Savor Bristol Bay Campaign, efforts were dedicated to cultivating public awareness of the ecological and health benefits of consuming wild salmon over farmed salmon and to increase awareness of Bristol Bay's valuable, sustainable resources, building market appreciation for Bristol Bay sockeye.⁶⁶ The marketing campaign focused on the strengths of Bristol Bay sockeye: a high-quality, abundant product that is sustainably sourced from a pristine environment.⁶⁷ BBRSDA developed logos, targeted branding initiatives, and point-of-sale promotions, launching a concerted effort similar to other regions, such as Copper River.⁶⁸ BBRSDA even flew chefs to Bristol Bay to familiarize them with the region's ecological purity, its commitment to sustainability and preservation, and the many hardworking fishermen who dedicate their lives to the fishery.⁶⁹ As a result, many chefs, such as world-renown chefs Tom Douglas, Rick Moonen, Nora Pouillon, and Tom Colicchio, have developed a strong connection to Bristol Bay and feature Bristol Bay sockeye on their menus.⁷⁰ In 2016, BBRSDA ramped up marketing efforts even further, investing more than \$2 million in promoting the branding of Bristol Bay Sockeye Salmon to ensure that each salmon's source is known and easily verified at the time of purchase.⁷¹

Fourth, over the past decade, a number of Bristol Bay commercial fishermen have launched direct-marketing and distribution businesses, successfully selling Bristol Bay sockeye to consumers all across the United States. These businesses are flourishing at exceptional rates, selling directly to grocery stores, health food cooperatives, restaurants, local farmers markets, and individual consumers. Their marketing efforts promote the pure, wild, traceable, and sustainable nature of their catch. These are critical selling points to their customers who prioritize knowing that their food lacks any risk of potential contamination. Their businesses and livelihoods are rooted in exactly what the proposed action threatens: the purest, most abundant source of sockeye in the world.⁷²

Finally, Bristol Bay sockeye is posed to gain additional market power so long as it does not have to contend with the adverse risks that accompany the proposed action. The payoffs from

⁶⁵ See, e.g., 2019 N. Lee Comment; 2019 F. Kaul Comment; 2019 S&J Kurian Comment.

⁶⁶ 2019 E. Herendeen Comment.

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ 2019 A. Wink Comment.

⁷² See, e.g., 2019 N. Lee Comment; 2019 F. Kaul Comment; 2019 Niver Family Comment; 2019 S&J Kurian Comment.

the community's organized branding efforts and marketing campaigns are just starting to accrue.⁷³ For example, just last year, there were over 1,000 promotions for "Bristol Bay Sockeye Salmon" in grocery stores nationwide.⁷⁴ Moreover, recent years have seen an increase in supply of Bristol Bay sockeye, which has been met with price increases.⁷⁵ The 2018 season was the largest Bristol Bay sockeye return on record and received one of the highest prices of all time.⁷⁶ This defies normal supply-demand economics, evidencing that Bristol Bay sockeye continues to rise to the forefront of consumer awareness and desirability.⁷⁷ Bristol Bay stands to gain even greater market power as other Alaskan waters, such as Copper River, have seen a decline in run size over the last several years.⁷⁸ Given the recency of these efforts, the traction that BBRSDA and the fishery have gained has been impressive and will only grow in the future.

Moreover, the DEIS errs by not accounting for ongoing branding efforts and the future value of a wild, untainted salmon fishery. The potential impacts of the mine determine the proper timeframe for analyzing its economic impacts – many decades. The DEIS should account for the future brand value, rather than limiting analysis to a fixed point in time.

This point is underscored by the DEIS's failure to account for non-use values of the Bristol Bay fishery.⁷⁹ The DEIS makes no attempt to acknowledge the possibility of public's interest in maintaining one of the last remaining wild salmon fisheries in the country, much less to quantify the value that the public accords this resource. Understanding that non-use value would provide context for consumers' willingness to pay a premium for wild salmon from untainted sources. Yet the Army Corps entirely ignored the analysis in reducing Bristol Bay salmon to a commodity with no value beyond farmed salmon.

Because the DEIS fails to consider any of these factors, it wrongly concludes that impacts to the marketability of Bristol Bay sockeye salmon are "not expected." To the contrary, the mine threatens to destroy a central market advantage of the fishery – the wild, pristine, untainted source of Bristol Bay salmon. The DEIS omits any analysis denying that the project poses unacceptable direct and indirect impacts to the brand of Bristol Bay sockeye salmon, which is predicated on being high-quality from a pristine source. As discussed in detail in Section 1, the proposed action poses real risks of contamination in its day-to-day operations, or even worse, in the event of a catastrophic tailings storage facility. If contamination occurs, the entire Bristol Bay brand will be destroyed.

⁷³ 2019 E. Herendeen Comment.

⁷⁴ *Id.*; see also Bristol Bay Regional Seafood Development Assn., Bristol Bay Sockeye Market Report, p. 19 (Fall 2018), <https://static1.squarespace.com/static/56b0dfb660b5e98b87fc3d52/t/5bec7cbc758d46d1ac7450ec/1542225095765/BBRSDA+Sockeye+Market+Report+-+Fall+2018+-+Full+Color.pdf> [hereinafter "2018 Bristol Bay Sockeye Market Report"].

⁷⁵ 2018 Bristol Bay Sockeye Market Report, pp. 6-7.

⁷⁶ *Id.*, pp. 1, 6-7.

⁷⁷ *Id.*

⁷⁸ 2019 A. Wink Comment; 2019 E. Herendeen Comment.

⁷⁹ 2019 S. Jardine Comment & Economic Analysis, § 4.

Even if relatively little contamination occurs, the impact to the market will be exponential. Market perception will be heavily tainted as consumers will not risk eating potentially contaminated food. The market would not only shift to other sources of salmon, including farmed salmon and other sources of protein, resulting in severe price declines and diminished demand for Bristol Bay salmon.

The annual value of the price premium that Bristol Bay salmon enjoy over farmed salmon is at least \$201 million in ex-vessel landings.⁸⁰ A contamination event – or even a market scare based on negative publicity around water quality – could eliminate the marketability of Bristol Bay salmon altogether. But even if Bristol Bay lost only its price premium vis-à-vis farmed salmon, that loss of \$201 million amounts to a loss of billions of dollars over the supposed 20-year operational life of the mine.⁸¹ Even in conservative terms, the Pebble mine puts at risk at least two-thirds of the commercial value of the fishery.⁸²

Even the mere presence of the mine in the otherwise untouched headwaters will be enough to pose serious damage to the Bristol Bay brand, leading to severe economic consequences to the Bristol Bay fishing industry and the communities it supports.

b) The DEIS fails to assess the market impact of placing a copper mine in the fishery.

