

The Corps Determination of Basic and Overall Project Purposes Improperly Eliminates Consideration of Potentially Less Environmentally Damaging Practicable Alternatives

A Report Prepared for Earthworks
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Summary:

Where a permit applicant's project is not water-dependent and would result in the discharge of fill material into wetlands or other "special aquatic sites," Federal Clean Water Act regulations place a burden of proof on the applicant to clearly demonstrate that there are no practicable alternatives to the applicant's proposal that could achieve its basic project purpose with less environmental harm.² The regulations presume that such alternatives do exist,³ and in the absence of such a clear demonstration, the Corps is required to deny the permit application.⁴

In the case of the DEIS for the Pebble Mine project, the Corps has improperly lifted the applicant's regulatory burden of proof by defining the basic and overall purposes of the project as the development and operation of "a copper, gold, and molybdenum mine in Alaska in order to meet current and future demand."⁵ This determination defines the basic and overall project purposes so narrowly as to effectively limit consideration of alternatives to the applicant's preferred site.

Moreover, the Corps' definition is far narrower than the applicant's own search for alternatives that considered copper porphyry deposits throughout the Americas, and was not limited by the presence or lack of a particular associated metal, such as molybdenum. In fact, the applicant did not discover significant molybdenum mineralization in the Pebble deposit until after acquiring mining rights there.

By so narrowly defining the project purposes, the analyses in the DEIS thwart the intents of the Clean Water Act's 404(b)(1) alternatives analysis 1) to limit discharges into the nation's waters to those with the least negative environmental consequences (the least environmentally

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² 40 CFR§230.10(a)(2)

³ 40 CFR§230.10(a)(3)

⁴ See Corps regulations at 33 CFR 323.6(a): "*The district engineer will review applications for permits for the discharge of dredged or fill material into waters of the United States in accordance with guidelines promulgated by the Administrator, EPA, under authority of section 404(b)(1) of the CWA. (see 40 CFR Part 230.) Subject to consideration of any economic impact on navigation and anchorage pursuant to section 404(b)(2), a permit will be denied if the discharge that would be authorized by such a permit would not comply with the 404(b)(1) guidelines. If the district engineer determines that the proposed discharge would comply with the 404(b)(1) guidelines, he will grant the permit unless issuance would be contrary to the public interest.*" (emphasis added)

⁵ DEIS, Chapter 1, page 1-4.

damaging practicable alternative or LEDPA), and 2) to firmly place the burden of proof on the applicant to clearly demonstrate that less-damaging alternatives do not, in fact, exist. The Corps has not compelled the applicant to make such clear demonstrations, including consideration of copper porphyry deposits that the applicant had, in fact, assessed prior to acquiring rights to the Pebble deposit.

As written, the DEIS will not provide the District Engineer with the clear evidence he or she would need to support a formal finding that the project, as proposed, complies with the 404(b)(1) regulations.⁶ And because of how the Corps has chosen to pre-emptively eliminate alternatives in the DEIS, a proposed copper mine that would destroy more wetland and aquatic areas than any other copper mine in the United States may be what the Corps is limiting itself to conclude is the LEDPA.

The DEIS should be revised to properly assess and disclose to the public the full range of alternatives that may be practicable and less environmentally damaging in achieving the basic purpose of the proposed project.

Analysis:

Federal Clean Water Act (CWA) regulations prohibit the discharge of dredged or fill material into any regulated “waters of the United States,” including wetlands if there is a less environmentally damaging practicable alternative to the proposed discharge (the LEDPA). Specifically, *“an alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered.”*⁷ (emphasis added)

The 404(b)(1) regulations place the burden of proof squarely on the applicant to prove that its proposal is the least damaging alternative if the applicant’s project would discharge dredged or fill material are proposed in “special aquatic sites” for purposes that are not water-dependent.⁸ Here, the Corps properly finds that the basic purpose of mining is not water-dependent, and the DEIS discloses that the Pebble project would discharge fill material into a) wetlands, b) riffle and pool complexes, c) vegetated shallows, and d) mudflats, all of which are “special aquatic sites” under the regulations.⁹

⁶ Corps regulatory policies stress the importance of wetlands protection in permit evaluations, stating that “No permit will be granted which involves the alteration of wetlands identified as important by paragraph (b)(2) of this section or because of provisions of paragraph (b)(3), of this section unless the district engineer concludes, on the basis of the analysis required in paragraph (a) of this section, that the benefits of the proposed alteration outweigh the damage to the wetlands resource. In evaluating whether a particular discharge activity should be permitted, the district engineer shall apply the section 404(b)(1) guidelines (40 CFR part 230.10(a) (1), (2), (3)).” See 33 CFR §320.4(b)(4).

⁷ 40 CFR §230.10(a)(2).

⁸ See 40 CFR §230.10(a).

⁹ See 40 CFR §230.3(q-1).

Accordingly, the regulations presume that less-environmentally damaging alternatives are available to the applicant and practicable, unless the applicant clearly demonstrates otherwise. In the absence of such a clear showing, the Corps is required to deny the application for a permit.¹⁰

For the purposes of determining compliance with federal Clean Water Act regulations, the Corps bears the responsibility of determining the basic and overall project purposes of any projects that propose to discharge dredged or fill material. The basic project purpose is typically generic, and the overall project purposes adds the consideration of project costs, logistical constraints, and technical concerns.¹¹

Generically, the Corps determined the basic purpose of the Pebble project to be mining;¹² this is appropriate, although hardrock mining would also have been a legitimate determination. The Corps also stated appropriately that *“the applicant's stated purpose is made too narrow by limiting the proposed development to the Pebble deposit. The public's interest in commodities such as copper, gold, and molybdenum does not dictate a particular source of these commodities”*¹³ (emphasis added). In other words, if mining a different ore deposit is practicable and less damaging environmentally, it must be considered.

Under the regulations, an appropriately generic determination of overall project purposes would have been mining a copper porphyry deposit for copper and associated minerals. CWA case law would suggest that it would be inappropriate for the Corps to substitute an entirely different target metal than that targeted by the applicant (*i.e.*, porphyry copper deposits),¹⁴ but the project purpose statements should not be so specific as to eliminate otherwise practicable alternatives that do not have the same secondary mineralization as the applicant's preferred site.

Under the regulations, any “practicable” alternative to achieve the basic and overall project purposes must be determined to be cost-effective, when viewed from the perspective of the industry as a whole.¹⁵ But the LEDPA need not be the least-costly, nor the most profitable.¹⁶

¹⁰ See 40 CFR§230.12(a)(3)(i) and (iv).

¹¹ The preamble to the 404(b)(1) regulations provides the following guidance on the meaning of “basic purpose”: *“Non-water-dependent” discharges are those associated with activities which do not require access or proximity to or siting within the special aquatic site to fulfill their basic purpose. An example is a fill to create a restaurant site, since restaurants do not need to be in wetlands to fulfill their basic purpose of feeding people.* (45 Fed. Reg. 85339, Dec. 24, 1980: emphases added)

¹² <https://www.pebbleprojecteis.com/files/02e12d01-4609-4bb9-bb78-ffe02e41ccb6> (How Alternatives will be Developed, page 2)

¹³ DEIS, Appendix B, page B-3.

¹⁴ See Louisiana Wildlife Federation, Inc. v. York, 761 F.2d 1044 (5th Cir.).

¹⁵ The financial circumstances of a particular applicant are not considered relevant if an alternative could be achieved practicably by a “typical” applicant pursuing purpose. The preamble to the 404(b)(1) regulations states: *“Our intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project. The term economic might be construed to include consideration of the applicant's financial standing, or investment, or market share, a cumbersome inquiry which is not necessarily material to the objectives of the Guidelines. We consider it implicit that, to be practicable, an alternative must be capable of achieving the basic purpose of the proposed activity.”* (45 Fed. Reg. 85339, Dec. 24, 1980)

¹⁶ Louisiana Wildlife Federation, Inc. v. York, 761 F.2d 1044 (5th Cir.). The Court noted that, in assessing practicable alternatives, the Corps had properly chosen *“alternatives that reduced both the applicants' profit and the economic efficiency of their proposed operations in order to preserve other environmental values.”*

The determination of basic and overall project purposes should never be so narrowly defined as to eliminate the consideration of legitimate alternatives that could achieve the basic project purpose with the least environmental harm that is practicable under the regulations. This specifically includes alternatives that may be “*obtained, utilized, expanded, or managed*,”¹⁷ including existing or previously closed mining operations, or alternative ore deposits that were available to the applicant when and since it entered the market.¹⁸

Unfortunately, in the case of the Pebble project, the Corps has inappropriately defined the overall project “purpose”¹⁹ in ways that preclude consideration of whole categories of alternatives that might otherwise be practicable and less damaging environmentally than the applicant’s preferred alternative. Whereas the Corps has defined the basic project purpose as “mining,” it has adopted an overly expansive interpretation of the regulatory term “overall project purposes.”