The DEIS's analysis of price data is deeply flawed, rooted in the fact that it accepts pricing as a given without evaluating the levers that impact price.⁸³ Price data alone does not adequately capture the value of the Bristol Bay fishery or the magnitude of the potential adverse impacts that the proposed action poses to the Bristol Bay brand.

Even a cursory analysis of pricing data reveals that market forces other than commodity pricing impact Bristol Bay salmon. For example, harvests of Bristol Bay salmon have been abundant the last two years, and prices have risen even as harvests have increased and in some cases more than increases in the prices of farm-raised salmon.⁸⁴ This suggests that Bristol Bay salmon is not simply a price taker and has been highly successful in promoting its brand.⁸⁵ Nor can this be understood based on overall salmon prices. The Army Corps did none of the pricing analysis of salmon markets necessary to justify its assertion that Bristol Bay is a mere price taker.

⁸⁰ 2019 A. Wink Comment.

⁸¹ *Id.*

⁸² *Id.*

⁸³ DEIS §§ 3.6-4, 4.6-2 (“The total value of the fishery in economic terms starts with volume (i.e., productivity) and price (i.e., what the market will pay for the fish.)”).

⁸⁴ 2018 Bristol Bay Sockeye Market Report, pp. 6-7.

⁸⁵ 2019 A. Wink Comment.

The DEIS's narrow focus on price data fails to capture the value of the Bristol Bay fishery, resulting in the false conclusion that Bristol Bay sockeye are not as valuable as other wild salmon at market, such as sockeye from Copper River. While Bristol Bay sockeye salmon might currently fetch lower prices than sockeye fisheries in Prince William Sound, Cook Inlet, and Kodiak, this simplistic comparison ignores the obvious difference in harvest volume.⁸⁶ Bristol Bay produced nearly 10 times as many sockeye as all the aforementioned areas combined in 2018.⁸⁷ This means that Bristol Bay fishermen can often accept a lower price because they can earn a healthy financial return because they catch more fish than sockeye fishermen in other areas.⁸⁸ It does not mean that Bristol Bay sockeye salmon is worth less than wild sockeye salmon from other areas or that Bristol Bay sockeye has less market power. Had the DEIS performed a serious economic analysis, it would have found that Bristol Bay actually sets the market price for frozen wild salmon from Alaska because Bristol Bay provides the largest supply of premium wild salmon in the world.⁸⁹

Instead of conducting a serious economic analysis of the Bristol Bay fishery, the DEIS makes another astonishing claim: that environmental disasters like the *Exxon Valdez* oil spill and the Fukushima disaster have not caused pricing impacts to affected fisheries.⁹⁰ The DEIS premises its economic analysis on the purported facts that “no effect on salmon prices” occurred in the wake of the *Exxon Valdez* oil spill of March 1989 and that there were “very small or undetectable” “seafood price effects” in the wake of the Fukushima nuclear disaster in March 2011.⁹¹ It is shocking that an agency's environmental review could get basic facts so wrong. Environmental disasters like these have devastating market impacts on affected fisheries, including terrible consequences for fishing communities, serious declines in consumer confidence, long-term dislocation, and extreme marketplace disruption.

Contrary to the DEIS's conclusion, salmon prices *did* decline after the *Exxon Valdez* oil spill, and the spill caused rippling economic effects throughout markets for Alaskan seafood. A study comparing ex-vessel fish prices expected for the years 1989 and 1990 without the occurrence of the oil spill to actual ex-vessel fish prices in wake of the oil spill demonstrates that the spill resulted in a dramatic decline in prices for all south-central Alaskan fishery products.⁹² The study contains an enormous amount of pricing data showing that the oil spill lead to drastic price reductions for salmon, shellfish, herring, and sablefish in 1989 and 1990. Table 1 presents the specific price declines for salmon and herring.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ DEIS § 4.27-91.

⁹¹ *Id.*

⁹² Maurie J. Cohen, *Economic Impacts of the Exxon Valdez Oil Spill*, in *The Exxon Valdez Disaster: Readings on a Modern Social Problem* (J. Steven Picou et al., 2d Ed. 2008), pp. 149, 151-52 [hereinafter “Cohen, Economic Impacts of the *Exxon Valdez* Oil Spill”].

Table 1 Forecasted vs. Actual Prices, Southcentral Alaska (all figures in nominal dollars per pound)

| Fish | 1989 | | 1990 | |
|-----------------|--------------------------------|-------------------------|--------------------------------|-------------------------|
| | Without-Impact (Forecasted) | With-Impact (Actual) | Without-Impact (Forecasted) | With-Impact (Actual) |
| Chinook Salmon | \$2.41 | \$1.51 | \$2.55 | \$1.83 |
| Sockeye Salmon | \$1.79 | \$1.23 | \$1.70 | \$1.19 |
| Coho Salmon | \$1.56 | \$0.67 | \$1.71 | \$0.98 |
| Pink Salmon | \$0.50 | \$0.36 | \$0.42 | \$0.31 |
| Chum Salmon | \$0.77 | \$0.38 | \$0.82 | \$0.40 |
| Pacific Herring | \$0.48 | \$0.20 | \$0.46 | \$0.29 |

Source: Cohen, Economic Impacts of the *Exxon Valdez* Oil Spill, p. 151.

Of the salmon populations, pink salmon and sockeye salmon were hit the hardest, having lost \$65.4 million in commercial fishing revenue and \$22 million in commercial fishing revenue respectively, in 1989 alone.⁹³ All fisheries combined lost an estimated \$108.1 billion in ex-vessel revenue in 1989 and an estimated \$47 million in ex-vessel revenue in 1990.⁹⁴ Courts even awarded fishermen \$507.5 million in compensatory damages for fishing losses, a basic fact that the DEIS fails to acknowledge or explain.⁹⁵

The *Exxon Valdez* oil spill’s impact on prices, while devastating, is not the only measure of the adverse effects it had on the local fisheries and fishing industries. The long-term effects of the spill have been crippling. The spill resulted in long-term damage to the salmon and herring fisheries and to the commercial fishing industries that relied on those fisheries. Even after years of dedicated restoration efforts, the pink and sockeye salmon fisheries were not deemed to have “recovered” until 2002 – 13 years after the spill – and even still, they are nowhere close to their productive state prior to the spill.⁹⁶ Even 30 years later, the herring fishery has still not recovered.⁹⁷ Moreover, chronic stress and negative psychological impacts have been documented in communities affected by the spill, with particularly high levels of stress and negative mental health effects in the commercial fishing community due to resource depletion and continuing threats to fishery resources.⁹⁸

The Fukushima nuclear disaster sent shockwaves through the international market for fish and resulted in a huge economic loss for the Japanese fishing industry. The total cost of damage to the fishing industry is estimated at around \$12.49 billion, and many fishermen have

⁹³ *Id.*, p. 152.