The Corps accepts the applicant’s statement that there is an “*increasing global demand for commodities such as copper, gold, and molybdenum*.”²⁰ It is noteworthy that PLP uses the term “such as,” suggesting that the overall project purposes do not require that all three of these metals be present, and that a copper porphyry deposit rich in other combinations of metals might also achieve the applicant’s basic purpose of mining. That purpose and need is reflected in the applicant’s own search for alternatives, but is conspicuously absent in the DEIS.

In an interim report,²¹ the Corps’ EIS contractor, AECOM, references a 2015 technical report by the applicant stating that it was not until after the applicant’s 2001 leasing of the mineral rights to the Pebble deposit that the applicant discovered additional mineralization of recoverable quantities of molybdenum.²² Obviously, the apparent absence of economically recoverable

¹⁷ See 40 CFR§230.10(a)(2).

¹⁸ See Bersani v. United States Environmental Protection Agency, 850 F. 2d 36 and Bersani v. Robichaud, 850 F.2d 36, 43-44 (2d Cir. 1988). In the latter case, discussing a shopping mall proposed by applicant Pyramid Development, the court states that “*the preamble to the 404(b)(1) guidelines states that the purpose of the “practicable alternatives” analysis is ‘to recognize the special value of wetlands and to avoid their unnecessary destruction, particularly where practicable alternatives were available in non-aquatic areas to achieve the basic purpose of the proposal.’ 45 Fed.Reg. 85,338 (1980). In other words, the purpose is to create an incentive for developers to avoid choosing wetlands when they could choose an alternative upland site. Pyramid’s reading of the regulations would thwart this purpose because it would remove the incentive for a developer to search for an alternative site at the time such an incentive is needed, i.e., at the time it is making the decision to select a particular site. If the practicable alternatives analysis were applied to the time of the application for a permit, the developer would have little incentive to search for alternatives, especially if it were confident that alternatives soon would disappear.*”

¹⁹ It may be noteworthy that the singular term “overall project purpose” does not appear in the regulations. It is a term that has been coined by the Corps as its interpretation of EPA’s regulations, without benefit of rulemaking. The author contends that the intent of the regulations was to apply considerations of costs, and logistical and technical constraints to the achieving the basic project purpose at any alternative sites. The restrictions to discharges were not intended to be used to artificially limit the range of alternatives, as the Corps has done in the DEIS.

²⁰ DEIS, Chapter 1, page 1-3.

²¹ Report from Bill Killam and Bill Craig of AECOM to Shane McCoy of the U.S. Army Corps of Engineers, Alaska District (<https://pebbleprojecteis.com/files/fb44bd22-9afc-4fc3-b4b8-3fb7d79df1c9>).

²² See Rebagliati, M. and J.R. Lang. 2015. Discovery of the Pebble porphyry Cu-Au-Mo deposit, southwest Alaska: History and exploration methods. Conference Abstract. Hunter Dickinson Inc., Vancouver, BC, Canada.

quantities of molybdenum in 2001 did not dissuade PLP from acquiring rights to the Pebble deposit.

Similarly, in a 2004 study titled “Pebble Gold Copper Project,” prepared for the State of Alaska Large Mine Permitting Team, the applicant described its project as “*a proposed open pit mining operation of the gold, copper, molybdenum, and silver deposit.*”²³ The Corps has not defined the overall project purposes to require silver in all alternatives, nor should it have. It should not have for molybdenum either.

It may also be worth noting that as recently as May 25, 2019, PLP made a slide presentation to the Alaska House Resources Committee, focusing on the importance of copper. The first of its “Pebble Facts” slides boldly stated that “*Pebble is a copper mine.*”²⁴

Accordingly, the lack of molybdenum, or a specific mineralization of gold or other associated metals, should not have eliminated other porphyry copper deposits from being considered as potentially less environmentally damaging practicable alternatives under the regulations. Had the applicant not discovered additional mineralization prior to applying for a permit, would the Corps have included molybdenum as a requirement in screening alternatives? The answer is clearly no, and it should not be a screening requirement now.

The Corps substantiates that there is a “worldwide demand” for copper, gold, and molybdenum.²⁵ And, as stated earlier, the Corps correctly determined that “*the public’s interest in commodities such as copper, gold, and molybdenum does not dictate a particular source of these commodities*”²⁶ (*i.e.*, other ore deposits should be considered in determining the least environmentally damaging practicable alternative).

This is entirely appropriate, particularly because PLP (previously known as Northern Dynasty Minerals, LLC) and its parent corporation, Hunter Dickenson, considered several hundred porphyry copper deposits within “the Americas” before focusing on the Pebble deposit in the 1990’s.²⁷ There appears no indication that specific quantities of secondary metals drove that search.