⁹⁴ *Id.*

⁹⁵ *Exxon Shipping Co. v. Baker*, 554 U.S. 471 (2008) (accepting compensatory damages award established in *In re Exxon Valdez*, 236 F. Supp. 2d 1043, 1063 (D. Alaska 2002).

⁹⁶ *Exxon Valdez* Oil Spill Restoration Plan: 2014 Update Injured Resources and Services, adopted by the *Exxon Valdez* Oil Spill Trustee Council (Nov. 19, 2014), pp. 36-7, available at <http://www.evostc.state.ak.us/static/PDFs/2014IRSUpdate.pdf>.

⁹⁷ *Id.*

⁹⁸ J. Steven Picou & Duane A. Gill, *The Exxon Valdez Oil Spill and Chronic Psychological Stress*, 18 *American Fisheries Society Symposium* 879, 890 (1996).

been forced out of work and have lost their livelihoods.⁹⁹ As of 2018 – 7 years after the catastrophe – the Japanese fishing industry has still not recovered.¹⁰⁰ Despite being able to catch fish that contain no traceable amounts of radiation, commercial fishermen remain unable to overcome the devastating market perception that the fish are still unsafe for consumption.¹⁰¹ Such impacts cannot in good conscience be considered “negligible.”¹⁰² The DEIS even cites to a consumer choice study conducted after the Fukushima nuclear disaster, which found that labeling seafood as being from Fukushima Prefecture resulted in lower willingness-to-pay, compared to unlabeled seafood or seafood from other prefectures.¹⁰³ Yet the DEIS dismisses the significance of that study and arbitrarily concludes that such an impact would not apply to a Pebble disaster, apparently based on some unstated, unsubstantiated assumption that the public might be less concerned about arsenic, mercury, acid sulfides, concentrated soluble radioactive materials, and other copper-mine waste than nuclear radiation.¹⁰⁴

The DEIS’s invocation of *Exxon Valdez* and Fukushima is telling. The Pebble mine would indeed introduce the risk of an environmental catastrophe on the scale of these disasters into the Bristol Bay fishery. Yet the DEIS’s inability or unwillingness to acknowledge the ruinous consequences of these disasters for affected commercial fishing industries is also telling and typifies the DEIS’s whitewash of the environmental impacts portended by the mine.

In sum, the DEIS incorrectly assesses the potential impacts that the proposed action will likely have on the Bristol Bay brand by focusing solely on price data. Contrary to what the DEIS concludes, price data alone is not a sufficient indicator of a fishery’s value, and the Bristol Bay fishery has tremendous value due to its unmatched volume of sockeye and its strong brand of quality sockeye. Contrary to what the DEIS concludes, historical data—including price data—regarding environmental contamination events *do* provide a basis for being concerned about the real adverse impacts associated with the proposed action. The DEIS gets this exactly backwards.

⁹⁹Antoni Slodkowski, *Rising Radioactive Spills Leave Fukushima Fishermen Floundering*, Reuters, May 31, 2013, <https://uk.reuters.com/article/uk-fukushima-fishermen/rising-radioactive-spills-leave-fukushima-fishermen-floundering-idUKBRE94U0FA20130531>; Jun Hongo, *Population of Fishermen Hit by Earthquake, Aging*, The Wall Street Journal – Japan Real Time Blog, Sep. 5, 2014, <https://blogs.wsj.com/japanrealttime/2014/09/05/population-of-fishermen-hit-by-earthquake-aging/>.

¹⁰⁰ *Id.*

¹⁰¹ Noriyuki Suzuki, *Fukushima’s Fishing Industry Stuck in Slow but Steady Battle to Change Public Perceptions after 3/11*, The Japan Times (Mar. 11, 2018), <https://www.japantimes.co.jp/news/2018/03/11/national/fukushimas-fishing-industry-stuck-slow-steady-battle-change-public-perceptions-3-11/>.

¹⁰² DEIS § 4.27-91.

¹⁰³ *Id.* § 4.27-92.

¹⁰⁴ *Id.*

c) Diminished market perception of Bristol Bay salmon can cause profound negative impacts to the commercial fishery.

As noted above in Section 1c, the DEIS fails to account for the financial realities facing commercial fishermen, so it cannot reasonably evaluate the economic impact of the proposed mine. Since revenue is a function of the quantity of the salmon harvested multiplied by price, any decrease in price erodes the profitability of the fishery. By undermining the ability of the Bristol Bay to obtain a premium for wild, untainted, pristine salmon, the Pebble mine jeopardizes fishery's thin profit margin. The DEIS makes no attempt to quantify the premium that Bristol Bay sockeye obtain based on brand and market position, and it ignores the promotional efforts undertaken to obtain higher prices. It therefore fails to conduct any economic analysis of the impact of the proposed mine on the profitability of the fishery.

The DEIS ignores a couple of critically important related points. First, efforts to promote the Bristol Bay fishery are relatively recent and have achieved significant success over the last 10-15 years. That traction will only build over time. The DEIS makes no effort to evaluate the opportunity available to the fishery over the life to the mine to maximize the fishery's market position. In a world where wild seafood is increasingly rare even as consumer demand for authentic, wild, natural, traceable, premium sources of food also increases, the Bristol Bay fishery is ideally suited to capitalize on its unique position. The Pebble mine threatens not only the existing brand and marketability of Bristol Bay salmon, but also denies fishermen the future opportunity to market the untouched habitat and pristine environment that produces wild salmon. That impact would be permanent and irreversible.

Second, the DEIS fails to grasp the fundamental interplay between the quantity and price of Bristol Bay salmon. The abundance of the fishery and the reliability of its harvest is a critical marketplace advantage that is jeopardized – in reality or in perception – by the mine. In contrast to commodities, increased supply helps to generate demand. The risk of diminished harvests or contamination events can therefore undermine the market standing of Bristol Bay salmon.

Third, spills that impact fish populations result not only in diminished catch but also disrupt demand, undermine the brand, and lower prices. Even a minor event that generates negative publicity without significantly affecting populations could have a devastating impact on prices and the profitability of the fishery.

In short, the mine's threat to the brand and market position of Bristol Bay salmon poses a serious risk to the profitability of the fishery that the DEIS cannot ignore.

3) The DEIS unjustifiably fails to evaluate the Pebble mine's cumulative impacts.

The DEIS fails to adequately consider reasonably foreseeable cumulative impacts from the proposed project. Most notably, based solely on the information the DEIS presents, it appears inevitable that the project will metastasize into something much larger in scope, over a much longer time frame, compounding the impact and risk not only of the project but of the massive

amount of waste and industrial development left behind. Moreover, the installation of roads and other infrastructure for this project will facilitate the development of other mining claims in the proximate area.

The DEIS does practically nothing to confront this reality. Instead of analyzing the cumulative effects of obvious and foreseeable expansion scenarios at the mine, it considers only one incremental (albeit massive) expansion and then offers speculative generalities about what impacts might occur in the future. That is not analysis. Beyond that, the DEIS refuses to consider several additional development scenarios at the mine site, under the excuse that “reasonable foreseeability” requires that these actions within the current 20-year operations period. That is not the law, nor does it track with reality.

NEPA requires that an EIS contain a “useful analysis” of the cumulative impacts of past, present, and future projects.¹⁰⁵ General statements about “possible effects” or “some risk” do not constitute a hard look.¹⁰⁶ The DEIS falls far short of this mark, for at least the following reasons:

a) The DEIS acknowledges that mine expansion and other projects are reasonably foreseeable but provides no useful analysis of them.

The recognition that a federal action will significantly affect the environment is the beginning of the NEPA process. Here, with regards to cumulative impacts, the DEIS treats this threshold as the penultimate analysis. It takes the view that as long as potential impacts are acknowledged, they are adequately identified and evaluated. That is not sufficient.

The DEIS admits that NEPA requires an evaluation of cumulative impacts here.¹⁰⁷ In fact, the DEIS spends far more time explaining what cumulative impacts are, and deciding which ones it will consider, than it does actually evaluating the cumulative impacts. The DEIS defines “cumulative effects” of the proposed project in part as follows:

Cumulative effects are interactive, synergistic, or additive effects that would result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions (RFFAs) regardless of what

¹⁰⁵ *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 811 (9th Cir. 1999) (an EIS must provide a useful analysis of cumulative impacts of past, present, and reasonably foreseeable future projects and cannot be too general or one-sided); *Northern Plains Resources Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1076 (9th Cir. 2011) (an EIS must contain a useful analysis of the cumulative impacts of future projects and their environmental effects); *Great Basin Resources Watch v. Bureau of Land Management*, 844 F.3d 1095, 1104-05 (9th Cir. 2016) (holding open mining project failed to present sufficient analysis of cumulative impacts to the region).

¹⁰⁶ *Ocean Advocates v. U.S. Army Corps of Eng’rs*, 402 F.3d 846, 868 (9th Cir. 2005).

¹⁰⁷ DEIS § 4.1-2.

agency (federal or non-federal) or person undertakes such other actions. (40 CFR Part 1508.7).¹⁰⁸

The DEIS further defines RFFAs as “existing plans, permit applications, and fiscal appropriations that are external to the proposed action, and likely (or reasonably certain) to occur.”¹⁰⁹ Beyond minor exploration activity, the DEIS does not identify any past or present mining development in the analysis area.¹¹⁰

The DEIS then lists several potential RFFAs for analysis and picks and chooses among them. Most notably, the DEIS concludes that a potential expansion of the project, as described in the Wardrop 2011 Preliminary Assessment Technical Report (commissioned by Northern Dynasty Minerals and refined in PLP 2018-RFI 062), is reasonably foreseeable and therefore, presumably, must be analyzed.¹¹¹ This plan would expand the current project to develop 55% of its reserves over an additional 58 years of mining, and 20 to 40 years of post-mining processing low-grade ore and pyritic material.¹¹² The expansion would use existing infrastructure, but it would also require thousands of acres of additional bulk and pyritic tailings storage, along with new rock storage and processing facilities, pipelines, and loading facilities.¹¹³

Section 4.6.6 contains the DEIS’s analysis of cumulative effects to the commercial and recreational fisheries. Despite that the mine expansion scenario significantly expands the mine footprint and extends the impact period by almost eight decades, the DEIS devotes only three pages to impacts on commercial and recreational fisheries, most of which are descriptive (facts already obvious and known), some of which state obvious “potential” impacts (potential impacts “come from productivity losses” – in other words, potential impacts to the fishery come from loss of fish), and little if any of which constitute actual “analysis” of cumulative impacts.¹¹⁴

With regards to the vastly expanded mine site itself, the entirety of the DEIS’s purported analysis in regard to the commercial fishery is as follows:

The primary potential future impacts to fish from the Pebble mine expansion would be direct loss of habitat, fish displacement and injury, habitat degradation, and changes in the natural flow regime. These impacts would be similar to those described for the project in Section 4.24, Fish Values. With the mine expansion, the duration of these impacts would be extended by 78 years. The construction of the south waste rock facility collection pond would affect the South Fork Koktuli and Upper Talarik Creek watersheds affecting sockeye, coho, chum, and possibly

¹⁰⁸ *Id.* § 4.1-3.

¹⁰⁹ *Id.*

¹¹⁰ *Id.* § 4.1-3 – 4.1-5.

¹¹¹ *Id.* § § 4.1-6, 4.1-8.

¹¹² *Id.* § 4.1-8, *citing* PLP 2018-RFI 062.

¹¹³ *Id.* § 4.1-8; *see* PLP 2018-RFI 062.

¹¹⁴ DEIS § 4.6-16 – 4.6-19.

Chinook salmon. Expanded development would increase the magnitude and duration of disturbance impacts. Any impacts that result in a reduction in the number of returning adult spawners would affect commercial fisheries. Commercial fishing impacts related to expansion of the mine site are limited to the Bristol Bay commercial fishery. However, the construction and operation of a deep-water port in Iniskin Bay would affect the chum and pink salmon fishery in that area and could affect the recovery of the Pacific herring fishery. These effects would be similar to the potential direct effects described for Alternatives 2 and 3 earlier in this section.¹¹⁵

There is no explanation for how these sweeping conclusions were derived, or to what extent these impacts would occur. All we know is that the massive increase in duration and scope of the proposed project “would affect” the commercial fishery. That is not a useful or sufficient analysis of impacts. At most, the DEIS seems to suggest that the same impact of the proposed project also applies to the massively expanded mining scenario, as if impact stays constant no matter how big the project ultimately gets. There is no basis for that conclusion.

Section 4.24.6, in turn, contains one page on the cumulative impact of the expanded mine site on the commercial fishery. This section largely restates Section 4.6.6. Summarizing: potential impacts to the fishery include impacts to fish and fish habitat; they would be the same impacts as described for the proposed project, just over a longer duration; the expansion would require more water treatment and disturb more area; the risk of spills would increase. The one and only additional attempt at analysis is a single sentence:

At the mine site, an additional 35 miles of anadromous stream habitat would be lost in the SFK and UTC watersheds, including the entire footprint of Frying Pan Lake, which would inundated [sic] by the south collection pond, affecting sockeye, coho, chum, and potentially Chinook salmon.¹¹⁶

Again here, there is no explanation of how the 35-mile figure is derived, and there is no attempt at evaluating the effects to these salmon populations.