And, the applicant’s search was certainly not limited to Alaska, much less to the North American continent. That is likely because of where copper porphyry deposits are distributed worldwide (see figure below).²⁸

²³ Northern Dynasty Mines, Inc. 2004. Pebble Gold Copper Project. Draft Environmental Baseline Studies. Proposed 2004 Study Plan. Prepared for the State of Alaska Large Mine Permitting Team, Department of Natural Resources. June 2, 2004. 132 pages.

²⁴ See http://www.akleg.gov/basis/get_documents.asp?session=31&docid=23397

²⁵ DEIS, Chapter 1, pages 1-3 and 1-4.

²⁶ DEIS, Chapter 1, page 1-4.

²⁷ <https://pebbleprojecteis.com/files/fb44bd22-9afc-4fc3-b4b8-3fb7d79df1c9> (page 1 of 8).

²⁸ EPA’s 2014 Bristol Bay Watershed Assessment, Volume 3, Appendix H, page 5. References cited in original.

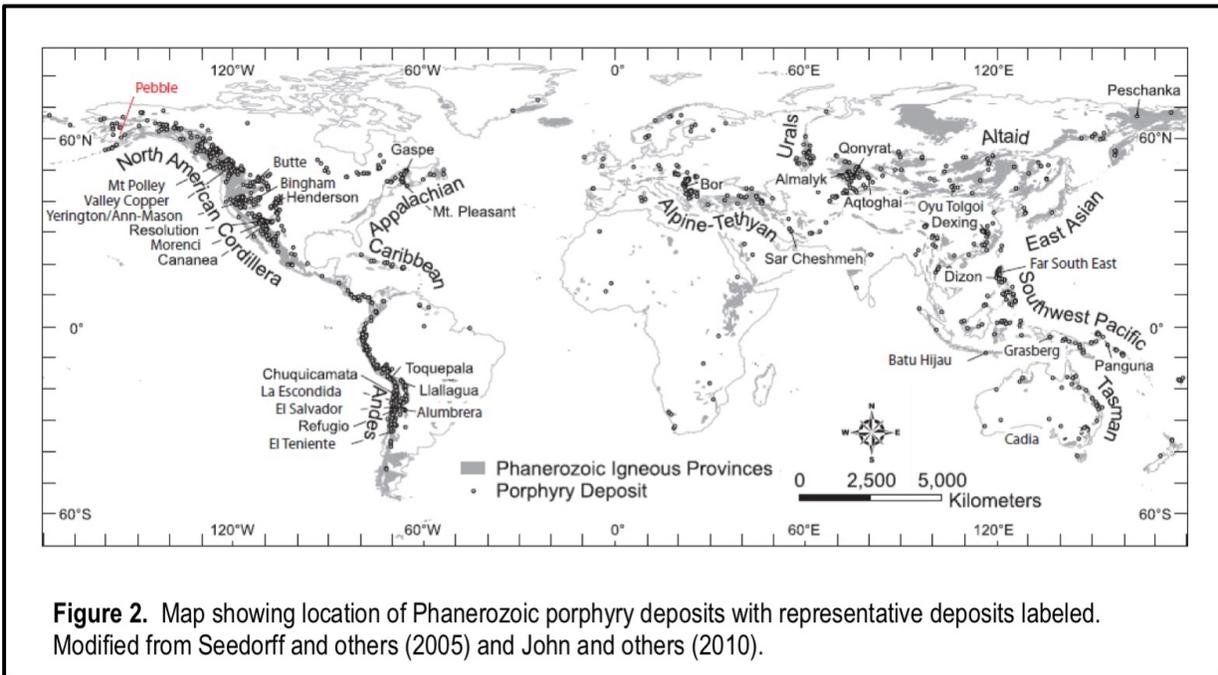


Figure 2. Map showing location of Phanerozoic porphyry deposits with representative deposits labeled. Modified from Seedorf and others (2005) and John and others (2010).

It is also important to note that in searching the Americas for copper porphyry deposits, the applicant (and/or its parent corporation) did not appear to consider CWA compliance and impacts to the “waters of the United States” as an important screening factor in assessing practicable alternatives. Citing a response from Northern Dynasty Minerals (NDM) for information (RFI-042), the Corps’ EIS contractor, AECOM, lists NDM’s screening factors as including:

- “1) the geological pedigree of a region and the potential for and/or known existence of large porphyry copper deposits;
- 2) regional familiarity with mining and resource development with an established regulatory framework;
- 3) the ability to explore and develop a project in a jurisdiction with a stable government;
- 4) the presence of available land that was open to exploration and mineral development;
- 5) reasonable proximity to tidewater for the transportation of concentrate to world markets;²⁹ and
- 6) opportunities outside established mining districts where there was reduced competition from established large mine operators.”³⁰

Inasmuch as impacts to the “waters of the United States” do not appear to have been considered in NDM’s screening of potentially practicable ore deposits, any of those deposits, if otherwise practicable, could be potentially less damaging environmentally.

²⁹ From the outset, it is clear that NDM and its parent corporation, Hunter Dickenson, were intending to sell the extracted copper and associated minerals to world markets and not the countries of origin. The ore from the Pebble deposit is likely to be sold to smelters in Asia.

³⁰ AECOM report, page 1 of 8.

This alternatives analysis is further complicated by the applicant's present proposal that professes to only extract a small portion of the Pebble deposit before closing the mine and reclaiming the site. This proposal flies in the face of the applicant's history and its past and recent statements. Mineral rights to the deposit were acquired because of its size and potential to supply very large quantities of copper by exploiting the entire deposit. The applicant has publicly touted the extent of these mineral reserves for well over a decade.

Accordingly, it would seem entirely inappropriate for the Corps to define overall project purposes in ways that exclude:

- 1) consideration of any alternative ore deposits that do not contain economically recoverable quantities all three of the specific metals that PLP has identified in the Pebble deposit;
- 2) consideration of any alternative deposits that exist outside the State of Alaska that are, or may have been, available to PLP and its parent corporation when they began searching the Americas for alternative copper porphyry deposits; and/or
- 3) smaller deposits that might be capable of producing yields equivalent to what PLP purports it will mine in 20 years before initiating closure proceedings.

But, that is essentially what the Corps has done.

The Corps has defined the basic and overall purposes of the project as the development and operation of "*a copper, gold, and molybdenum mine in Alaska in order to meet current and future demand*"³¹ (emphases added). In defining the project as "developing" and operating a mine, the Corps may also have inappropriately eliminated consideration of existing operations that the applicant might practicably have obtained, utilized, expanded, or managed to achieve the basic project purpose.

The Corps has also limited the geographic scope of environmental analysis to a tiny fraction of the applicant's own geographic scope of analysis wherein the applicant searched for sites to mine commodities "such as" copper, gold, and molybdenum, practicably. And, as discussed previously, the Corps has limited consideration of any alternatives to the specific 3-metal mineralization of the Pebble deposit.

Moreover, the Corps has inexplicably determined that the public need and interest for this project can somehow only be met in Alaska, even though the mine would produce commodities for which the Corps recognizes a worldwide need.³² That geographic limitation is simply wrong, suggesting that if the project was outside of Alaska it would be contrary to the public interest, while at the same time seeming to presuppose that the project, if built in Alaska, would not be contrary to the public interest. The whole issue of the Corps' public interest determination remains an open question that the DEIS is presumably intended, in part, to help disclose.

³¹ DEIS, Chapter 1, page 1-4.

³² The Corps states that whereas the public interest does not dictate a particular source for the commodities that would be produced from the Pebble mine project, "*the public also has an interest in improving the economy of the state, in the creation of jobs in the state, and in the extraction of natural resources for the benefit of the state.*" (DEIS, Chapter 1, Purpose and Need, page 1-4)

Whereas the localized public interest in Alaska may or may not benefit overall from the proposed mining project, the public interest in any other area where such a mine might be developed and operated would be similarly served, including outside of U.S. boundaries, and would undoubtedly result in less impacts to wetland and aquatic areas. Moreover, under the CWA regulations, the Corps' public interest review is only relevant if the District Engineer has first determined that a proposed permit authorization complies fully with the 404(b)(1) regulations, but then finds that the project would be contrary to the public interest.³³

Nothing in the Corps' regulations define the "public interest" so narrowly as to be limited to a single state or single District of the Corps,³⁴ and nothing in the CWA regulations provide the Corps with authority to target a particular public boundary (city, county, state, etc.) as limiting where an applicant can consider practicable alternatives, including outside of the United States. The fact that the Alaska District of the Corps only regulates discharges of dredged or fill material within the State of Alaska does not, and should not, limit its application of NEPA and the CWA in ways that would fail to consider areas outside of its limited geographic authority, insofar as 1) meeting the goals of the CWA, or 2) how the public interest might be better served.

Here, the applicant is a Canadian firm, and the ore that it would extract from public lands at the Pebble deposit would likely be sold to smelters in Asia. For the Corps to somehow conclude that the public interest for achieving the basic and overall purposes of this proposed copper mining project can only be met in Alaska makes no sense.