The Executive Summary then disclaims *any* impact of the expanded mine scenario to the fisheries:

[P]opulation-level effects on fish and fish habitat are not projected, given the limited abundance of fish and productivity of habitat affected by expansion of the mine site, and permit requirements for anadromous stream crossings by roads and pipelines.¹¹⁷

¹¹⁵ *Id.* § 4.6-17; *see also* DEIS § ES-55 (restating and summarizing same).

¹¹⁶ DEIS § 4.24-37.

¹¹⁷ *Id.* § ES-52.

The DEIS is at least unintentionally honest here, because the population effects are, quite literally, *not projected* – there is no such analysis. As shown above, while acknowledging that the mine expansion will impact sockeye and other salmonids, the DEIS makes no attempt to evaluate what additional habitat will be impacted, either within the expanded footprint or downstream from it.

Elsewhere, the DEIS seems to contradict these conclusions, or at least call them into serious question. For example, when discussing water and sediment quality, the DEIS acknowledges that the estimated area of disturbance “would be nearly tripled” over the proposed project, increasing the footprint from 12,371 to 34,790 acres.¹¹⁸ As a result, the DEIS states, “[t]he potential for cumulative impacts on surface water, groundwater, and sediment would increase substantially.”¹¹⁹ Likewise, the DEIS predicts that an additional 12,445 acres of wetlands would be “affected” (which presumably means destroyed).¹²⁰ It is impossible to square these statements with the summary conclusion that there will be no impacts to fish or fish habitat.¹²¹

Lastly, the DEIS provides a subsection on cumulative effects in regard to spill risk. Section 4.27.8 states that spills are not typically a RFFA because they are not “planned or routine.”¹²² But it then acknowledges – again stating the obvious – that the expanded mine scenario “could increase the volume and geographic extent of an unintentional release.”¹²³ It further acknowledges that the expanded mine would require additional ponds and facilities, but states that the risk is the same as previously described for the proposed project, although the impact will “potentially” increase.¹²⁴ In other words, under the DEIS’s logic, scale and duration do not increase risk, and the increase to impact is anyone’s guess.¹²⁵

The EIS fails to adequately consider the reasonably foreseeable road improvement and community development projects’ cumulative effects on BB salmon fishery. The EIS concedes that there will be anticipated road improvement projects and new transportation corridors needed, which would result in sedimentation and changes to the salmon populations “affecting the value of the commercial fishery” but summarily dismisses it has having no impact worth evaluating.

¹¹⁸ *Id.* § 4.18-36.

¹¹⁹ *Id.*

¹²⁰ *Id.* § 4.22-40.

¹²¹ *Id.* § ES-52.

¹²² *Id.* § 4.27-127.

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ The DEIS is similarly opaque with respect to impacts from other actions listed in the RFFA analysis. For example, the EIS concedes that there will be anticipated road improvement projects and new transportation corridors needed, which would result in sedimentation and “changes to salmon...populations thus affecting the value of the commercial fishery.” DEIS § 4.6-18. But it makes no attempt to evaluate what those impacts might be.

After winding around through the DEIS's various references to cumulative impacts, the reader finally comes to understand that, in fact, there is no analysis. The public and decision-makers alike are left to wonder what they have learned about the environmental impact of this expected and massive expansion of the existing project. And the answer is absolutely nothing.

b) The DEIS neglects to evaluate other reasonably foreseeable actions at or near the same mine site and in the surrounding area.

Beyond the one expansion scenario it purports to assess, the DEIS identifies five additional expansions (Pebble East and West, Pebble South, Big Chunk North, Big Chunk South, and Groundhog) at and in the immediate vicinity of the current project.¹²⁶ At least some of these are owned by Northern Dynasty Minerals and could use the infrastructure of the proposed project.¹²⁷ The DEIS deems "exploration" of these expansions as a RFFA but finds that actual "development" of the claims is not, because development would not occur "within the operations timeframe" of the proposed project.¹²⁸ Overall, the DEIS limits its consideration of any RFFAs only to those actions that, in addition to meeting other criteria, "may occur during construction and operation of the proposed project."¹²⁹ In other words, any action that is expected to occur after the 20-year operations period ends is, by the DEIS's self-serving definition, not reasonably foreseeable.

By adopting the ruse that RFFAs would include exploration but not development, the DEIS can then render the impacts of these massive additional expansions as "seasonally sporadic, temporary, and localized, based on remoteness."¹³⁰ Although this fails to constitute any actual evaluation of impact, the DEIS is then able to side-step any consideration of what these additional expansions might mean to the area and its fisheries.

There are several fundamental defects with this conclusion. First, even though an action may not occur within the operations period of the proposed, minimum-scope project, it may still be reasonably foreseeable. There is seemingly no statute, regulation, or case law that supports the DEIS's conclusion on this point. And in fact, the case law suggests the opposite. Under NEPA review, an effect is deemed to be "reasonably foreseeable" if it is "sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision."¹³¹ At a minimum, if it is reasonably foreseeable that the mining project could expand in duration and

¹²⁶ DEIS Fig. 4.1-1.

¹²⁷ *Id.* § 4.1-9 - 4.1-11.

¹²⁸ The DEIS identifies a number of other mineral and oil and gas development projects in the surrounding areas, at least two of which (Fog Lake and Kamishak) could possibly take advantage of the transportation corridor built for the proposed project, but it nevertheless declines to consider these additional projects as RFFAs. The DEIS's failure to include the development of all these other projects in its cumulative effects analysis is not justified and renders it legally defective.

¹²⁹ DEIS § 4.1-6.

¹³⁰ *Id.* § ES-52.

¹³¹ *City of Shoreacres v. Waterworth*, 420 F.3d 440, 453 (5th Cir. 2005); *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992).

scope for at least 78 years, and still only capture 55% of the available resources, it is more reasonable to expect dramatic expansion. A person of ordinary prudence would have taken those factors into account in the cumulative impacts to the environment.

Second, the DEIS lacks the information that would be needed to assess the likelihood of expansion. In particular, there is no information regarding the expected cost or profitability of the proposed project, the expected expansion, or the five additional expansions. The Army Corps is legally required to consider cost in its analysis of practicable alternatives.¹³² If, for example, either the project does not become profitable until well into the expansion scenario, or the additional expansions can be performed at relatively little additional expense (after all, the infrastructure is already there), then it is reasonable to foresee that the project will continue to expand far beyond the 78-year extended timeframe, if not sooner. At a minimum, given the large upfront investment in infrastructure needed to undertake just the proposed project, it is reasonable to expect that expanding the mine will be far cheaper than creating it to begin with. If by undertaking the proposed project the expansion scenarios become economically feasible, then by definition, they are reasonably foreseeable, and their cumulative effects must be studied.

Third, by shirking this analysis of cumulative effects, the DEIS never considers how continued expansion of the proposed project might increase the impact from either induced development (more roads, more crossings, more facilities, more dust, etc.) or increased risk and impact of spills. The relationship between the scope and duration of the project and the risk and impact of spills is vital to understanding the potential adverse impact of this project. But the DEIS leaves us in the dark on these fundamental questions.

More broadly, the DEIS should evaluate whether the proposed project would result in development of additional claims in the surrounding area of the mine site. Such claims may not be economically feasible to develop now, but the infrastructure of the proposed project may make them so. This omission leaves the DEIS's cumulative impacts analysis incomplete.

By improperly disregarding the full extent of mining and development that could occur as a result of the proposed project, the DEIS dodges the fundamental question of whether this project is worth the impact and risk to Bristol Bay's invaluable biological and ecological resources. The DEIS's answer is to turn NEPA on its head: leap now, look later.

c) The DEIS's analysis of cumulative impacts ignores the EPA's 2014 Report and findings.

The 2014 EPA Assessment exposes in plain view the shortcomings of the DEIS's cumulative impacts analysis. It is inexplicable how the Army Corps could issue the DEIS in its current form without considering the cumulative impacts raised in the EPA's findings.

¹³² See 40 C.F.R. § 230.10(a).

The 2014 EPA Assessment considers “three realistic mine scenarios” to represent different stages in the potential mining of the deposit: Pebble .25, Pebble 2.0, and Pebble 6.5.¹³³ Each represented the amount of ore processed in billions of tons, with operation periods lasting 20, 25, and 78 years respectively, and with tailings storage facilities covering 6.8, 16.1, and 48.6 km² respectively (2.6, 6.2, and 18.8 m²).¹³⁴ (Even these didn’t cover the total size of the Pebble deposit, which is an estimated nearly 12 billion tons.¹³⁵) The EPA also considered the post-mining phase, which it said could continue for centuries and possibly in perpetuity, as the mine wastes would be “persistent.”¹³⁶ Finally, the EPA considered risks from both routine mine operation as well as various failure scenarios.¹³⁷

The EPA further recognized the compounded uncertainties due to the complexity of mining systems, the unpredictability of accidents and unforeseen events, the increase in flooding expected from climate change, and the centuries-long timeframes under consideration. As an example, the EPA cited the Fort Knox Mine, which was permitted as a “no-discharge” facility but needed later to obtain a permit to discharge wastewater into a nearby stream.¹³⁸

The EPA also recognizes that its analysis focused only on the major mine components – the mine pit, the tailings storage facilities (TSFs), and the transportation corridor. But the EPA further observed:

The actual infrastructure needed to operate any large-scale mine would be significantly more extensive than these four components and would result in larger cumulative impacts of a single mine.¹³⁹

Additional infrastructure needs would include mining and processing facilities, drainage management structures, other storage and disposal facilities, and other operational infrastructure (e.g., administrative buildings, dorms, a sewage treatment plant, a power generation plant, a truck stop, etc.).

According to the EPA, “[t]he cumulative impacts of a large-scale mine at the Pebble deposit likely would be much larger than the footprints evaluated in the mine scenarios.”¹⁴⁰ In terms of population alone, the EPA observed, the mine site would rival Dillingham as the largest population center in the watershed during construction, and the second largest during operation. And road infrastructure would need to support a fleet of 50-100 vehicles, in addition to 150 large

¹³³ 2014 EPA Assessment at ES-3.

¹³⁴ *Id.* at ES-10-11.

¹³⁵ *Id.* at ES-10, 6-4.

¹³⁶ *Id.* ES-4.

¹³⁷ *Id.* ES-10-11.

¹³⁸ *Id.* at 6-4. Some of the impacts listed in this section might also be considered as “direct” or “indirect,” but regardless, they all need to be studied.

¹³⁹ 2014 EPA Assessment at 6-3.

¹⁴⁰ *Id.*

ore-hauling trucks, which would pose risks similar to (but in addition to) those recognized for the transportation corridor.¹⁴¹

The EPA further expresses concern about the siting of the tailings storage facilities (TSFs), cautioning that the placement “does not imply that these sites would not pose unacceptable environmental harm, or that they would be the least environmentally damaging practicable alternatives for purposes of Clean Water Act permitting.”¹⁴² Moreover, the low-grade nature of the ore would result in large amounts of tailings: 99% of the material processed, with 85% as NAG bulk and 14% as PAG (pyritic).¹⁴³

The EPA notes that mining operations would affect the quantity, quality, timing, and distribution of surface flows. “Mining operations always consume some water, so there would be less water available in the landscape during active mining than before the mine was present.”¹⁴⁴ “Many of the potentially significant impacts of large-scale mining relate to a mine’s use of water and its impact on water resources.”¹⁴⁵ Water deficits for the three scenarios would be 3.9, 26, and 27 million m³ / year.¹⁴⁶

The EPA finds that development of any mine in the Bristol Bay watershed would require substantial expansion and improvement of the region’s transportation infrastructure. “The Bristol Bay watershed is located in one of the last remaining, virtually roadless regions in the United States.”¹⁴⁷

The EPA recognizes the far-reaching cumulative impacts and risks of the post-closure phase:

Seepage and leachate monitoring and collection systems, as well as the WWTP, might need to be maintained for hundreds to thousands of years. It is impossible to evaluate the success of such long-term collection and treatment systems for mines. No examples exist, because these timeframes exceed both existing systems and most human institutions.¹⁴⁸

“TSFs would require active management for hundreds to thousands of years.”¹⁴⁹

¹⁴¹ *Id.*

¹⁴² *Id.* at 6-11.

¹⁴³ *Id.*

¹⁴⁴ *Id.* at 6-15.

¹⁴⁵ *Id.* at 6-23.

¹⁴⁶ *Id.* at 6-25.

¹⁴⁷ 2014 EPA Assessment at 6-16.

¹⁴⁸ *Id.* at 6-27.

¹⁴⁹ *Id.* at 6-33.