The Ninth Circuit has repeatedly counseled against improperly limiting the range of alternatives considered under the 404(b)(1) Guidelines. Specifically, it warns that "*an applicant cannot define a project so as to preclude the existence of any alternative sites and thus make what is practicable appear impracticable.*"³⁵ The court notes that in "*evaluating whether a given alternative site is practicable, the Corps may legitimately consider such facts as cost to the applicant and logistics.*"³⁶ In addition, the Corps has a duty to consider the applicant's purpose. But "*the applicant's purpose must be 'legitimate'*"³⁷

³³ See Corps regulations at 33 CFR 323.6(a): "*The district engineer will review applications for permits for the discharge of dredged or fill material into waters of the United States in accordance with guidelines promulgated by the Administrator, EPA, under authority of section 404(b)(1) of the CWA. (see 40 CFR Part 230.) Subject to consideration of any economic impact on navigation and anchorage pursuant to section 404(b)(2), a permit will be denied if the discharge that would be authorized by such a permit would not comply with the 404(b)(1) guidelines. If the district engineer determines that the proposed discharge would comply with the 404(b)(1) guidelines, he will grant the permit unless issuance would be contrary to the public interest." (emphasis added)*

³⁴ See Corps regulations regarding its public interest review at 33 CFR 320.4(a)(1): "*All factors which may be relevant to the proposal must be considered including the cumulative effects thereof: among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.*"

³⁵ See *Sylvester v. USACOE*, 882 F.2d 407, 409.

³⁶ See *Friends of the Earth v. Hintz*, 800 F.2d 822, 833-834.

³⁷ See *Sylvester v. USACOE* at p. 409 (citing *Friends of the Earth v. Hintz* at p. 833).

The record in this case documents that the applicant's purpose is to mine copper. Consistent with the Ninth Circuit, the range of copper mining alternatives (both onsite and offsite) should be evaluated based on costs and logistics. Here, however, the Corps has done what the Ninth Circuit has specifically stated is impermissible. It has included criteria (*i.e.*, 1. location in the State of Alaska and 2. presence of commercially viable deposits of gold and molybdenum) that “*preclude the existence of any alternative sites and thus make what is practicable appear impracticable.*”³⁸ Using the language of the Ninth Circuit, these elements of the project purpose are not legitimate. The Corps' definition of project purpose must be modified consistent with relevant case law.

The Corps' approach here conflicts own operating procedures. The Corps' 2009 Operating Procedures provide that “[*t*]he overall project purpose should be specific enough to define the applicant's needs, but not so restrictive as to constrain the range of alternatives that must be considered under the 404(b)(1) Guidelines.”³⁹

An additional factor that the Corps' EIS contractor appears to have considered inappropriately are the costs that the applicant has expended prior to applying for a permit. Whereas AECOM correctly cites the President's Council on Environmental Quality's guidance regarding alternatives,⁴⁰ it improperly cites the expenses that PLP has expended to date as a rationale for why other ore deposits may not be practicable alternatives.⁴¹

The CWA regulations have been in full force since 1986, and in evaluating alternatives under the Guidelines, an applicant's “sunk costs” cannot be added to the costs of developing a less-damaging design or site. The project proponent assumes a certain risk in moving forward financially for a project that requires, but has not received, 404 authorization. This risk cannot be transferred to the costs of another site, nor can these “sunk costs” be used to justify a finding that another site is not practicable on the basis of costs.⁴²

Given that the applicant acquired the rights to the Pebble deposit in 2001 after a search that began in the 1990's, the costs that it has expended, despite the knowledge that its project would discharge fill material into unprecedented acreages of special aquatic sites, are not relevant with

³⁸ See *Sylvester v. USACOE* at p. 409

³⁹ Department of the Army, *Updated Standard Operating Procedures for the U.S. Army Corps of Engineers*, July 1, 2009, p. 15.

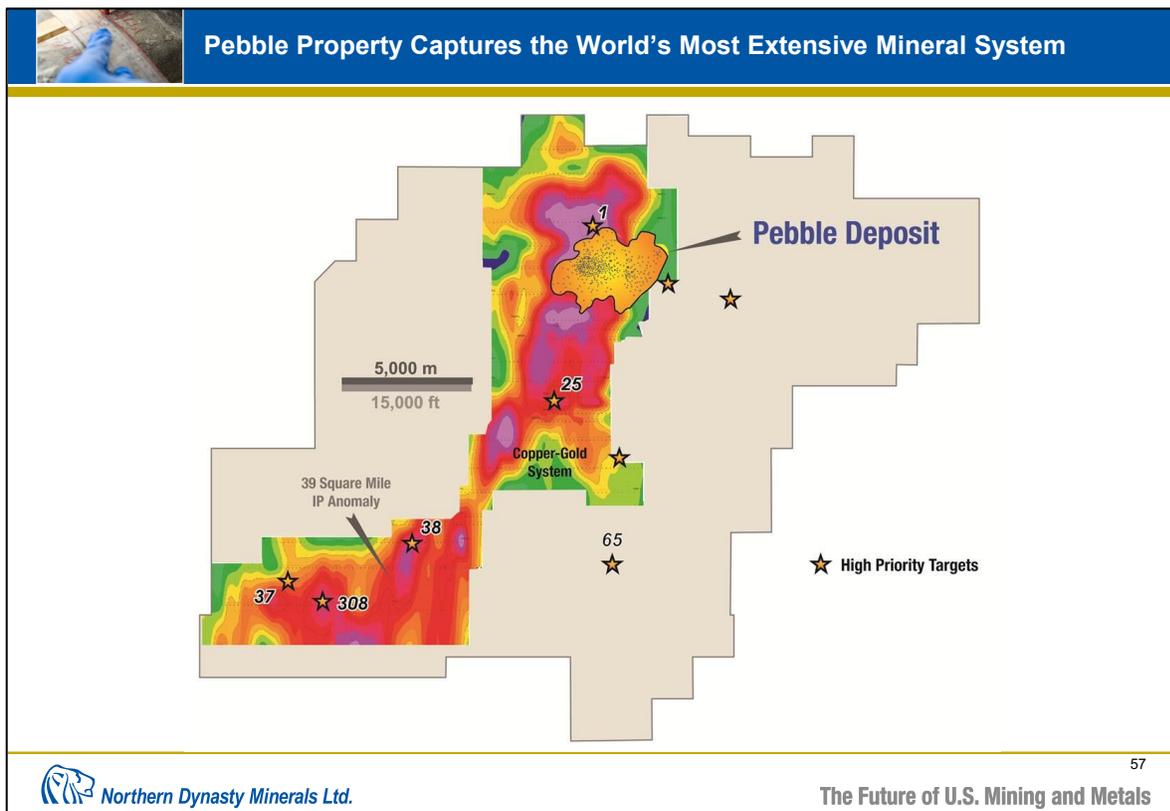
⁴⁰ *In determining the scope of alternatives to be considered, the emphasis is on what is 'reasonable' rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.* See: Council on Environmental Quality, Executive Office of the President, Memorandum to Agencies: Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations. 46 Fed. Reg. 18026 (March 23, 1981) As Amended (1986). Cited in Bill Killam and Bill Craig of AECOM to Shane McCoy of the U.S. Army Corps of Engineers, Alaska District (<https://pebbleprojecteis.com/files/fb44bd22-9afc-4fc3-b4b8-3fb7d79df1c9>), page 2.

⁴¹ “*Since 2001 when PLP (then Northern Dynasty) acquired the rights to the Pebble property, over \$850 million has been spent (PLP 2018-RFI 070), including \$150 million on environmental baseline studies.*” See: Bill Killam and Bill Craig of AECOM to Shane McCoy of the U.S. Army Corps of Engineers, Alaska District (<https://pebbleprojecteis.com/files/fb44bd22-9afc-4fc3-b4b8-3fb7d79df1c9>), page 3.

⁴² See page 294 in Yocom, T.G., R.L. Leidy, and C. Morris. 1989. Wetlands protection through impact avoidance: a discussion of the 404(b)(1) Alternatives Analysis. *Wetlands*. Volume 9, No. 2. Pages 283-296.

regard to less damaging practicable alternatives that the applicant could have considered and pursued. That the applicant delayed applying for a permit until 2018 should also not legitimize the costs it has expended during that time as a rationale for dismissing otherwise practicable alternatives. Nevertheless, it appears that these costs were improperly considered in dismissing alternatives in the DEIS.⁴³

Rather, the Corps should have required a showing from the applicant that it could not have expended similar resources at a different copper porphyry deposit to delineate and develop a viable copper mine. This should also include other areas around the Pebble deposit that the applicant controls and has identified “high priority targets” (see figure below from a Northern Dynasty Minerals presentation in September 2012).