The EPA also recognizes a far more extensive amount of foreseeable mining in the area should the proposed project proceed. Based on Ghaffari et al. (2011), the EPA observes that Pebble 2.0 and Pebble 6.5 have both undergone extensive exploration and assessment and are “economically viable, technically feasible and permittable.”¹⁵⁰ Other mines developed in the area would have “characteristics and impacts” closer to the Pebble .25 plan. The EPA “assume[s] that the mine would be closed after all economically profitable ore was removed from the site.”¹⁵¹

The EPA recognizes that additional mines would pose cumulative risks.¹⁵² In fact, the report devotes an entire chapter – 35 pages of tables, maps, and analysis – just to the cumulative risks of multiple mines.¹⁵³ “If the infrastructure for one mine is built, it would likely facilitate the development of additional mines.”¹⁵⁴ Citing NEPA, the Report states the clear legal standard:

Assessing the cumulative impacts of multiple mines requires considering the impacts of their combined footprints, as well as the cumulative risks of leaks, spills, and other accidents and failures associated with each individual mine.¹⁵⁵

The report continues:

The original mine—with its associated transportation corridor, port, power generation facilities, and other infrastructure—likely would initiate the accumulation of impacts across the watersheds. Mineralized areas in the region (Figure 13-1) are currently without development infrastructure (e.g., roads, utilities, and airports), which creates an expensive barrier to development. Thus, it is reasonably foreseeable that infrastructure development for an initial mine could make mining cost-effective for other, smaller mineral deposits, facilitating further accumulation of impacts. In addition, the initial and subsequent mines would increase accessibility of the region, causing other induced development and associated impacts.¹⁵⁶

“As environmental effects on freshwater habitats accumulate, the magnitude of total impact on the region’s fisheries would increase.”¹⁵⁷

The EPA then identifies 15 mining prospects (in addition to the Pebble deposit, which would include all three mine scenarios plus Pebble East and West and Pebble South) with “more

¹⁵⁰ *Id.* at 6-20.

¹⁵¹ *Id.* at 6-27.

¹⁵² *Id.* at ES-26.

¹⁵³ *Id.* at Ch. 13.

¹⁵⁴ *Id.* at 13-1.

¹⁵⁵ *Id.*

¹⁵⁶ 2014 EPA Assessment at 13-2.

¹⁵⁷ *Id.*

than minimal exploration” in the Nushagak and Kvichak River watersheds.¹⁵⁸ This compares to only 4 identified in the DEIS, which fails to explain why these 11 other prospects are not worthy of consideration.¹⁵⁹ The report identifies further cumulative impacts from “induced development” due to mine-related activity.¹⁶⁰

EPA analyzes specific cumulative impacts for six additional mine projects: Pebble South/PEB, Big Chunk South, Big Chunk North, Groundhog, AUDN/Iliamna, and Humble.¹⁶¹ The report describes its estimates of habitat loss as “conservative.”¹⁶² The report explains the methodology for its estimates and summarizes its findings on Table 13-8, which shows a range of 43.2 to 69.5 km (26.8 to 43.2 miles) of *additional* streams lost just to these six projects, along with 9.2 to 29.1 km² (3.6 to 11.2 miles²) of water and wetlands.¹⁶³ The EPA’s conclusion is stark: “These influences [of the six mines] would likely accumulate over time and space, potentially having widespread and extensive effects on the region’s populations of fish, wildlife, and human residents.”¹⁶⁴

In particular, this accumulation of impacts would “exacerbate[e] total effects on salmon.”¹⁶⁵ Regarding Pacific salmon, the “effect of each stressor accumulates regardless of whether factors occur at the same time, or even in temporal proximity.”¹⁶⁶ “The overall result of these cumulative effects has been the reduction and even extinction of many salmonid populations.”¹⁶⁷ “In the Pacific Northwest, habitat degradation and loss related to human land use have obviously been a major factor in salmon declines by reducing population productivity, adult densities, and early-life-stage production over large geographic areas (Ruckelshaus et al. 2002).¹⁶⁸

In a final analysis, the 2014 EPA Assessment addresses the fact that each one of these projects will create long-term post-closure issues:

Closure at each mine would typically require hundreds to thousands of years of monitoring, maintenance, and treatment of any water flowing off-site. Given the magnitude of these timeframes, we would expect multiple and more frequent system failures in future years. In light of the relatively ephemeral nature of human institutions over these timeframes, we would expect that monitoring, maintenance,

¹⁵⁸ *Id.* at 13-3.

¹⁵⁹ *See* DEIS § 4.1.

¹⁶⁰ 2014 EPA Assessment at 13-31 – 13-32.

¹⁶¹ *Id.* at 13-8 – 13-31.

¹⁶² *Id.* at 13-8.

¹⁶³ *Id.* at 13-21.

¹⁶⁴ *Id.* at 13-27.

¹⁶⁵ 2014 EPA Assessment at 13-2.

¹⁶⁶ *Id.*

¹⁶⁷ *Id.*

¹⁶⁸ *Id.* at 13-3; *see also* Box 13-2 (explaining other examples of mine scenarios gone wrong).

and treatment would eventually cease, leading to increased release of contaminated waters downstream.¹⁶⁹

It is hard to imagine a more dire warning for what the proposed project means to the future of the region, and in particular the risk of catastrophic impact to the Bristol Bay salmon fishery. This stark conclusion amounts to a death sentence.

In the context of the 2014 EPA Assessment, the DEIS's treatment of cumulative impacts seems not only fatally deficient, but outright unconscionable. Incredibly, the DEIS does not disagree with any of the EPA's analysis; instead, it just chooses to ignore that it exists. Instead of taking a hard look, the DEIS turns a blind eye.

d) Regarding catastrophic failure, the science backs the EPA's findings, not the Army Corps', but the Army Corps nevertheless puts the risk of failure on the backs of the fishermen.

Modelling studies show that the impacts of a tailings dam failure could be catastrophic to salmon habitat in the Bristol Bay watershed, supporting the EPA's conclusions.¹⁷⁰ Because tailings would be stored in on-site facilities in perpetuity, the risk of failure persists indefinitely, significantly increasing the odds, if not outright assuring, that a failure will happen at some point. Yet the DEIS's analysis on tailings failures is constrained to the 20-year operational period of the dam. This neglects the obvious fact that the risk of failure accumulates over time, increasing the risk significantly over time.¹⁷¹ In other words, over time, a catastrophic TSF failure becomes *more* foreseeable, not less.

Even worse, by eliminating the post-operational phase from the analysis, the Army Corps fails to ensure that the operator will remain responsible for compensatory damages and reparations over the long haul.¹⁷² The operator, not the fishery and those who depend on it, must bear the risk of failure indefinitely and cannot be allowed to treat the risk as an externality that it walks away from when the mine closes. And the only way this can occur is if the Army Corps studies the cumulative effects of catastrophic failures and considers this as a "cost" in its analysis of alternatives.¹⁷³

¹⁶⁹ *Id.* at 13-21.

¹⁷⁰ 2019 Lynker Report, pp. 41-44.

¹⁷¹ *Id.*, p. 1.

¹⁷² *See* 40 C.F.R. § 230.91 (implementing compensatory mitigation measures).

¹⁷³ *See* 40 C.F.R. § 230.10(a).

e) Evaluating a scaled-down version of the Pebble mine without assessing cumulative impacts from future development violates NEPA.

The EPA recommendation considered three versions of the Pebble mine and concluded that all versions, including the smallest, posed an unacceptable risk to the Bristol Bay watershed. The EPA further recognized that the small scenario – the one closest in size to the proposed project in the DEIS – was “significantly smaller” than the mine presented to the operator’s investors.¹⁷⁴ The mine’s effort to evade an honest consideration of impacts is transparent – it applied for a permit that significantly scales back the proposed project, while failing to disclose the minimum viable scale for mining development and operations, withholding financial information necessary to evaluating the full, intended scale of the mine, and omitting any information about future expansion.

It is arbitrary and capricious – and a violation of the letter and spirit of NEPA – for the Army Corps to indulge the applicant’s game. The Army Corps has an obligation to evaluate the impacts from the reasonably foreseeable project, rather than allowing the applicant to bound analysis of environmental impacts to an unreasonable, unlikely project scope as a ruse to obtain a permit.

4) Reasonable alternatives and mitigation measures in the DEIS are unsupported and inadequate.

NEPA and its implementing regulations require that an agency “[r]igorously explore and objectively evaluate all reasonable alternatives.”¹⁷⁵ Reasonable alternatives are those that will accomplish the intended purpose, are technically and economically feasible, and yet have a lesser or no impact, by virtue of avoiding or minimizing the adverse effects of the proposal.¹⁷⁶ A Clean Water Act 404 permit cannot be issued if practicable alternatives to the project exist.¹⁷⁷

Here, the no-action alternative has already been recognized by the EPA as the only viable, acceptable, and lawful alternative to mining in the Bristol Bay headwaters.¹⁷⁸ The EPA evaluated several versions of the project with varying scales, and it found that the no-action alternative was the only option with acceptable environmental and economic risks.¹⁷⁹ The EPA felt so strongly that it utilized its rarely invoked veto authority under Section 404(c) of the Clean Water Act in an attempt to prohibit, restrict, and deny the use of the Bristol Bay headwaters for

¹⁷⁴ 2014 EPA News Release

¹⁷⁵ 42 U.S.C. § § 4332(2)(C)(iii), 4332(E); 40 C.F.R. § 1502.14(a).

¹⁷⁶ 40 C.F.R. § § 1500.2, 1502.1, 1502.14, 1502.16.

¹⁷⁷ 40 C.F.R. § 230.10(a).

¹⁷⁸ 2014 EPA Proposed Determination at ES-1.

¹⁷⁹ *Id.* at ES-3-5 (“mining of the Pebble deposit at any of these sizes, even the smallest could result in significant and unacceptable adverse effects on ecologically important streams, wetlands, lakes, and ponders and the fishery areas they support”).

mining by PLP. The EPA noted that it has “used its Section 404(c) authority judiciously and sparingly, having completely only 13 Section 404(c) actions in the 42-year history of the CWA” but choose to do so here in order to “protect important fishery areas in the SFK, NFK, and UTC watersheds from unacceptable adverse effects.”¹⁸⁰ The DEIS ignores that finding.

Applicants are not entitled to a 404 permit. Reviewing agencies must therefore have the authority to evaluate the evidence and select a no-action alternative. Here, the no-action alternative is the only option that avoids a large-scale, dramatic change to the Bristol Bay watershed that threatens the immediate and long-term viability of the commercial salmon fishery. The EPA has already recognized this fact. Any reversal of that finding would be arbitrary, capricious, and unlawful agency action in violation of NEPA, the Clean Water Act, and the Administrative Procedure Act. Accordingly, the no-action alternative is the only lawful option that mitigates the impacts of the mine.

Finally, an EIS must include appropriate mitigation measures and means to mitigate adverse environmental impacts.¹⁸¹ Mitigation includes (a) avoiding the impact altogether by not taking a certain action or part of any action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; (e) compensating for the impact by replacing or providing substitute resources or environments.¹⁸² The mitigation measures considered by the DEIS are wholly insufficient.

The DEIS contains no rehabilitation or restoration plan regarding the Bristol Bay fishery. It defies common sense not to require monitoring of the headwaters to ensure that the proposed action does not actually result in unacceptable levels of contamination. Also missing is any remediation plan should those waters become contaminated. Instead of devising a mitigation and remediation plan, the DEIS blindly trusts that no contamination will occur – something that the science and history disprove. The DEIS even acknowledges that bridges and culverts will need long-term maintenance so as not to block fish passage and result in habitat destruction and population loss. Yet the DEIS provides no rehabilitation or restoration plan with regard to the dozens of bridges and culverts that will be constructed for the proposed action.

It is not acceptable to claim – as the DEIS does – that a salmon hatchery can mitigate impacts from the mine on wild salmon spawning. There is no replacement for a wild salmon fishery, and the DEIS fails to account for the many biological and economic impacts created by wild, naturally reproducing salmon. Nor does the DEIS explain who will pay for fundamentally altering the Bristol Bay fishery to a managed fishery that relies on hatchery salmon. Like the suggestion of a hatchery as a mitigation measure, many of the DEIS’s mitigation measures are grounding in wishful thinking rather than scientific analysis.

¹⁸⁰ *Id.* at ES-5.

¹⁸¹ 40 C.F.R. § § 1502.14(f), 1502.16(h), 1508.20.

¹⁸² 40 C.F.R. § 1508.20.

The DEIS or permit could at the very least require the operator to establish a bond to be used to restore adversely affected fish habitat and fish population and to compensate the commercial fishing industry for any adverse impacts to the Bristol Bay fishery. Yet the DEIS fails to do even that. Nor does the DEIS require provisions for adequate monitoring of water quality and salmon impacts for the many decades during which the mine will threaten the fishery. Likewise, the DEIS is silent on a required action plan to mitigate and halt spills or releases from the mine.

The DEIS contemplates allowing the Pebble mine to place a guillotine over the Bristol Bay fishery that will hang over it for generations, without adopting any mitigation plan to halt, ameliorate, or redress the catastrophic impacts should the blade fall.

Conclusion

BBRSDA exists to promote economic development, and its mission entails economic progress. While BBRSDA understands the role and need for mining as a source of economic development, the Pebble mine is, in the words of Senator Ted Stevens, “the wrong mine for the wrong place.” Development of the Pebble mine would be disastrous for Bristol Bay, Alaska, and the nation. Even the first step of approving a permit for the mine, and certainly the commencement of any development of the mine, would cause irreparable harm to the brand and market standing of the Bristol Bay fishery.

The Army Corps should protect the Bristol Bay fishery and the current and future generations who stand to benefit from it. The Army Corps should reject the DEIS as inadequate and deny the permit application for this mine. The only proper response here is “no action.”

Sincerely,



Jonathan W. Dettmann



Craig S. Coleman