According to PLP in 2011: “Numerous compelling exploration targets exist within the 186 square mile Pebble property claim boundary. Immediately adjacent to the Pebble deposit and east of the resource-bounding ZG1 fault is the high-grade intersection in drill hole 6348 (949 feet at 1.92% CuEq³) ... Outside the Pebble deposit, two seasons of exploration drilling have identified numerous zones of copper, gold, molybdenum and silver mineralization..... These

⁴³ Regarding the Pyramid deposit, AECOM advised the Corps that: “It would be extremely expensive to conduct an exploration and environmental baseline study program to match what has been done at Pebble (over \$850 million to date) and it is unknown at this time if such a program would identify adequate resources to plan mine development. AECOM recommends dismissing Pyramid as a reasonable alternative under CEQ guidelines.” [See: Bill Killam and Bill Craig of AECOM to Shane McCoy of the U.S. Army Corps of Engineers, Alaska District (<https://pebbleprojecteis.com/files/fb44bd22-9afc-4fc3-b4b8-3fb7d79df1c9>), page 8]

deposits and high-priority targets present near-term opportunities to expand and enhance known mineral resources on the Pebble property.”⁴⁴

Whereas these and other nearby deposits are described in a table in the DEIS (Table 4.1-1: Potential Reasonably Foreseeable Future Actions Evaluated for Cumulative Effects), they are only evaluated as potential future actions and not as potential alternatives to the proposed mine project. Most are being dismissed as sources of potentially cumulative impacts because “[r]esource delineation has not progressed sufficiently to forecast development with regard to identifying measured or indicated resources; and a project is not subject to development permitting or in a planning document.”⁴⁵ The applicant should bear the burden of proof in showing that such alternative deposits are not practicable alternatives had the applicant focused its resources in developing them instead of the Pebble deposit.

Here, the Corps has essentially erased the applicant’s burden of proof, by limiting any in-depth environmental assessments in the DEIS to the single ore body that the applicant is seeking to exploit. Any ore deposits outside of the State of Alaska or any that were not found have the same mineralization with regard to copper, gold, and particularly molybdenum were specifically defined out of consideration by the Corps, as described in Appendix B of the DEIS.⁴⁶

Ironically, had NDM not subsequently discovered recoverable quantities of molybdenum after acquiring rights to the Pebble deposit, the Pebble mine project would be eliminated from consideration as a practicable alternative in the DEIS under the Corps’ own flawed interpretation of the regulations.

Conclusion

In so narrowly defining the project purposes, the Corps has created an artificial geographic limit to the search for less damaging alternatives – a limit that is certainly not recognized by the industry it is regulating. This inappropriate determination of basic and overall project purposes removes the applicant’s burden of proof to clearly demonstrate that there are no less environmentally damaging alternatives to practicably mine copper and associated minerals than its proposal to destroy thousands of acres of wetland and aquatic areas in mining the Pebble deposit. In other words, the Corps’ own determination of “overall project purpose” seems likely to be self-directing towards a finding that a proposed copper mine with the greatest impacts to wetland and aquatic areas ever proposed in the United States is nevertheless the Corps’ choice as the LEDPA under the regulations.⁴⁷

⁴⁴ <https://www.northerndynastyminerals.com/news/news-releases/2011/northern-dynasty-receives-positive-preliminary-assessment-technical-report-for-globally-significant-pebble-copper-gold-molybdenu/>

⁴⁵ See DEIS Table 4.1-1, pages 4.1-8 to 4.1-21. Alternative ore deposits include Pebble South, Big Chunk South, and Big Chunk North, which have been under the applicant’s control for years, and may potentially be less damaging alternatives, had the applicant focused efforts to delineate their resources, rather than the Pebble deposit.

⁴⁶ DEIS Appendix B, pages B-6 and B-8.

⁴⁷ See 40 CFR§230.10(a). No permit may be issued if there is a ‘less environmentally damaging practicable alternative’ (the LEDPA) to achieve the basic project purpose. As written, DEIS would have the public believe that the Pebble Project, likely the most-damaging alternative for the purpose of copper mining, is somehow the least-damaging practicable alternative, simply because of how narrowly the Corps has chosen to define its overall purpose.

The Corps should:

1. Re-define the basic and overall project purposes of the Pebble Project in ways that are consistent with the industry it is regulating, and that are consistent with Corps Standard Operating Procedures and associated case law;
2. Prepare a revised DEIS that fully and fairly assesses alternatives to the proposed project; and
3. Require that the applicant prepare an alternatives analysis pursuant to Section 404(b)(1) of the Clean Water Act that evaluates the copper porphyry deposits within and outside of the state of Alaska that are or were available to the applicant where copper and associated minerals could be mined practicably with less environmental harm than what is being proposed at the Pebble deposit.